Supertrends. Investing with purpose.

From societal trends
to investor impact.

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Investing with purpose.

Michael Strobaek
Global Chief
Investment Officer
Credit Suisse

The COVID-19 pandemic has proven to be a great disruptor, accelerating progress in some fields such as technology, but reversing hard-fought gains in other areas including poverty, health, quality education and gender equality.

Governments, businesses and citizens are now looking at how to "build back better" in the post-COVID world. While the pandemic will pass, the world will likely keep this objective firmly in mind in order to address the significant challenges that lie ahead and to steer our economies and societies toward a more inclusive and sustainable future.

Investors play an important part by directing their capital toward investment solutions that participate in this effort – in other words, investing with purpose. Our long-term thematic equity investing framework, Supertrends, which covers a wide range of topics from climate change and demographics to infrastructure and technology, provides an avenue to do so.

When we first launched the Supertrends in 2017, our objective was to identify multi-year societal trends that could lead to fast-growing business opportunities and enable investors to grow their capital.

Nannette Hechler-Fayd'herbe
Global Head of
Economics & Research
Credit Suisse

At the same time, our Supertrends provided a sound way to make a positive societal impact through listed equity investments that put societal needs and trends at the core of their thematic approach.

This year, our Supertrends are pushing forward with the latter aim by mapping how the themes that we have selected are directly or indirectly participating in the advancement of the United Nations' Sustainable Development Goals (SDGs) – see our chart on page 12–13 for further information. The need for additional capital is great: the UN has estimated the annual SDG financing gap at USD 2.5 trillion.

By clearly aligning the Supertrends subthemes with the SDGs, we can provide investors with a simple and transparent framework to prioritize their investments according to their purpose, be it climate action (SDG 13), reduced inequalities (SDG 10), decent work and economic growth (SDG 8) or good health and well-being (SDG 3) among others.

We believe that investing with purpose – both in terms of financial as well as societal and environmental goals – is the future of the financial industry. This, too, is the path forward for our Supertrends.

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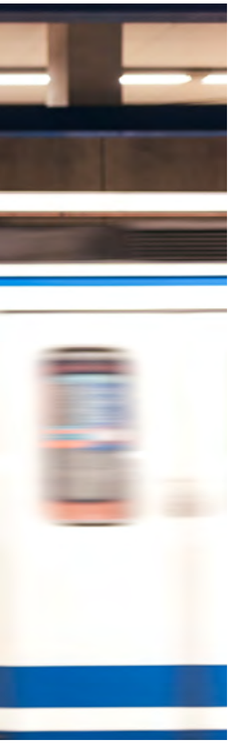


Equity investing with purpose and impact.

Daniel Rupli
Head of Single Security Research
Credit Suisse

In 2015, United Nations member states adopted the Sustainable Development Goals (SDGs), calling them a "shared blueprint for peace and prosperity for people and the planet." This also holds true for investors, who can contribute to achieving these goals by carefully selecting their investments. Our Supertrends provide a valuable guide in this regard. Rooted in the understanding of demographic and other deep societal trends, they uncover areas where companies can provide tangible solutions to key demands and aspirations reflected in the UN SDGs. In short, our Supertrends help investors combine financial performance with purpose and impact.

The global coronavirus pandemic has heightened the importance of the 17 UN SDGs to serve as the guiding principles for economic activity and development, as well as government cooperation and international relations, in our view. A recent acceleration in global efforts to fight climate change through sustainability-related infrastructure investments serves as a good example of how investment opportunities can be paired with the SDGs, which is what we have outlined in our Supertrends for the first time this year.

Gearing up for sustainable growth

Over the past twelve months, political leaders around the world have intensified their sustainability focus and taken further measures to achieve ambitious greenhouse gas (GHG) emission targets, with "net zero" the new magic number. For example, European Union (EU) leaders have announced several updates on the EU Green Deal, vowing to put an increased emphasis on clean hydrogen, expand wind generation capacities and strengthen electric mobility, among other initiatives. With the inauguration of US President Joe Biden, the USA made a comeback on the climate front, rejoining the 2015 Paris Agreement and reiterating its commitment to invest in cleaner energy and renewable electricity production. China, currently the world's largest emitter of GHG, in September 2020 committed to achieving net-zero emissions by 2060. To achieve the GHG reductions and maintain high economic growth, China is shifting its focus toward service-oriented sectors such as digital technologies, high-tech industries, the electrification of transport and renewable electricity production.

Our Climate change and Infrastructure Supertrends are well positioned to benefit from this political momentum and the investments planned over the decades to come. The Climate change Supertrend focuses on the decarbonization of economic activity, impacting life on land and below water and contributing to healthy communities. Meanwhile, the Infrastructure Supertrend's core themes are energy and water, but it also includes the infrastructure required to facilitate the movement of people and goods through safe and efficient transportation. The Smart cities subtheme addresses the trend toward urbanization in modern societies, requiring an intelligent response to waste management and urban emissions.

Emphasizing the "S" of ESG

Our politically oriented Anxious societies Supertrend addresses better equality of opportunities, with a focus on the affordability of essential human needs such as housing, education, healthcare and personal security, and the issue of decent employment amid changing labor markets. With the COVID-19 pandemic, popular frustration continues to center on domestic pain points. Job security due to economic challenges and changes, the rising cost of education, increasing healthcare expenses, as well as personal and public safety are among the top priorities for many individuals around the globe. We see interesting investment opportunities in companies that address these challenges and provide solutions to lowering the costs of basic services. Companies that address requirements for reskilling and upskilling, in other words employers that score solidly on the "social" aspect of environmental, social and governance (ESG), are also in focus.

Focus on health

The COVID-19 pandemic has further underscored demographic and other inequalities. In terms of health, older age groups – people aged 70+ years – have been hit harder by the pandemic as they are more vulnerable to becoming severely ill with the virus. Beyond COVID-19, disadvantaged population groups with poor healthcare coverage and co-morbidities have focused attention on public health more broadly. We expect both ends of the world's demographic pyramid – the elderly and the younger generations – in our Silver economy and Millennials Supertrends to continue to drive change ahead.

The aging global population inevitably increases the need for medical solutions for old-age health conditions and associated healthcare costs and coverage, especially as this trend increasingly impacts emerging markets. The advances in vaccine development made amid the pandemic are likely to accelerate other research efforts centered around some of the most challenging health conditions, like oncology or neural diseases.

Toward the other end of the generation scale, the Millennials are pioneering a healthier kind of consumption. After shaking up shopping and advertising habits, we believe they will next disrupt the finance sector, a focus this year in our Digital natives sub-theme. We expect digitalization to dominate change in ever more sectors going forward. Moreover, sustainability and responsible consumption should continue to thrive thanks to the influence of the younger generation. This is why we are shifting our attention to include regenerative agriculture and biodiversity within the Millennials Supertrend this year.

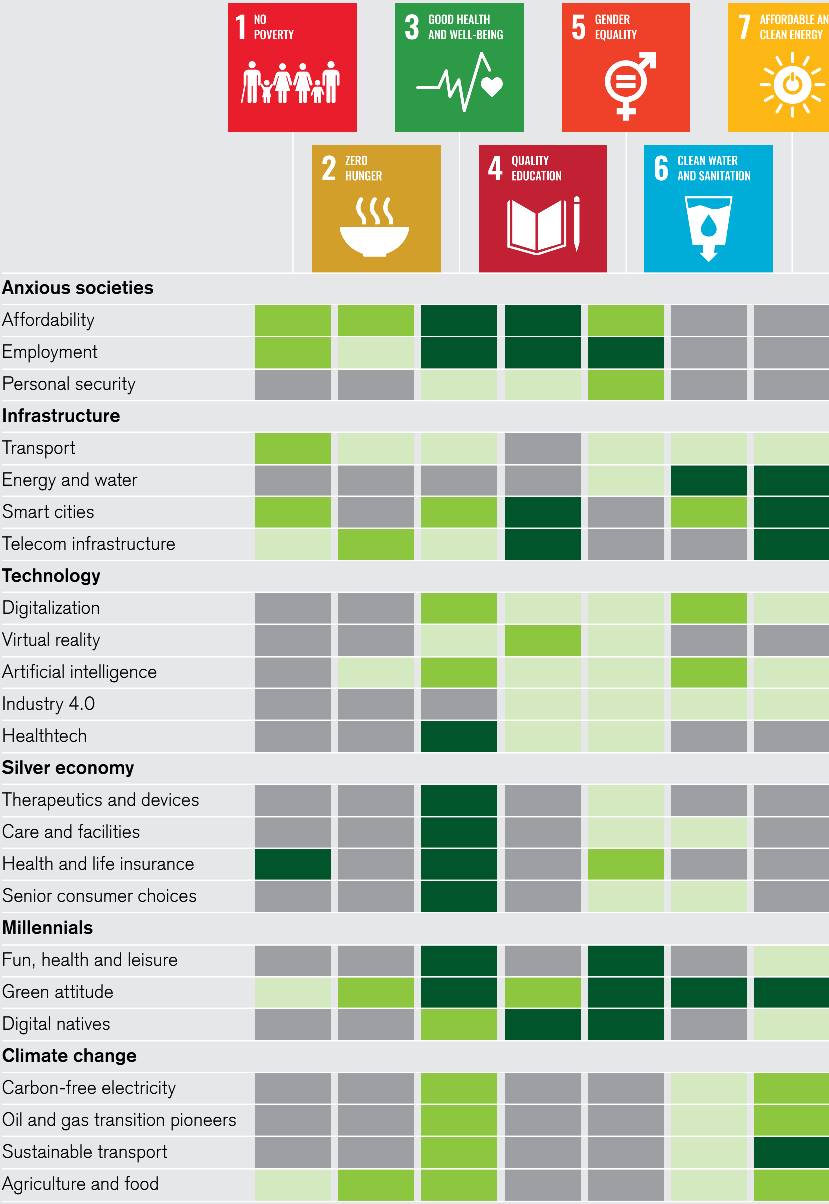
The technology enabler

Technology is at the heart of many advances toward the UN SDGs. We believe that the next frontier will be the "touchless economy" as the removal of physical interaction in human communication, life and work has accelerated dramatically during the COVID-19 pandemic. We are convinced that touchless user interfaces and interconnected multi-devices and applications will increasingly enable interaction via voice assistants, while biometric authentication functionality based on voice or image recognition could provide personalized services for users at work or at home. Last but not least, we expect digital cash to be king in the future. We touched upon the digital payment industry in our Supertrends last year and are updating this topic in the pages ahead.

Creating impact

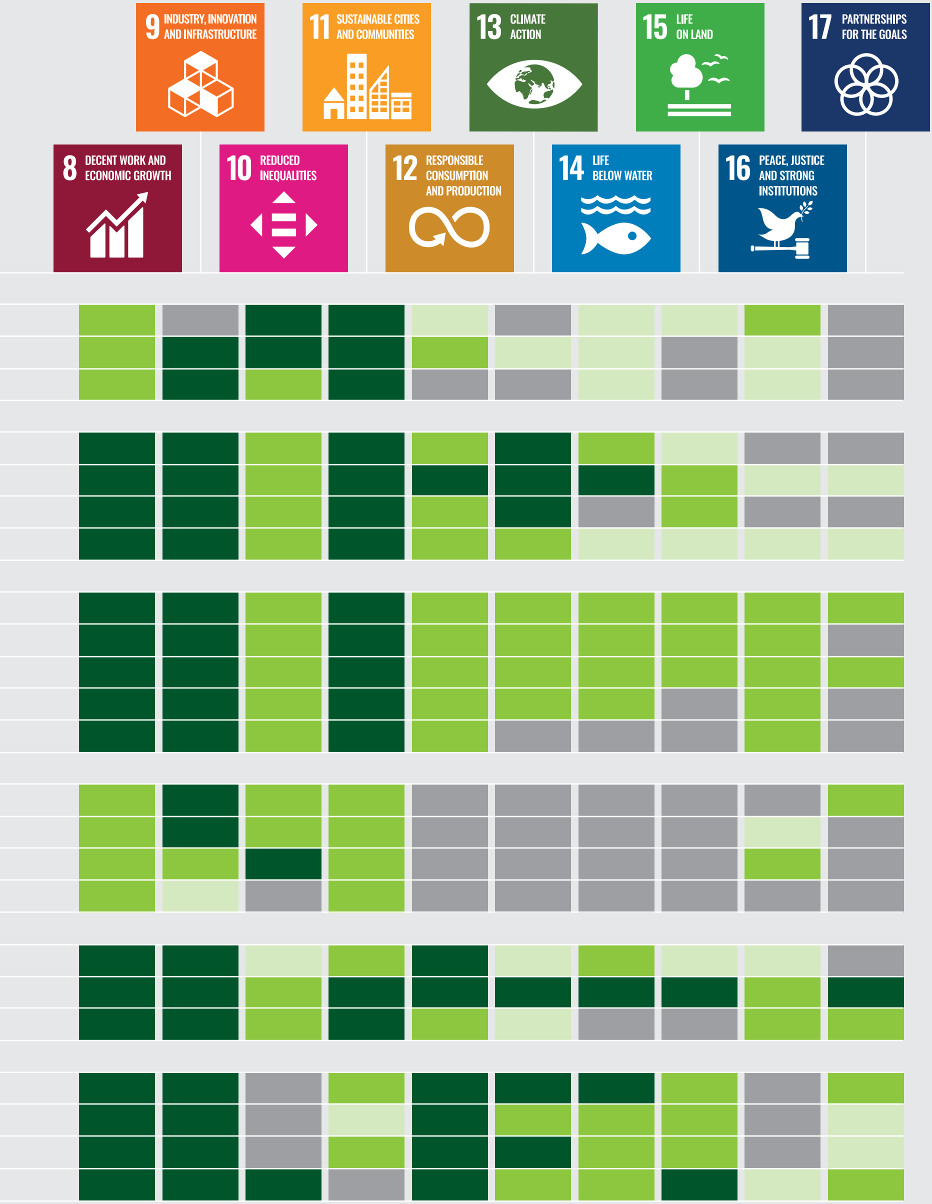
In the four years since their launch, our Supertrends have proven to deliver attractive financial returns while addressing highly relevant topics. Looking ahead, we expect that their relevance will further increase through their purpose and impact. In this regard, our mapping against the SDGs will hopefully serve as a valuable compass for investors.

