Capgemini

FUTURE-PROOFING INNOVATION ROUNDTABLE SERIES:

CROSS-INDUSTRY INSIGHTS

INTRODUCTION

Future-proofing Innovation is a series of roundtable conversations about sustainability in innovation. Over the last year, five sessions have taken place, each one addressing a different sector. During these sessions, Capgemini sustainability and business experts met clients, partners, academics, and influencers to discuss current trends, the factors influencing those trends, and the general direction of travel.

In this composite paper, we draw together the main elements of those discussions. Which themes were common to all of them? Which topics or circumstances were specific to individual sectors? What main points can be taken away?

GLOBAL THEMES

When addressing sustainability and innovation across various industries, several recurring themes emerge, each with its unique perspective.

THE APPEAL OF SUSTAINABILITY

There was consensus across our roundtable events that the pursuit of sustainability goals wasn't just a societal obligation, but something that also made sense in terms of its appeal to people inside and outside organizations.

"I firmly believe there is no conflict between sustainability and economy. On the contrary, one is fueling the other."

Dr Juergen Sturm
Chief Information Officer, ZF Group
(automotive roundtable)

Future-proofing Innovation in figures

The Capgemini Research Institute (CRI) identified a set of frontrunners who have progressed further in their sustainability transformation than the rest of the companies it surveyed.

One in ten organizations (11%) in the CRI survey is categorized as a sustainability frontrunner.

From 2020 to 2021, frontrunners realized:

- 83% higher revenue per employee compared to the average
- 9% higher net profit margin compared to the average

Automotive

Mathias Kaldenhoff, Partner Sustainability and Innovation Management, Office of the Chief Technology Officer, SAP Germany, said "sustainability isn't just a customer-facing commitment, nor even the result of a broader commitment to societal responsibility. It's also a key factor in the ability to attract and retain employees." Justin Gemeri, CEO at ekipa, said this was true for younger people especially, both as employees and as customers.

"What unites young people in the digital generation," he said, "is that they take sustainability seriously, and they don't accept greenwashing. They expect action and when they graduate and look for work, that's where their focus is. The sustainability of