UN SDGs – Mapping



Theme does not align with UN SDG

Theme aligns partly with UN SDG



Theme aligns with UN SDG

Theme aligns closely with UN SDG

Anxious societies

Reto Hess
Head of Single Security Research, Equity Industrials
Follow Reto on LinkedIn

Over the past year, the key concerns of citizens around the world, including inequalities with regard to lack of opportunities or limited access to basic necessities, rapidly changing work environments, old age funding, housing affordability, healthcare and education have accelerated at the same time as government deficits have skyrocketed amid the COVID-19 pandemic. The private sector, including investors, can provide effective solutions that do not necessarily entail more government spending but require the right incentives and partnerships.

Takeaways: Ones to watch

Companies providing solutions to lower the costs of basic needs, such as healthcare, housing, education and nutritious food. This includes innovative and individualized products/services that are better aligned with personal needs, as well as the adoption of new technologies or materials.

Companies providing reskilling/upskilling or education as skill requirements radically change. Furthermore, companies with strong human capital management including workforce development and a diversity culture that have improved talent sourcing/retention and increased productivity.

Companies helping to improve the safety and security of citizens. Prevention could become more important as a result of COVID-19, offering growth opportunities for healthcare, diagnostic or cleaning and hygiene companies in particular but also insurance, capital goods or infrastructure companies.

Affordability

Even more of a priority
There is ample reason for people to be anxious and some popular pain points have increased with the pandemic. The Credit Suisse Anxiety Index, which tracks whether the level of societal discontent is rising or falling, shows that popular discontent continues to rise. Based on a recurring Ipsos survey, "What Worries the World," COVID-19 concerns have declined from a peak in April 2020, however worries about crime and violence, corruption, poverty and social inequality or unemployment have strongly increased at the same time.

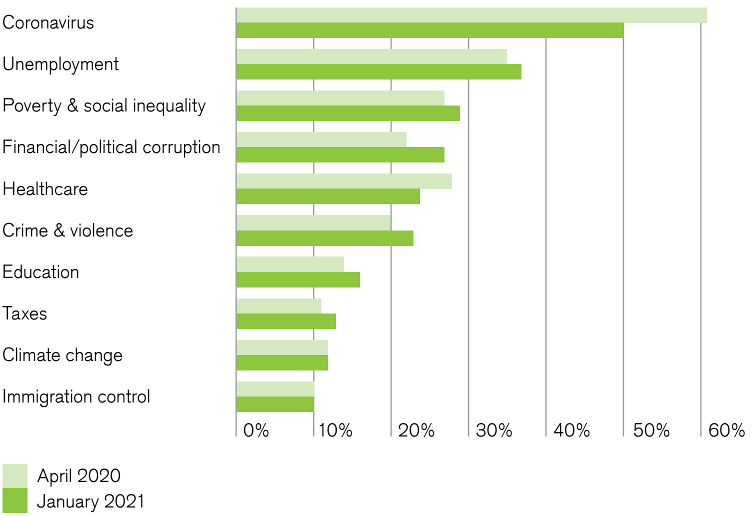
No poverty is the first of the 17 UN SDGs. However, the pandemic pushed 71 million people into extreme poverty in 2020, the first increase in decades [1]. Moreover, based on the experience from past epidemics such as SARS or Ebola, inequality can be expected to increase, with lower-income households or low-skilled workers more affected, according to The World Bank.

In terms of crime, the latest data shows that Western countries (we track France, Germany, the UK and the USA) face a worsening situation as per Numbeo, a global database, while the level of perceived crime has improved in developing countries (we track Brazil and China).

Following a stressful global event like COVID-19, providing concrete solutions to these pain points could help "lower the temperature." However, such initiatives cannot be based on big government models, as governments are already spending future generations' tax revenues. Fortunately, private sector solutions are plentiful and companies are responding in innovative ways to address the affordability of critical basic needs, such as housing, education, healthcare and nutritious food.

Housing affordability remained a key issue for many households during the pandemic, and this topic is increasingly on the radar of both governments and private companies. The New Zealand government, for example, recently instructed the country's central bank to consider housing affordability when making monetary policy decisions. In the USA, San Francisco continues to struggle with a longstanding house affordability crisis, with a shortfall of more than 220,000 affordable homes for the poorest residents in the Bay Area, according to the Momentum for Lasting Solutions report. Helping to solve these problems provides opportunities for companies – both in terms of their finances and reputation – and a number of tech giants have stepped up investments in affordable housing in San Francisco and other cities across the country. Healthcare costs remain a burden as well. McKinsey forecasts USD 125–200 billion in incremental annual US health system costs due to COVID-19. However, a study from Peterson and the Kaiser Family Foundation expects total 2020 US health spending to remain below the previous year's level, as health service revenues, particularly for ambulatory care settings, declined.

What worries the world



Source Ipsos Public Affairs, What Worries The World, January 2021 (interviews conducted between 18 December 2020 and 8 January 2021, international sample of 22,003 adults, Ipsos Online Panel system), Credit Suisse

Any decline would be a historic exception, albeit the expected drop is modest and less than the expected GDP decline as health spending has mostly recovered[2]. COVID-19 was a clear catalyst for technology adaptation in this area. According to FAIR Health, telehealth volumes increased from 0.2% of medical claim lines in June 2019 to a peak of 13% in April 2020, though they had leveled off to 6% in November 2020. Greater adoption of technology together with other measures such as the increased use of generics remain important steps to reduce healthcare costs. Finally, education affordability remains an important topic. The pandemic had a negative impact as school closures affected almost 1.6 billion students, accounting for 94% of the world's student population[3]. The need to lower costs and increase the reach of education remains important and we believe technology will play a major role in achieving these targets.

Healthy diets remain a luxury

According to the UN's Food and Agriculture Organization, about two billion people did not have regular access to safe, nutritious and sufficient food in 2019, increasing the risk of different forms of malnutrition, such as child stunting and adult obesity. The issue here, too, is affordability: The World Food Programme estimates that healthy diets cost 60 percent more than diets that only meet the requirements for essential nutrients, and almost five times as much as diets that only meet dietary energy needs. COVID-19 will most likely worsen the issue, and an additional 83 to 132 million people were at risk of being undernourished in 2020[4]. Food companies have started to acknowledge the importance of affordable nutrition, launching new food products, for example with a higher fiber and protein content that are cheaper than similar available products.

Relatedly, overweight and obesity rates have almost tripled since 1975, driven by increased consumption of energy-dense food with high fat and sugar content, as well as less physical activity, which in turn has led to an increase in non-communicable diseases[5]. In the USA, a study from the Brigham and Women's Hospital found that unhealthy diets account for USD 50 billion or almost 20% of heart disease, strokes and type 2 diabetes costs in the USA, highlighting the huge savings potential from healthy diets.

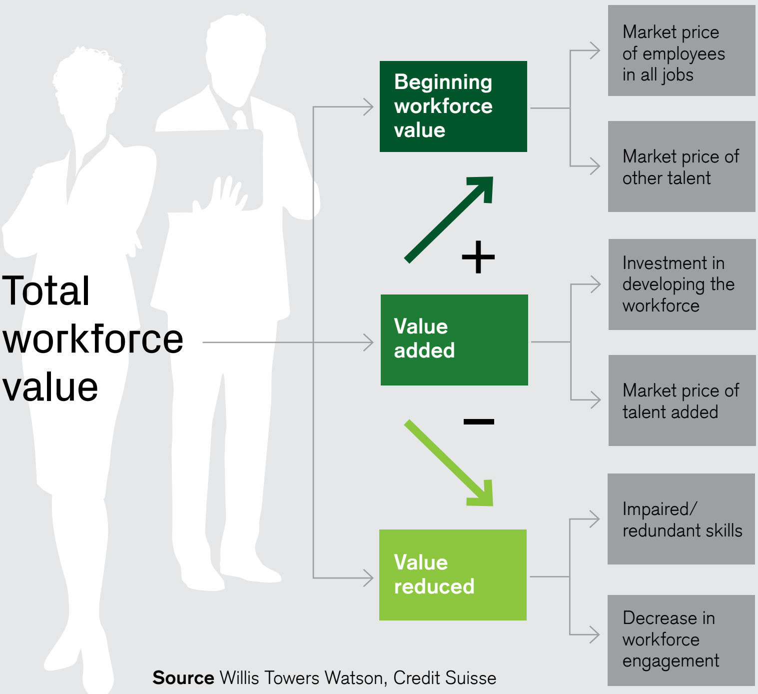
Employment

Work in progress
COVID-19 has changed the way we work as many people have been forced to work from home. Workers appreciate the flexibility, with 75% of respondents in an Adecco survey favoring a hybrid model – a mix of office and home – with most preferring a 50–50 (home-office) split, a finding consistent across generations, countries and lifestyles (workers with and without children). Companies are consequently preparing for post-COVID-19 working life, planning for hybrid models and other innovative solutions such as near-home office, where employers rent office space close to an employee's home. However, work-from-home is not an option for everyone, with employees in food service, transportation or retail, which typically employ young and lower-income workers, the least likely to work from home[6].

According to a McKinsey survey, the pandemic has accelerated other trends such as increased automation and digitalization within the work world, as well as the use of contractors or gig workers. One robotics company reported that its e-commerce customers had increased the volume processed with their picking robots by 244% year-over-year in Q4 2020[7]. As workers are displaced by technology, reskilling efforts will be increasingly critical for workers' future employability and also provide an opportunity to boost economic growth.

According to the World Economic Forum's (WEF) core scenario, investments in the upskilling and reskilling of workers could result in a global productivity improvement of 3% on average, an increase in global gross domestic product by USD 5 trillion by 2030, and the creation of more than 4.5 million jobs.

The market price of human talent

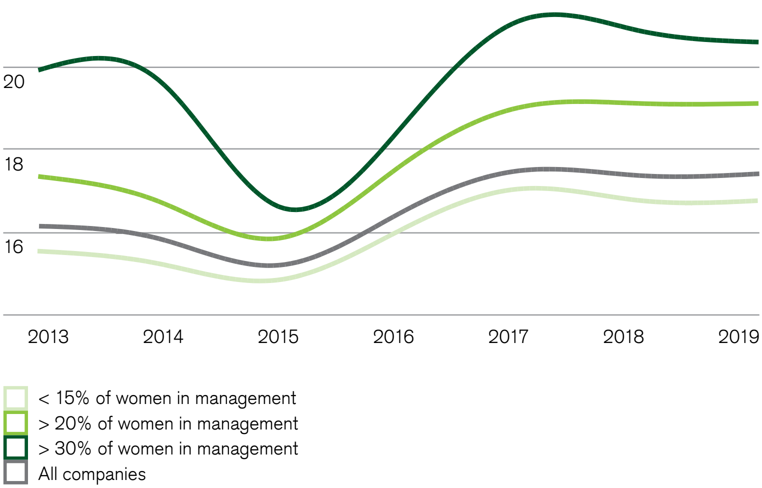


Source Willis Towers Watson, Credit Suisse

We believe that successful talent and human capital management will be key in the future. However, investments in the workforce are discouraged by current accounting rules, which are not suitable and provide the wrong incentives, according to a white paper published by the World Economic Forum in collaboration with Willis Towers Watson. The report suggests there needs to be a shift in how the workforce is viewed from an expense to an asset. For example, while costs for workforce cuts can be treated as a one-off expense and do not show up in core earnings, investments in workforce development have to be expensed and therefore impact earnings. In contrast, if investments in learning or development were to be capitalized and recognized on the balance sheet, they would then be reflected as a "value" and encourage companies to invest more in people[8].

Gender diversity is another lever to get the best out of an organization – socially and financially – and we believe that investors will continue to pressure companies to establish and follow a comprehensive gender diversity strategy. Three-quarters of organizations that participated in a PWC survey said that diversity is a priority, however one-third still see diversity as a barrier to progression. In late 2019, the Credit Suisse Research Institute published the "CS Gender 3000" study, which found not only a strong relative outperformance of companies with a higher percentage of women in management, but also a higher operating margin.

Women in management: Higher operating margins since 2013
EBITDA margin, non-financials (sector-adjusted, sales-weighted, in %)



Source Credit Suisse Research Institute, The CS Gender 3000 in 2019: The changing face of companies, October 2019

Personal security

Making prevention a priority

In the past, we have written about people's anger over personal data abuse and concerns surrounding crime and violence, including fears regarding terrorist attacks and a challenging geopolitical environment. We continue to believe that investments in cybersecurity or homeland security are important to solve people's major pain points. However, we also believe that COVID-19 and climate change have led to a change in priorities. We expect increased mid- and long-term spending on diagnostics and pandemic surveillance/response solutions after the COVID-19 crisis revealed how painfully underresourced the world was in these areas. The Global Health Security (GHS) Index, the first comprehensive assessment of countries' preparedness for outbreaks like COVID-19, illustrates this gap. The average overall GHS Index score was only 40.2 out of a possible 100 in terms of preparation for a pandemic or epidemic, according to the GHS Index October 2019 report.

Post-pandemic, healthcare-related threats will remain high and we expect ongoing investments into much needed innovation – helping pharma and biotech companies solve major issues, such as the threat from antimicrobial resistance. Hundreds of millions of lives have been saved since the world began using antimicrobials some 70 years ago. However, every use of antimicrobials can create opportunities for antimicrobial resistance, and drugs can rapidly lose their effectiveness. If no action is taken, a UN report estimates that global deaths related to drug-resistant diseases could climb from 700,000 annually to ten million by 2050. As per World Bank simulations, in a high antimicrobial impact scenario, the world could lose 3.8% of its annual GDP by 2050.

Additionally, we expect that COVID-19 may lead to increased spending on cleaning and hygiene measures for workplaces and public spaces, just as the 9/11 terror attacks did for security spending. For example, starting on 6 May 2020, New York shut down its subway system every night for cleaning and disinfection (in February 2021, the city began to partially restore overnight service). Improvements to ventilation and air cleaning are also needed, as COVID-19 can be spread via airborne particles in indoor environments.

One ventilation-systems maker estimates that the focus on indoor air quality will create a market of USD 10–15 billion, growing at a double-digit rate on an annual basis[9].

Another consequence of COVID-19 could be a higher awareness of tail risks and increased protection efforts from outlier events – be it pandemics or other disasters. Natural catastrophes such as the 2011 tsunami in Japan, which killed 16,000 people and cost USD 360 billion, occur from time to time[10]. An earthquake in Southern California – the United States Geological Survey estimates a 31% probability of a magnitude 7.5 earthquake in Los Angeles in the next 30 years and a 20% probability in San Francisco – could cost hundreds of billions (in USD). Another potential risk is a solar flare, which is the largest explosive event of our solar system. While solar storms typically last just a few minutes to several hours, the effect from geomagnetic storms can remain in the Earth's atmosphere for days or weeks, according to NASA. As an example of the damage that can be inflicted by space weather disruptions, NASA points to the outage of the Hydro-Québec power network in 1989, which was caused by a transformer failure (due to geomagnetically induced currents) and led to a blackout that lasted more than nine hours and affected over six million people.

In light of governments' and companies' lack of preparation for COVID-19, they will likely strive to be better prepared for a potential future event. The focus will increasingly be on "resilience." The recent power blackout in Texas due to a blizzard that left more than 4.5 million homes and businesses without power is an example that basic infrastructure should be resilient. This offers opportunities for infrastructure or capital goods companies.

Finally, the convergence of recent biotechnology developments with other emerging technologies holds tremendous promise but also increases the risks of misuse. Advances in three specific technologies – additive manufacturing, artificial intelligence and robotics – could each facilitate the development or production of biological weapons and their delivery systems[11]. With an increased sensitivity for such risks, we could see higher spending in prevention, such as explosive or chemical detection and public safety.

Infrastructure

Jens Zimmermann
Senior Equity Analyst,
Energy & Utilities
Follow Jens on LinkedIn

Goal 9 of the UN SDGs emphasizes the need for sustainable and resilient infrastructure to support economic development. As the world emerges from the COVID-19 pandemic, we expect developed and emerging countries to make an even greater effort to achieve this goal and strengthen the backbone of their economies by overhauling vital transport, power and telecom systems. Moreover, efforts are underway to build resilient infrastructure to reduce the risks related to extreme weather events and to replace outdated transport infrastructure that poses safety hazards.

Takeaways: Ones to watch

As the world emerges from the COVID-19 pandemic, efforts are underway to invest in sustainable infrastructure for transport, power and telecom systems in developed and emerging countries.

US infrastructure stimulus spending for the construction of transport systems, 5G networks and energy efficient & smart buildings should support construction and infrastructure operator companies.

Ambitious carbon reduction policies will drive global investments in renewable power generation and electricity network infrastructure. This is positive for renewable utilities and grid operators.

Telecom infrastructure companies benefit from the consolidation of the European tower market and from data center outsourcing to multi-tenant data centers.

The path to sustainability

Infrastructure spending is an important part of the fiscal stimulus packages that governments around the world are putting in place to revive their economies following the COVID-19 recession. As for infrastructure projects, government focus has shifted to providing more support for sustainable infrastructure investments, as countries attempt to build a greener economy, and placing a greater focus on building climate-resilient infrastructure to protect the investment against the impact of climate change. The recent cold spell that left millions of Texans without power provides a case in point of how extreme weather conditions can impair vital infrastructure.

In the USA, President Joe Biden has unveiled a USD 2.3 trn infrastructure program in addition to his USD 1.9 trn COVID-19 relief package. The proposed infrastructure stimulus contains about USD 700 bn for green initiatives related to electric vehicles infrastructure, electricity networks, energy efficient buildings, green technologies and clean energy manufacturing.

In Europe, the EUR 750 bn European Union (EU) recovery fund is designed to build greener, more digital and more resilient economies, in addition to shoring up struggling sectors. China has already put in place a similarly large fiscal stimulus, which helped it return to economic growth in Q2 2020. Moreover, its pledge to become "carbon neutral" by 2060 signals an important infrastructure investment shift for the country's 14th Five-Year Plan starting in 2021.

Resilient infrastructure improves the reliability of services, increases the asset life and protects asset returns for investors. Climate-resilient construction can involve management measures (such as changing maintenance schedules) as well as structural measures (like raising the height of bridges to account for rising sea levels).
In addition, crumbling infrastructure due to underinvestment and lack of maintenance also poses a significant danger and inhibits economic growth.

Transport

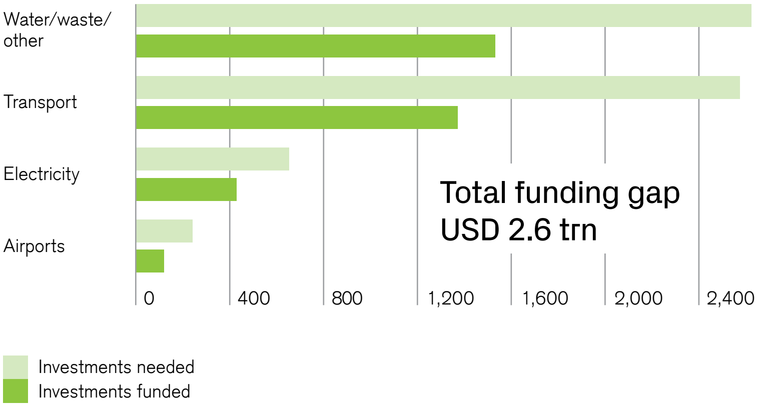
Climate-proofing mobility
2020 was a difficult year for infrastructure companies, particularly for the transportation sector, which suffered amid the pandemic-related lockdowns. While railroad operators already saw a solid recovery during last year's COVID-19 related travel disruptions, toll road and airport operators lagged behind due to the collapse in travel demand. The start of vaccination campaigns has raised hopes that 2021 will be a year of recovery for toll road and airport companies as travel demand should rebound once the share of the vaccinated population significantly exceeds the number of new infections.

The pandemic has further delayed necessary infrastructure investments in the transportation sector. The long-term effects associated with chronic underfunding of transportation infrastructure, long known to be a public safety issue, impact a country's economic growth, employment and competitiveness. The American Society of Civil Engineers (ASCE) estimates that the investment gap between needed and likely investments in US transport infrastructure systems will reach more than USD 1.2 trillion by 2029 and USD 2.5 trillion by 2039.

Future planning of infrastructure construction in the transportation sector has to focus more on the physical impact of climate change. For example, the EU has developed construction and design standards to increase the resilience of road infrastructure in its ROADAPT ("Roads for today adapted for tomorrow") project. A climate-resilient transportation network takes into account climate aspects such as temperature changes (melting road surfaces and frozen railway lines), rising sea levels (flooding of coastal roads, railways and ports) and changing storm patterns (damage and disruption of bridges and airports).

In modeling the impact of a major flood in Paris, the Organisation for Economic Co-operation and Development (OECD) found that 30%–55% of the direct damage would affect infrastructure assets, while 35%–85% of economic losses would be related to disrupted transportation services and electricity supply rather than the flood itself. Thus, ensuring that transport infrastructure is climate resilient will not only help to lower the direct losses related to climate events, but also reduce the indirect costs of disruption to the infrastructure network.

US infrastructure needs by system
2020–29: US infrastructure needs and funding gaps (in USD bn)



Source American Society of Civil Engineers, Credit Suisse

Energy and water

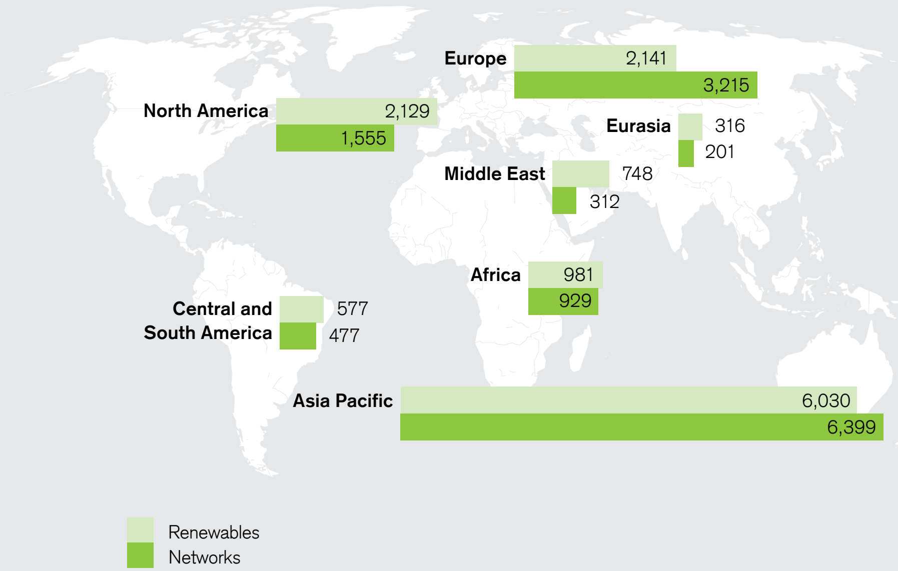
Smarter, better, cleaner

For governments to meet the ambitious emission reduction targets in line with the Paris climate goals, the International Energy Agency (IEA) estimates that carbon emissions in power generation have to decline globally by 77% by 2040. Therefore, the focus for sustainable infrastructure investments in the energy sector has shifted to adding renewable power generation capacity as fast as possible.
The IEA estimates that the world has to spend about USD 12.9 trillion in total between 2020 and 2040 to finance the required growth for renewable power generation infrastructure. In comparison, USD 1.2 trillion will be needed to add nuclear power capacity and USD 1.3 trillion for new thermal capacity from fossil fuels (mostly gas).

Infrastructure investments for electricity networks have to increase at a similar rate to improve the efficiency and connectivity of transmission networks as power grids will have to become smarter and better connected when an increasing share of intermittent solar and wind energy enters the power system. The IEA estimates that the world has to spend USD 13.0 trillion for network infrastructure investments between 2020 and 2040 globally. Almost half of these grid investments will be needed in Asia Pacific, while 25% and 9% of the total are expected to be spent in Europe and in North America, respectively.

The construction of ultra-high-voltage grids will become crucial to connect power networks over very long distances and to transport renewable energy from the point of generation to far-away consumers. China's ultra-high-voltage power lines already connect the remote areas of its western cities with its eastern coast and there are plans to expand the power lines across borders to Japan and Russia. Similarly, the Desertec project envisions bringing solar energy from the North African desert to European electricity markets with high-voltage underwater cables. Moreover, the EU is considering an "electricity silk road" that connects China's renewables-rich Northwest with Europe via a 5,000-km high-voltage grid.

The path to lower carbon emissions
Total renewables and network investments under the Sustainable Development Scenario from 2020 to 2040 (in USD bn)



Source International Energy Agency (World Energy Outlook 2020), Credit Suisse

Water faces transportation problems as well because water losses can reach up to 50% in some cities during the distribution process to customers. Thus, the refurbishment of existing water pipes is as important as building new infrastructure in the energy segment. The OECD estimates that between 2020 and 2040, investments totaling USD 5.6 trillion will be needed to improve water infrastructure globally, which is slightly less than half of the required electricity network investments.

Smart cities

Renovation time: Buildings go carbon-neutral
In addition to a well-functioning transport network, an efficient building infrastructure has become the backbone of growing cities. As mega cities are large carbon emitters, with the building sector accounting for a growing share of carbon emissions, the construction and retrofitting of building systems in large cities has to become smarter and more sustainable to make a tangible contribution to global carbon reduction efforts.

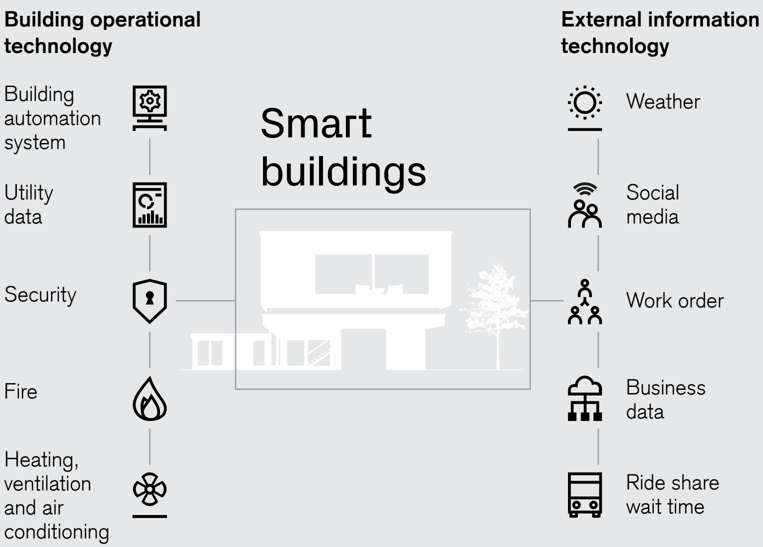
In order to meet the targets established in the Paris Agreement, the World Green Building Council estimates that all new buildings must reach net zero emissions by 2030 and that 100% of buildings have to operate at net zero emissions by 2050. Though only a very small percentage of buildings today are carbon-neutral, there is strong political will for improvement.

Sustainable building solutions can also offer attractive financial returns as the construction of carbon-neutral buildings requires higher upfront capital investments in return for lower operating costs over the lifetime of a project. As the building industry also drives employment, we expect a significant amount of fiscal stimulus to be used to construct and retrofit buildings, allowing policymakers to achieve two goals at the same time: support the post-pandemic economic recovery and reduce energy demand along with cutting carbon emissions.

Smart buildings use big data and the internet of things to operate building automation systems, which simultaneously control energy efficient heating and lighting, building access and security as well as elevators and escalators. Accordingly, smart building infrastructure also makes urban development more climate-resilient as such buildings can better cope with increased cooling or heating demand due to temperature changes and improve system security against changing storm patterns.

As buildings become smarter with automated systems, waste management will employ artificial intelligence to enable a more intelligent recycling process. While recycling machinery can already sort ready-to-recycle items, it cannot take products apart. However, as waste increasingly includes gadgets like smartphones and tablets as well as electric vehicles, waste separation will become more and more important. We expect robots to increasingly be used to extract the valuable raw materials contained in electronic waste, such as gold, silver, platinum and cobalt.

Building for the future



Source Johnson Controls, Credit Suisse

Telecom infrastructure

Keeping up with the data
Demand for internet data traffic and data storage has increased exponentially during the COVID-19 crisis as videoconferencing and e-learning have replaced in-person meetings and classroom schooling. Even beyond the pandemic, the growth potential for data center-infrastructure providers should remain strong, for two reasons: first, to reduce costs during the COVID-19 recession, many companies have closed their own data centers and moved data to the public cloud or to so-called multi-tenant data centers (MTDCs); second, leading cloud services providers like Amazon and Microsoft have seen a strong increase in demand for cloud services from applications like Zoom video, video games and other bandwidth-intensive products, which has forced them to accelerate their expansion plans.

Accordingly, the leading cloud service providers have already outsourced about half of their data center space to MTDCs. As these MTDCs have gained in scale and cloud providers have been unable to meet the accelerated cloud demand, we project the share of outsourced data center space to MTDCs to increase to 60% in the years ahead.

As the build-out stage of the 5G wireless cycle should last for another five years, according to our estimates, 5G adoption should lead to a significant increase in wireless network traffic around the world. Accordingly, when telecom carriers grow their 5G mobile coverage, telecom tower companies benefit from the adoption of the 5G mobile standard, particularly in Europe and North America, the regions that we project to reach the highest penetration of 5G mobile connections.

The major difference between the two regions is that in the USA, independent tower companies already play a much bigger role than in Europe because US telecom operators have long relied on leasing towers from independent tower companies. As a result, independent tower companies already own about 90% of the telecom towers in the USA, while in Europe, less than half of the towers are owned by independent tower companies or so-called “operator-linked” tower companies (subsidiaries of telecom operators).

As such, the European telecom tower market is less mature than the US market. We believe that more divestures of tower portfolios should be expected as European telecom operators sell their telecom towers to independent companies to raise cash and pay down debt. The ongoing consolidation of the European tower market offers growth potential for the leading independent tower companies in Europe and also for US tower companies, which we expect to make a more aggressive push into the European tower market over the next five years.

Technology

Uwe Neumann
Senior Equity Analyst,
Technology & Telecom
Follow Uwe on LinkedIn

The COVID-19 pandemic has accelerated the digital transformation. Among others, it led to the advent of a new "touchless" industry, opening up new opportunities that we capture in this Supertrend. Going forward, we expect digital products and services to continue to rank high among consumers' and enterprises' priorities. In parallel, an expected strong 5G smartphone replacement cycle, further investments in 5G networks and datacenters, as well as enterprises increasingly moving to the cloud remain supportive factors for our Supertrend.

Takeaways: Ones to watch

- Software, IT services and platform companies that serve the "touchless industry" and are enablers of digital payments, AI, VR, AR and industry automation processes.

- Companies with strong exposure to the rollout of 5G networks/devices that should accelerate the adoption of VR/AR applications. Firms that increase efficiencies through the application of VR/AR.

- Providers of AI solutions and services for use in areas as diverse as healthcare and education, among others.

- Companies focused on industrial automation solutions and the manufacturing of collaborative robots; providers of quantum technologies.

- Companies in the healthcare sector that use digital technology and big data analytics to improve execution in diagnostics, therapeutics, sequencing, mRNA technology, care delivery and medical devices.

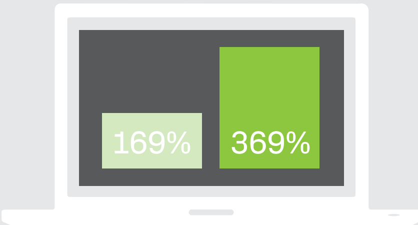
Digitalization

No hands: Technology goes touchless
The digital transformation was underway long before the COVID-19 pandemic hit, but it received a significant boost amid the crisis. Research firm Statista projects that direct investments into digital transformation will total USD 6.8 trn between 2020 and 2023, assuming an acceleration from USD 1.3 trn spent in 2020 to USD 2.3 trn in 2023. Statista expects 65% of the world's gross domestic product to be digitalized by 2022. Indeed, the pandemic has led to a material acceleration of virtual doctor visits, application downloads and digital games usage, as well as opening new ways of digital collaboration and education, among others. The shift to working from home has increased demand for new enterprise applications and remote control infrastructure. Companies have realized that when they move their infrastructure to the cloud, they can better manage collaboration among their workforce. Besides the digital transformation, a strong 5G smartphone replacement cycle, continued high investments in 5G networks, edge computing and datacenter infrastructure, as well as an accelerating move from enterprises into the cloud remain core structural growth trends driving digitalization.

The removal of physical interaction in our communication, life and work environments has been probably the most drastic change the pandemic has brought about. It has shifted our thinking about how we effectively use communication and collaboration tools. In this context, touchless user interfaces and interconnected multi-devices and applications have increasingly been enabling interaction via voice assistants. Moreover, biometric authentication functionality based on voice or image recognition could provide personalized services for users at work or in everyday life. While this was already possible before the COVID-19 crisis, the adoption of such technology has increased materially in recent months. Facial recognition, emotion analysis or optical character recognition are computer vision technologies that improve "touchless" user interfaces. As the adoption of the latter increases, it should create significant demand for artificial intelligence (AI) software, sensors, intelligent semiconductors and other hardware.

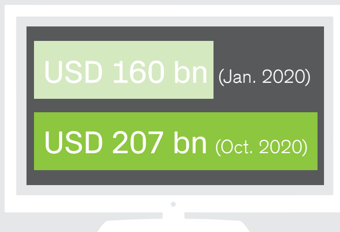
COVID-19: A crisis becomes a catalyst for IT sector

March 2020
December 2020

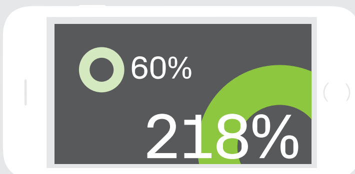


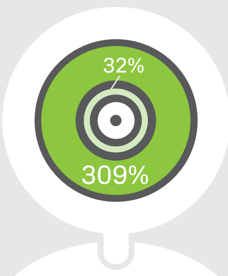
Zoom video
Revenue growth (YoY %)

E-commerce retail sales



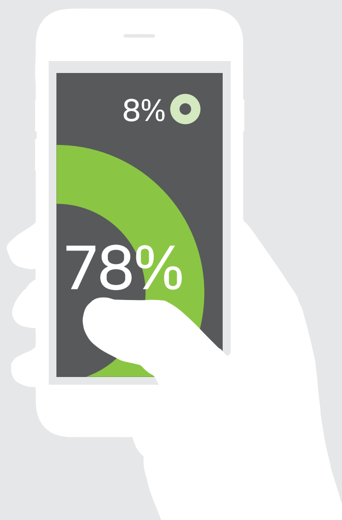
Video collaboration
Revenue growth (in %)

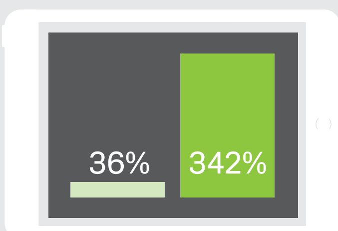




PC webcams
Revenue growth (in %)

Gaming
Revenue growth (in %)





Tablets & other accessories
Revenue growth (in %)

Source Company reports, US Census Bureau via FRED, Credit Suisse

Global e-commerce has been growing strongly in recent years, lending a boost to (software-led) payments businesses. With the rise of e-commerce, accelerated by the pandemic, requirements have started to change. New entrants and incumbents have developed new capabilities for remote digital payments, with PayPal, for example, becoming a leader in online payment services. On the client-facing side, innovative solutions like digital wallets and peer-to-peer (P2P) payment apps have been developed, reflecting consumers' preferences for convenience (no cash handling) and speed (faster payments), facilitated by the growing penetration of smartphones and mobile internet applications.

Virtual reality

Stars aligned for growth in VR/AR

The COVID-19 crisis and rollout of 5G mobile networks have materially improved the outlook for the augmented reality (AR) and virtual reality (VR) market. No-contact services, which AR technology can enable, are one growth area that has benefited in particular amid the pandemic. It effectively allows IT to touch the real world with a digital overlay, for instance allowing long-distance collaboration. With their wide spectrum and fast download capacity with low latency, 5G communication networks provide the necessary power for data management that should lead to the breakthrough of VR and AR technology (now named XR = extended reality) to the mass market in a not-too-distant future.

The COVID-19 lockdowns have forced companies to come up with creative solutions for business continuity. Dutch company ASML provides an interesting example in this regard. Some 30% of ASML's business is maintenance services for their semiconductor equipment machines. Engineers usually travel to Asia to provide such support directly to local teams. Given the COVID-19-related travel bans, ASML decided to provide that support from Eindhoven using AR/VR software. According to the company, this initiative has gone so well that management has decided to maintain this support even after the pandemic is over. In another example, a surgeon at the Hospital for Special Surgery in New York in December 2020 performed the first knee-replacement surgery in the USA using Medacta's NextAR cloud-based augmented-reality platform, which generated 3D models of the knee and determined issues such as the extent of bone to be removed and the optimal placement of the implant. While we expect the adoption of such innovations to grow, we also believe that on top of the increased necessity and acceptance of using XR, the rollout of 5G mobile networks and edge-computing investments offer the technological precondition to develop XR services. The market size for XR hardware and software is still small and growth expectations are moderate so far. However, growth of the XR market might accelerate from 2021 onward given cues from large companies like Facebook.

In a recent shift, Facebook in its Q4 results call highlighted that it is investing substantially in the “next computing platform” of AR/VR, calling Apple its biggest future competitor in this space. We see such rivalry as positive for consumers, as such competition should drive the development of best-in-class products.

Artificial intelligence

COVID-19 and SDGs drive increasing use of AI
As the COVID-19 pandemic spread across the globe, scientists had to find answers to three key questions – what causes the disease, how to diagnose patients (symptoms) and how to find a treatment and vaccine. With hospitals full of patients, using their medical history and data to come up with relevant answers for these three questions was a daunting task. Yet thanks to the evolution of AI, medical experts have been able to analyze this data to not only study the origins of the disease but also develop vaccines at unprecedented speed.

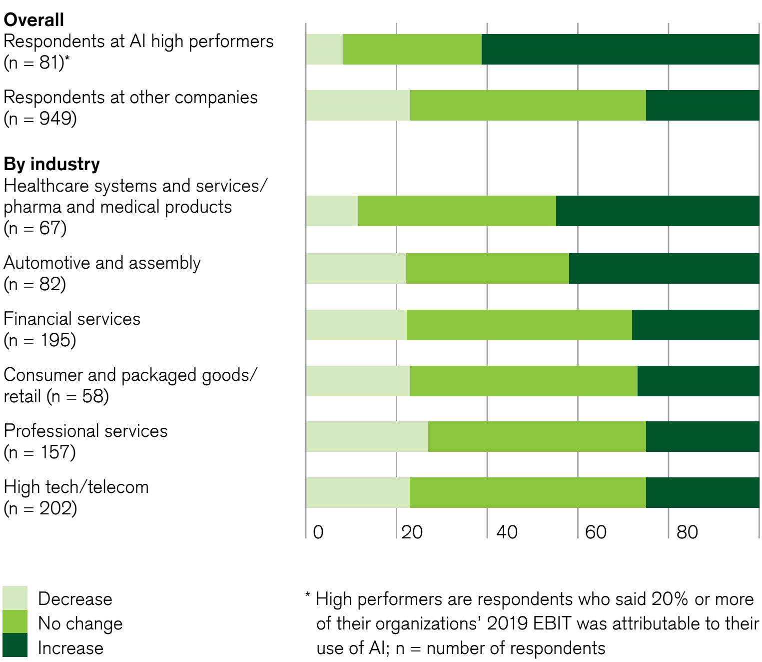
AI capabilities like machine and deep learning have played an important role in identifying COVID-19 drugs and delivering a vaccine at a rapid pace, for instance by helping study the proteins that make up the virus or identifying components that are unlikely to mutate. Another area buoyed by the pandemic has been video collaboration. Communication platform specialist Avaya has integrated cloud AI solutions from NVIDIA to enhance its collaboration capabilities such as live transcriptions, removal of background noise, virtual green screen backgrounds and enhanced presenter features. Online education and edutainment have also benefited from the pandemic, and the “teacher as an AI-based algorithm” is increasingly an option in cutting-edge platforms from companies like TAL Education, 2U and Byju.

Amazon Web Services last year launched a machine-learning-powered website called "CORD-19 Search," which helps researchers quickly access and search over 50,000 COVID-19-related research papers using natural language questions. AI is also increasingly seen as a solution to help reach the UN SDGs, for example in supporting the optimization of energy production.

IDC forecasts worldwide AI market revenues including software, hardware and services to have reached USD 156.5 bn in 2020, up 12.3% YoY. It also expects revenues to cross USD 300 bn by 2024, implying a five-year compound annual growth rate of about 17.0%. Software is expected to account for the lion's share of these revenues (~80% of the total), and within software, most of the revenue is likely to come from AI applications.

Investments into AI amid COVID-19 crisis

% of respondents across business functions reporting adoption of AI



* High performers are respondents who said 20% or more of their organizations' 2019 EBIT was attributable to their use of AI; n = number of respondents

Source McKinsey Global Survey "The state of AI in 2020," Credit Suisse

The USA, China and Europe have been competing to become the most advanced AI nation. According to a 2019 report by the US-based Center for Data Innovation, China is leading in the number of firms that are either adopting or are piloting AI services and applications such as autonomous driving or natural language-based education apps.

Industry 4.0

Quantum computing and digital twins
The pandemic has disrupted almost all areas of life, factories being one of them. Labor-intensive work has been impacted amid a temporary shortage of workers as COVID-19 infections increased, underscoring the case for industrial automation and the deployment of collaborative robots ("cobots"). Many major robot makers such as Fanuc and Quanta Computer expect cobot demand to spike in 2021 and are planning to increase production. We also expect newer technologies to gain traction, one of them being quantum computing. Once developed, high-powered quantum computer models have the potential to be one of the most disruptive examples of Fourth Industrial Revolution technologies. But there still is some way to go.

Future quantum computers are expected to simulate component interactions within complex hardware systems, more precisely and comprehensively calculating system loads, load paths, noise and vibration. This integrated analysis can optimize the manufacturing of individual components in the overall system's context, reducing the cumulative impact of managing several processes at the same time, and improving cost without sacrificing overall system performance.

Aircraft manufacturing has taken the lead in this area, with quantum computing expected to create a substantial paradigm shift in how aircraft are built and flown. For example, Airbus aims to be an early adopter of quantum technologies to enhance its products and services and solve the most complex aerospace challenges. Partnerships being formed between industrial and technology firms like Microsoft, Alphabet and IBM should help push the adoption of quantum computing.

In manufacturing, the digital twin concept (defined by GE as software representations of assets and processes that are used to understand, predict and optimize performance in order to achieve improved business outcomes) is now being adopted across the industry. We expect adoption to play a vital role in building information modeling (BIM) amid a boost to green stimulus and technology to make buildings more efficient. We see rising 5D BIM (three physical dimensions plus budgeting and scheduling) adoption developing into fully-fledged Building Lifecycle Management software packages, similar to those in industrial product lifecycle management. According to a survey by Gartner, 18% of companies implementing the internet of things (IoT) have already implemented digital twins, and 70% were either implementing or planning to implement them by October 2021. Consequently, 88% of companies implementing IoT should have implemented digital twins in a matter of a year.

Healthtech

An era of innovation
COVID-19 has propelled healthtech innovation, driving revenues in this sector from USD 350 bn in 2019 to an estimated USD 600 bn in 2024, according to McKinsey. Through the pandemic, firms like Moderna or BioNTech find themselves on the frontiers of biotechnology and have become household names. The imminent need for a COVID-19 vaccine allowed firms to deploy mRNA vaccine technology for the first time successfully. Given the versatility of the mRNA platform, we consider the success of mRNA vaccines a leap forward in the evolution of potential further applications of the mRNA technology in other therapeutic areas, such as regenerative medicine or personalized cancer vaccines.

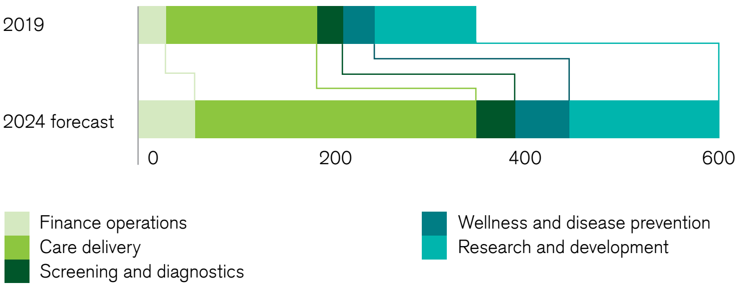
Somewhat tied to that is the field of precision medicine, which aims to deliver targeted or even patient-specific therapies. Roche is pioneering this new era of personalized healthcare with the launch in early 2021 of image analysis algorithms using AI to define the best treatment for breast cancer patients. With regard to cancer detection, Thermo Fisher Scientific is among the companies developing liquid biopsies, another promising technology (vs. surgical biopsies currently) to detect small amounts of cancer cells and their residuals in a patient's blood stream. Besides the higher convenience to patients compared to a surgical biopsy, liquid biopsies allow earlier detection of cancer and monitoring of the cancer progression – such as the adoption of mutations – over time. Given the intricate link between the time point of detection and an oncology patient's prognosis and long-term survival, the technology should also be able to deliver dramatic changes in health outcomes. Also, 2020 saw noteworthy advances in bioprinting technology. For instance, 3D Systems has made significant progress in the development of bioprinting systems for solid-organ scaffolds and human lung regeneration, an important milestone for human organ printing in the future. Moreover, diseases such as diabetes, whose incidence is continuing to rise due to demographic aging and unhealthy lifestyles, require pharmaceutical as well as technology-enabled therapies. With the integration of continuous glucose monitors and insulin pumps already a reality today, an artificial pancreas – often considered the "holy grail" of diabetes therapy – seems within striking distance.

Throughout 2020, telemedicine remained a flourishing sector with both market leaders like Teladoc and newly listed firms like Amwell gaining acceptance. In the future, this sector is likely to be even more accessible with the adoption of 5G and AI chat bots facilitating global connectivity.

The adoption of wearable technologies in healthcare continues to grow, with large technology companies like Amazon, Google and Apple developing personalized health devices or apps. In parallel, Amazon recently launched its online pharmacy platform and Alibaba raised USD 1.3 bn to expand its e-commerce pharmaceutical business. In light of these developments, one may well wonder whether tech firms may at one point dominate the healthcare industry.

Healthy growth

Global digital health market size, (in USD bn)



Source Healthtech in the fast lane: What is fueling investor excitement (McKinsey & Company). December 2020, Credit Suisse

Silver economy

Lorenzo Biasio
Senior Equity Analyst,
Healthcare
Follow Lorenzo on LinkedIn

Despite the pandemic's disproportionate impact on older population cohorts, we do not see the ongoing fundamental demographic shift as being derailed. Central to our Silver economy Supertrend lies the projection that the world's senior population will double to more than two billion by 2050. This shift will create demand, but will also unearth challenges that call for innovative solutions – in healthcare, insurance and consumer and property markets. Throughout the pandemic, several such solutions and technologies saw accelerated adoption and have entered the mainstream.

Takeaways: Ones to watch

- Biopharmaceutical, medical technology and life sciences companies that address conditions affecting the elderly through innovative products such as immunotherapies or antibody-drug conjugates.
- Providers and operators of senior housing, managed care organizations and telemedicine operators that can direct patients to the most efficient care setting.
- Health and life insurance companies, private wealth advisors and asset managers with strong pricing capabilities.
- Consumer companies focusing on basic needs as well as the more discretionary wishes of senior consumers, such as tourism companies, beauty product companies or manufacturers of prescription glasses and hearing aids.

3 GOOD HEALTH AND WELL-BEING

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

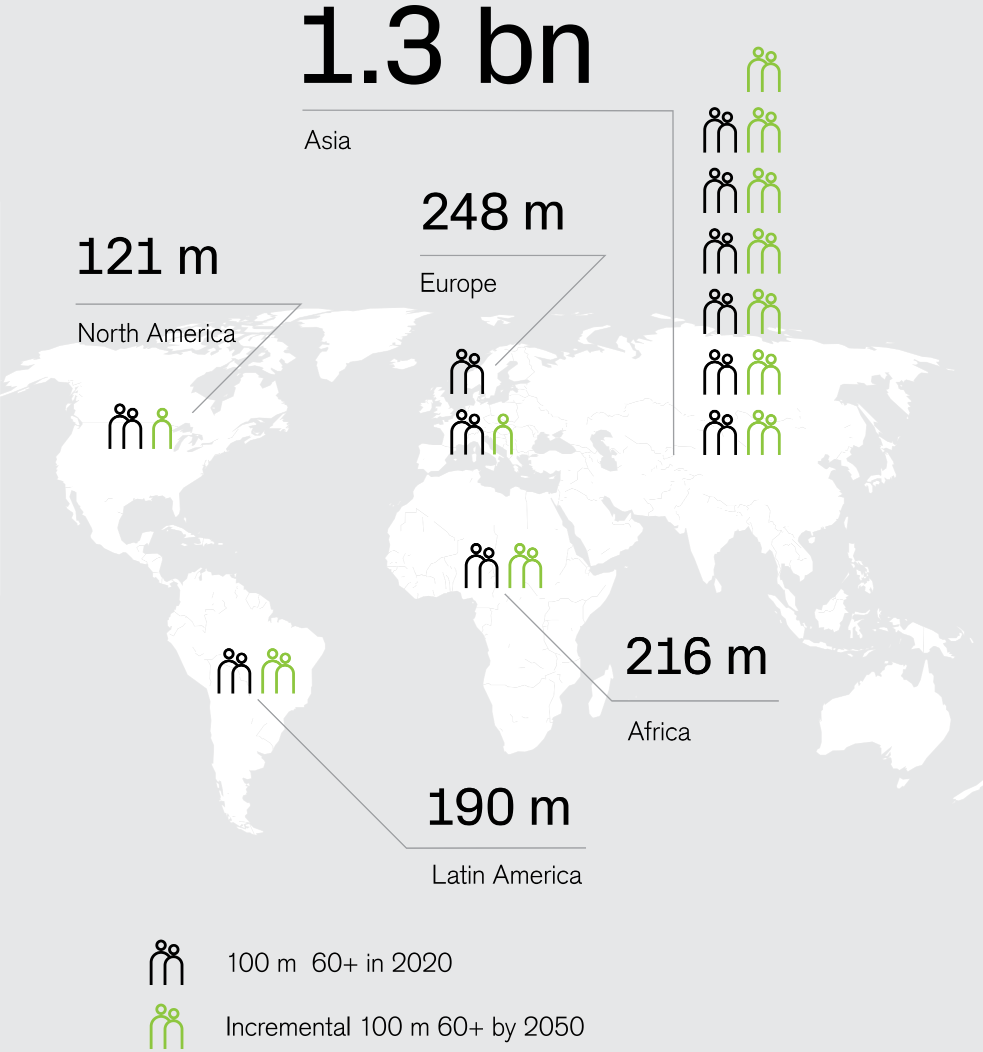
11 SUSTAINABLE CITIES AND COMMUNITIES

Therapeutics and devices

Innovation and prevention are key
Healthcare remains the sector most affected by an aging population. The incidence of many chronic diseases increases with age, with co-morbidities (i.e. patients having several diseases concomitantly) occurring often. However, genuine disease-modifying drugs for some of the most burdensome age-related diseases such as various cancers or Alzheimer's remain elusive. This is why the increasing ubiquity of antibody therapies, which carry higher versatility to develop more targeted treatments, are a welcome development, as well as new additions to the biotechnological toolbox. The latter notably involves nucleic acid therapies, antibody-drug conjugates or cell and gene therapies. While these technologies are not yet well known among the general public, we think the clinical success of mRNA vaccines (one form of nucleic acid therapies) in the COVID-19 pandemic underscored the importance of steady investments in promising but far-from-commercial technologies, as well as how quickly a technology can go mainstream when the time is right. Given mRNA technology's versatility in other areas such as metabolic diseases or regenerative medicine, as well as the potential of the other technologies outlined, we think the industry's innovation trajectory will be sustained for years to come, quite possibly delivering therapy breakthroughs in diseases with significant unmet need.

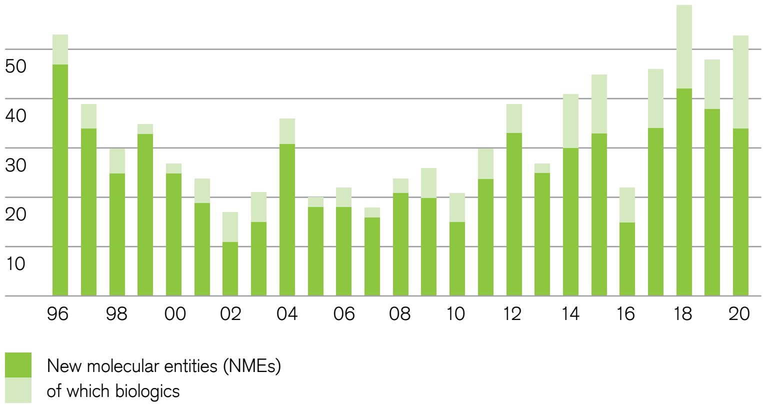
The flip side of the coin of such innovation, used on a growing number of patients, is the cost element. Based on the historical trajectory, healthcare costs can be expected to continue to rise at a rate several hundred basis points above gross domestic product growth. This raises an important debate and requires solutions to contain healthcare costs amid such demographic developments. Here, we think technology will increasingly play an important role along the continuum of prevention, (early) diagnosis and treatment. Preventing disease in the first place is highly cost-efficient. Moreover, where prevention is not applicable or feasible, experience shows that earliest-possible diagnosis – enabled by technological leaps in liquid biopsies (an application of genetic sequencing) or medical imaging, for example – increases patient survival and typically mitigates costs. Lastly, technology will also leave its mark on treatments, thanks to applications at both the level of the treating physician and patients.

Population aged 60+ by 2050



Source United Nations, Department of Economic and Social Affairs, Population Division (2020). "World Population Prospects 2020," Online Edition. Rev. 1, Medium Fertility Variant; Credit Suisse

Biopharma industry on innovation track
US Food and Drug Administration; new drug approvals (in numbers)



Source FDA, Nature, Credit Suisse

Regardless of indication, therapeutic area or nature of intervention (drugs, disease or other forms of therapy), we believe that the focus on value-creating innovation is critical, as it alone ensures negotiating leverage for pharmaceutical, biotech and medtech companies in a world facing steepening healthcare costs. We thus focus on companies that have demonstrated strength in innovation historically, or that are involved in the technologies outlined above and/or are cost leaders in their respective geographies.

Care and facilities

Reimagining senior care

An aging population – in conjunction with the age-related conditions and diseases that go with it – calls for dedicated care options and settings, as well as facilities equipped to provide them. Today's senior cohorts often live a healthier and more active life than earlier generations, which enables them to live independently for longer, a lifestyle they seek to maintain as long as possible. The one-size-fits-all retirement home of the past will no longer satisfy the diverse demands of this cohort.

Builders and operators of dedicated senior housing concepts like Korian, which, with their integrated offering, span the full acuity spectrum from assisted living facilities and shared (senior) housing over home care to care-intensive nursing homes, will therefore play a critical role in satisfying the demand. Even as outside investors are increasingly discovering the investment gap in this space, we see the incumbents as well positioned due to their intimate knowledge of regional societal preferences, pathology-specific requirements (e.g. in dealing with patients suffering from dementia) and differences in reimbursement systems, which allow them to install care concepts and facilities tailored to match the local need.

Beyond the physical infrastructure, and not unlike the accelerated adoption of new technologies in many other fields amid the pandemic, the delivery of care also saw a highly accelerated digital acceleration that has recently sparked investor interest. Having become the epitome of telemedicine companies, Teladoc recorded 10.6 million physician visits in 2020, almost triple the prior year's number. With obvious benefits in terms of time, costs and convenience, we think that consumer behavior in this area will remain relatively sticky, and the current demand trends for telemedicine should remain relatively sustainable – even post-pandemic.

We think that this backdrop creates an interesting set of fundamental opportunities for providers of telemedicine. However, it also holds appeal for other companies. Managed care organizations, which play an important role in the healthcare system in guiding patients to the most effective care setting, should also benefit from telemedicine, whether it is delivered through a partnership with an established tele-health provider or through a setup of their own (provided the patient base and network are large enough).

And while telehealth consultations are limited in scope today, we note that further technological advances on the diagnostic side should relatively quickly open the spectrum toward more complex consultations.

Health and life insurance

Pandemic puts spotlight on insurance

As we know, seniors find themselves at the eye of the storm when it comes to the COVID-19 pandemic. Besides their vulnerability to a severe course of the disease, a note from the International Monetary Fund (IMF) suggests that the pandemic could force more people to retire early given poor labor market conditions, thereby lowering pension levels and increasing the risks of old-age poverty. On a system level, the IMF sees the pandemic hitting pension systems structurally: disability claims might increase, while funding could suffer from a contracting wage base and/or a temporary lowering of contribution rates. On the asset side, financial market volatility might weigh on pension funds' balance sheet positions. Finally, extensive state support measures likely put further pressure on public finances, affecting state-funded or state-guaranteed pension systems in the long term. These trends reinforce our view that there is a growing need for private sector pension solutions.

The pandemic's strain on private sector health insurance businesses has been rather limited until now. In developed economies, public health systems (ultimately the taxpayers) are poised to absorb the majority of COVID-19 related costs, with many local differences. However, we believe that the pandemic has increased the general health risk awareness. A study from the Swiss Re Institute confirms this view, citing increasing demand for online health coverage products in China. While an opportunity for established life & health insurance companies, it also requires them to scale up online capabilities while still making use of their sizable agent force. Overall, we see further scope for insurers to grow continuously in underpenetrated markets, especially from online distribution.

Senior consumer choices

From standstill to spending spree?

Despite the mentioned challenges with regard to the financing of future senior generations, we note that seniors today are a powerful consumer group with high spending power, reflecting the accumulation of wealth over the course of their life coupled with inheritances received around retirement age – another effect of increasing longevity. In recent years, we have written about seniors' consumer choices that included high expenditure on personal care and beauty products, pet food and supplies, or travel and experiences. It is clear that throughout the pandemic and particularly given the increased risk for older cohorts, consumption in the last category came to a near-standstill. While we think a sustained rebound will take time and is highly dependent on the further trajectory of the pandemic, we think it is one of the more interesting areas to watch at this point. Having had to stay put or limit travel to domestic destinations, there is evidence of significant pent-up demand for travel, tourism and experiences in senior groups, which should lead to strong travel volume growth once restrictions are lifted, first domestically, then internationally. Consultancy Oliver Wyman notes that as the pandemic progressed, a growing number of respondents to their Traveler Sentiment Survey said that they were going to travel more rather than less once the pandemic ends and travel restrictions are lifted. A further factor that will also contribute to a travel recovery is the high savings rate observed throughout the pandemic.

Beyond travel and in light of the growing senior population, particularly in Asia, we think it is important to understand the consumer preferences of this regional demographic group. While we – based on sources such as the Credit Suisse Emerging Consumer Survey and multinational corporations' presentations – acknowledge the sustained brand equity of developed markets' brands in emerging markets (EM), we are aware of the possibility of changes to consumer behavior, which could create downside risks to incumbents. Cognizant of the latter possibility, we are attentively watching for tipping points in distinct segments and select markets – such as a preference for local smartphone brands in China – which should set up EM brands for a long pathway of growth.

Millennials

Julie Saussier
Senior Equity Analyst,
Consumer Goods
Follow Julie on LinkedIn

We all lived like Millennials during the COVID-19 crisis, shopping, working and socializing online, and paying more attention to our health and the environment. As a result, digitalization trends accelerated sharply including in finance – a new focus area for this Supertrend. There was also a noticeable shift toward sustainability during the pandemic. Once again, the younger generations are global influencers in this area. They are thrusting biodiversity into the spotlight, pushing companies toward greater sustainability within their supply chains – a trend newly covered in our Green attitude subtheme.

Takeaways: Ones to watch

Companies that are in sync with the green attitude of Millennials in fields such as protecting biodiversity and the climate, healthy sustainable food, responsible consumption and production and clean energy.

Digital platforms around the world that are disrupting shopping, advertising, media and now the finance industry.

Companies that are in tune with Millennials' values of fun, health and leisure, and are geared toward emerging markets (both global and Chinese domestic brands).

Fun, health and leisure

“Made in China” gains cred among young consumers
The emerging market (EM) consumer growth story continues. The middle class is the dominant consumer goods market, accounting for one-third of the global economy, according to the Brookings Institution. By 2030, two-thirds of the global middle class population will live in Asia [12]. Over the past decade, international companies have targeted this market with significant success in China, which remains the main growth driver. Chinese consumers have embraced international brands with a compelling historic heritage and a reputation for quality. This trend continues with the younger generations, and we have seen strong developments in the cosmetics, luxury goods and sportswear markets and, more recently, in the spirits and beer markets and other categories of staple goods.

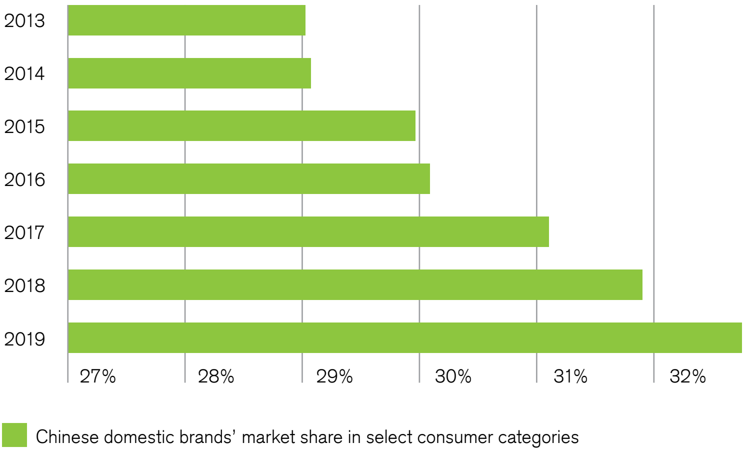
However, a new trend is emerging amid a wave of national pride among younger Chinese consumers, and a corresponding rise in demand for domestic brands. Unlike in the past, these brands have the solid infrastructure in place to develop rapidly, such as supply chain and digital capabilities and e-commerce and live-streaming platforms. Consumers no longer see these brands as inferior to foreign brands; on the contrary, they take pride in the “Made in China” label. These domestic brands are nimble, adapting to Chinese consumers’ preferences and needs. They often represent more value for money, although some are now developing ranges at a premium to foreign brands. As a result, Chinese brands have gained market share in many subsectors and have grown faster than foreign brands in recent years.

We capture this trend with our Fun, health and leisure subtheme, screening different subsectors within the consumer space to identify the brands with the most potential to be long-term winners. The sportswear market is particularly attractive, experiencing fast growth thanks to younger generations who are health-conscious. While foreign brands continue to dominate the market, Chinese companies are gaining in popularity. For instance, we have seen the launch of a premium brand, endorsed by a Chinese athlete. Chinese brands are also on the rise within the cosmetics market (more at the mass market end for now), fueled by innovation and products that address the preferences of the Chinese customer.

The spirits market is developing from a low base, driven by quality products from foreign brands, as well as premium Baijiu (a Chinese spirit). The premium end of the beer market is developing strongly for both foreign and Chinese brands. The restaurant market has seen the emergence of foreign quick service restaurant (QSR) chains, while the traditional hot pot market is trending up with younger generations. These hot pot chains are developing quickly in both top tier and lower tier cities, with some expanding into markets such as the USA, the UK or Singapore. Chinese gaming developers are also making successful inroads outside China, accounting for some of the top 20 games globally.

Chinese domestic brands gain market share

Color cosmetics, condiments, infant milk formula, skincare, snacks, soft drinks and sportswear etc.



Source Euromonitor, Credit Suisse

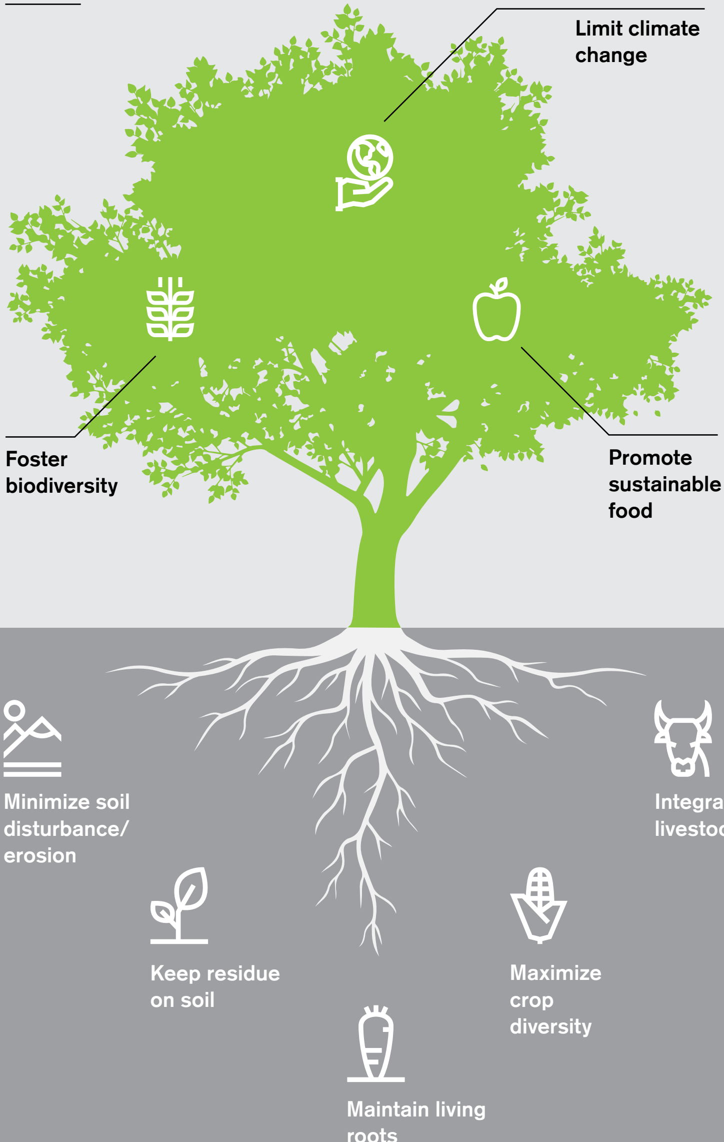
Green attitude

Protecting biodiversity
We are changing the name of our Sustainable business and investments subtheme to Green attitude, as we focus on what inspires younger generations when they think about sustainability. During the COVID-19 crisis, the sustainability of food systems was thrust into the spotlight as countries placed restrictions on the movement of goods and people to try to contain the spread of the virus [13]. Furthermore, the world learned first-hand how the loss of biodiversity can create the conditions for the transmission of zoonotic viruses to humans. Biodiversity and regenerative agriculture are the new buzzwords to address sustainable food.

In terms of biodiversity, the current rate of global species extinctions is tens to hundreds of times higher than the average over the last ten million years, according to a 2019 report from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Some one million animal and plant species are threatened with extinction, according to IPBES, which identified changes in land and sea use as the biggest contributor in terms of change in nature, followed by direct exploitation of organisms, climate change, pollution and invasive alien species.

Biodiversity is closely intertwined with climate change, as the loss of the former further aggravates the latter. For example, many of the forest fires in the Amazon in 2019 were set by humans to clear land, releasing – rather than storing – carbon dioxide into the atmosphere [14]. On the flip side, the protection of biodiversity can help with climate-change mitigation and adaptation [15]. As the cost of losing biodiversity becomes more visible, it is leading to heightened awareness that is affecting consumer spending choices and investing preferences [16]. However, government action will also be required to tackle this important issue. The European Union's Biodiversity Strategy for 2030 has been adopted by the European Commission and is part of the EU Green Deal, laying out a long-term plan for protecting nature and reversing the degradation of ecosystems. In the USA, the new Biden administration is also expected to focus more on protecting biodiversity.

Core principles of regenerative agriculture



Source Credit Suisse

Consumer companies are already tackling the issue, even if this is a complex task. They aim to manage their supply chains more sustainably through: improved traceability; the elimination of deforestation, for example for palm oil or cocoa production; and the implementation of standards and certifications. Regenerative agriculture and farming are also part of the solution, as companies seek to have a positive impact on biodiversity. Regenerative farming aims to improve soil health and, in turn, increase crop diversity. Agroforestry aims to restore trees and crops in already deforested areas. Precision agriculture, which optimizes the use of fertilizers and pesticides, along with vertical farming to reduce land usage are also part of the solution. Appropriate compensation for farmers during the transition is a key driver for a more sustainable supply chain.

Digital natives

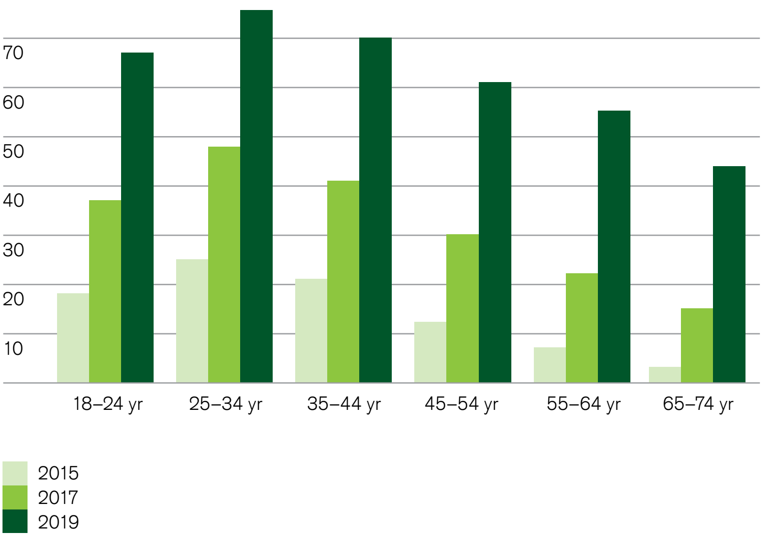
Ready to disrupt banking

Younger generations have a lot of trust in online services — even when it comes to their money. They are moving away from traditional banking, often foregoing bank accounts and credit cards in favor of mobile wallets. Driven by a desire for ease of use and speed, they would rather use their smart watch or online services to make payments, often provided by large internet or payments platforms. One particular feature this demographic likes is the “buy now, pay later” feature provided by many Fintechs, which do not charge interest to consumers but instead take fees from the merchants. They do not shy away from using robo-advisors and (social) trading platforms, where service fees are cut to the bare minimum. During the COVID-19 lockdowns, their trading activity through trading platforms surged. Another aspect that sets the younger generation apart is their focus on ESG factors when it comes to investing. In summary, after disrupting shopping, advertising and media businesses, we believe they could also disrupt the finance industry. In response, financial companies will need to reassess their value proposition and services in order to retain younger clients.

For younger generations, a bank should be an organizational app, delivering the services they need at their fingertips, such as currency exchange, trading tools and peer-to-peer lending. Using the latest technologies including artificial intelligence, tomorrow’s banks should make their customers' lives easier by customizing their services, following in the footsteps of high-profile internet platforms. While we have seen big tech companies develop payment services in recent years, they remain hesitant to enter the highly regulated banking industry in the USA and therefore continue to collaborate with credit card firms and banks in that market. Nevertheless, they could one day use their payment capabilities as a door to build a Banking-as-a-Service (BaaS) platform. Some are already enabling customers to monitor spending and balances across bank accounts, or starting to offer some banking services in cooperation with traditional banks. Chinese tech companies have pushed further into banking, using their core e-commerce business to move into payments, consumer lending, insurance, wealth management and credit scoring. In doing so, they are thriving as they deliver simpler, digital interactions with their customers. While trust in tech platforms is high and consumers are open to banking with tech companies, the market remains fluid at the moment, leaving an opportunity for traditional banks to position themselves.

Use of Fintech by age group of users

In %



Source OECD, Credit Suisse

Climate change

Daniel Rupli
Head of Single Security Research
Follow Daniel on LinkedIn

The world needs to decarbonize economic activity substantially to achieve the greenhouse gas (GHG) reductions set out in the 2015 Paris Agreement. In the year since we introduced this Supertrend, global leaders have taken a number of measures to achieve their ambitious targets. Additionally, the COVID-19 pandemic has led to unprecedented financial stimulus to support economic growth, and many global infrastructure projects are tied to sustainability. The European Union revealed more details about its Green Deal in 2020, while China is now targeting net-zero carbon emissions by 2060. And at the beginning of 2021, the USA re-entered the Paris Agreement.

Takeaways: Ones to watch

Firms leading in renewables (wind, solar, water, etc.) and other CO_2-free power generation and electricity-storage technology providers.

Energy companies that can square the circle by cutting GHG emissions while maintaining dividend yields. Carbon-capture technology companies and firms involved in blue and green hydrogen capacity enhancements.

Transport companies with a strong commitment to CO_2 reduction. Car manufacturers offering solutions to reduce the environmental footprint, such as electric vehicles, sustainable fuels, hydrogen or other technologies.

Companies providing technologies to improve sustainable food production (i.e. precision agriculture, vertical farming technology, gene editing, controlled environment-agriculture technology). Low GHG emission meat processors and plant-based food product providers.

Carbon-free electricity

Green is the new gold
Demand for electricity generation should grow steadily by around 2% every year, according to the International Energy Agency (IEA). At the same time, the industry is shifting from traditional power generation toward renewable energy sources, and the share of solar and wind production will likely reach around 40% of total production in less than two decades. Recent developments in the USA, China and the European Union (EU) have not only confirmed the shift and expansion into renewable capacity but could even accelerate demand for clean electricity. As such, demand beyond 2030 could grow solidly above the projected 2%, thanks to hydrogen, heating and commercial applications, which go beyond the electrification of mobility.

Solar photovoltaic (PV) is set to massively expand, according to the IEA's Renewables 2020 outlook. In the next ten years, solar PV should grow by 13% annually, according to the study. In 2023, solar PV electricity capacity is expected to have outgrown natural gas, followed by coal in the following year. Policy support combined with record low interest rates are encouraging investment, while production costs are expected to further decline. The main driver, in our view, for a sound uptick in solar are supportive policies and governments, such as the USA, EU, China and India.

Wind power generation has increased, and both offshore and onshore projects will further boost global generation capacities. Wind power expansion of around 65 gigawatts (GW) is expected over the next five years under the IEA's so-called base case scenario, with up to 100 GW every year under the IEA's good-weather assumption. As is the case with other climate change-related topics, China also plays an important role here, in particular with regard to onshore capacities.

Oil and gas majors continue their transition strategy, in particular across Europe, with many companies announcing more aggressive CO_2 emission reductions and even the new "holy grail" net-zero targets. Indeed, prices for renewable energy assets have significantly increased as the energy transition leaders from the oil and gas sectors, which need to achieve their ambitious carbon reduction targets, have also joined the bidding processes, in particular for offshore wind auctions. While this has triggered a debate whether the prices for renewable assets have already reached bubble territory for certain renewable asset classes, it should also be seen as an accelerator for renewable capacity investments, in our view.

While the expansion in production capacities is a widely discussed topic, little has been said thus far on networks. The energy transition bears substantial opportunities for investors over the long term, in our view, as power networks become more complex due to decentralization, increased grid volatility and changing customer demand. As such, electric utilities have increased their capital expenditures (capex) in both power generation and networks. Based on the latest IEA data, we expect that annual investments in electricity networks should increase threefold to over USD 800 bn over the next twenty years.

Extreme weather conditions will stay with us and the frozen wind turbines in the south of the USA during this past winter, as well as the wild fires and electricity management issues in California in 2020 showed that grid stability combined with renewable energy is essential. During this transition time, fossil fuels will remain an integral part of electricity generation, in our view, but their carbon footprint will likely be reduced through carbon capture technologies, among others.

Alongside electricity generation, green and blue hydrogen market dynamics should act as a big growth engine considering the current governmental support and net-zero strategies. Electric utilities across the world have announced several projects in recent months to increase their exposure and claim a share of the hydrogen production market.

Finally, electricity storage remains a big topic. However, annual installations of energy storage technologies fell YoY in 2019 for the first time in almost a decade, according to a 2020 report from the IEA. This was due to uncertainty in the key Korean market, as well as "sluggish activity" in Europe and the USA, which, in the view of the IEA, underscores the fragility of growth in these technologies, which are heavily dependent upon policy intervention.

Indeed, scale remains an issue at just over 3.0 GW in annual energy storage deployment in 2019. The biggest challenge is that storage is considered a generation asset and system operators (for transmission as well as distribution) are not allowed to own storage devices in many markets, which therefore acts a barrier to transmission and distribution deferral – among the highest-value applications for storage.

Oil and gas transition pioneers

Just capture it

In the short term, we see the largest potential in capex investments in renewables such as wind and solar power generation projects which are already in the planning stage, allowing for a quick win in the energy transition. In the longer term, however, new technologies with a multi-decade focus such as hydrogen and carbon capture technologies, carbon utilization and carbon storage will pave the way to achieve reductions in emission targets.

While costs for the industry remain at a very high level, we believe that governmental support will grow. According to an IEA report on carbon capture, utilization and storage (CCUS), interest in this area is poised to take off. In 2020, governments and companies committed more than USD 4 billion for CCUS investments, with more likely to come, according to the IEA. Additionally, almost USD 30 bn worth of projects are close to a final investment decision, underpinning what could be the next big thing in the energy transition saga.

Besides electricity producers and the oil refiners, the materials industry is the number one user of oil and gas (in addition to coal), and therefore has a weak ecological footprint. The chemical industry alone is responsible for around 15% of global oil demand and almost 10% of global gas demand. Within the industry's production processes, GHG emissions are inevitable, and many experts see CCUS as the only technology capable of achieving deep emission reductions from cement production, for example. Under the IEA's Sustainable Development Scenario, which targets net-zero emissions by 2070, the low hanging fruit in the CO_2 emission reduction will stem from existing assets in the next ten years. CCUS and electrolysis are the two main producers of "clean" hydrogen and thus form an important pillar in the transition strategy over the coming years.

CCUS plants in operation, construction and development
Number of facilities

Source IEA, Global CCS Institute (2020), Credit Suisse

After capturing CO_2, there is a need for transport and storage infrastructure, which requires the construction of CCUS hubs. At the moment, at least 12 CCUS hubs are planned spanning the globe, including Europe, Australia and the USA. The latter is currently seen as the most advanced, and US President Joe Biden has promised to accelerate the development and deployment of carbon capture sequestration technology as part of his plan for a clean energy revolution. However, we also see China as a potential candidate in the years to come as it is among the world's CO_2 emissions heavy-weights.

Sustainable transport

China is charging up

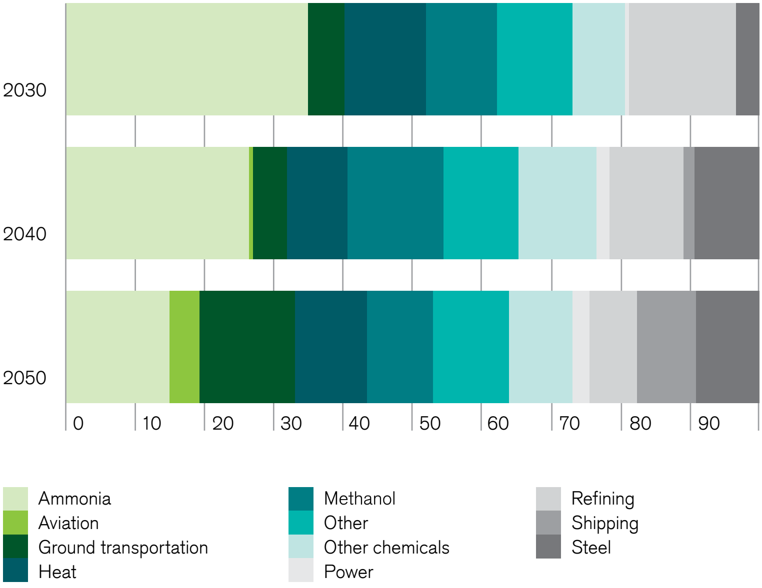
The much-anticipated inflection in electric vehicles (EVs) in terms of volumes finally occurred in 2020, with global EV unit sales up 33% YoY, solidly outpacing global light vehicle sales of –16% YoY. Meteoric share price increases for some pure play EV manufacturers recently led to company valuations of new players far outgrowing original equipment manufacturers. This has had a positive effect on other EV companies, with some seeking to go public through a Special Purpose Acquisition Company (SPAC). In our view, the euphoria around pure play EV manufacturers is not without substance: we estimate global EV penetration in annual car sales will rise from around 4% in 2020 to 27% in 2030. However, the market made a distinction in 2020 between the "haves" (carmakers with EV exposure and no legacy costs) from the "have-nots" (the rest of the sector). For example, while an early mover like Tesla enjoys both a strong moat (competitive) and cost-of-capital advantage, we believe that various existing car manufacturers worldwide are in an excellent position to participate in the race for EV market share.

Europe has been a leader in the energy transition, and the latest announcements have only further accelerated this existing trend, putting the region's traditional car manufacturers in a prime position to lead the transition to EV. That said, the Chinese car manufacturing industry has enjoyed substantial governmental support in order to create a level playing field for Chinese companies as they historically lagged in traditional combustion engine manufacturing.

This has led to an extraordinary compound annual growth rate (CAGR) of 80% in the past decade in the sector, and we see further momentum thanks to China's recently announced net-zero emission strategy by 2060. Last but not least, the USA, which is known for its traditional car manufacturing capabilities, should also see a boost for EVs as President Biden focuses on climate change and CO_2 reduction.

When looking at carmakers, one must not forget the various industries that participate in the EV boom through supply chains that differ from traditional cars. These include raw materials producers for batteries, battery makers and suppliers, as well as technology companies.

Global hydrogen demand by existing end use, 2030–2050
% of total H2 demand



Source Wood Mackenzie, Credit Suisse

In the short run, we expect that the EV boom will clearly dominate the individual transportation sector. In the long term (more than a decade out), however, hydrogen will likely become another alternative to address CO_2 emission reduction targets worldwide. Moreover, hydrogen fuel is more efficient than charging a battery, which should usher in opportunities in heavy-duty transport. We believe this fuel is most likely to be used in public transport, the railroad industry, heavy transportation and regular private cars. In particular, there is a large potential to improve private and commercial vehicles' environmental footprint through hydrogen technology, including gaseous or liquid hydrogen to power fuel cells. While short-distance commutes in greater city areas are the territory of electric vehicles, long-haul transportation is seen as a more applicable and cost-competitive area for hydrogen. Fuel cell EVs are expected to capture a low-single-digit percentage of the overall EV market by the end of this decade, but their share of the market could materially increase thereafter thanks to efficiency gains and the expansion of blue and green hydrogen production. We see China as the clear leader in hydrogen fuel cars, and as the growth engine in the decades to come based on its net-zero emission strategy.

Agriculture and food

Do not waste the taste

According to the Intergovernmental Panel on Climate Change (IPCC), the global food system is responsible for 25%–30% of global GHG emissions through a combination of land usage and livestock feed. Going forward, demand for food will only increase, as the global population is expected to reach 9.8 billion in 2050 and 11.2 billion in 2100, according to the UN. As such, the agricultural industry needs to become more efficient through technological innovation, such as smart farming, vertical farming or precision farming. Furthermore, we see opportunities in the area of fertilizer companies that can improve their CO_2 footprint in terms of production and further develop their crops and seeds to better adapt to climate change. For example, gene-editing technologies can help increase the size of plants and make them more resistant to disease and drought.

But sustainable food production goes beyond technology and starts with the end consumer. A shift in diet toward fewer or other animal products can substantially improve the ecological footprint. Food waste is another topic that should not be underestimated from a climate change perspective. The UN's Food and Agriculture Organization (FAO) has estimated that one-third of global food ends up as waste. There are many reasons why food is squandered, such as inefficient supply chains and a lack of infrastructure in developing countries, and consumer habits and preferences in developed countries. According to the FAO, food loss and waste amounts to 4.4 gigatons, or 8% of all GHG emissions. If food waste were a nation, it would be the third-largest emitter of GHG after China and the USA, the FAO says. One place to start in tackling this issue is with food retailers, which are only directly responsible for 2% of food waste but drive much of the waste in their supply chain through their concentrated market power and trading practices. They have a wide range of options to reduce food waste.

Waste management firms also have a role to play, as they can use food waste as resources for other commercial purposes. This allows them to recycle the resources and energy stemming from inputs for growing food in the first place, and their actions ensure that food waste does not decompose and emit GHG at landfills.

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Anxious societies

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Editor-in-chief
Nannette Hechler-Fayd'herbe

Authors
Daniel Rupli
Reto Hess
Jens Zimmermann
Uwe Neumann
Lorenzo Biasio
Julie Saussier

Editorial support
Catherine McLean Trachsler
Christa Jenni
Christine Mumenthaler
Flurina Krähenbühl
Katharina Schlatter

Product management
Camilla Damm Leuzinger
Claudia Biri
Serhat Günes

Contributors
Samuel Traub
Nandeep Karande
Sushanto Mukherjee
Rizwan Siddiqui
Audrey Forsell
Madhu Appissa
Dhaval Sangoi

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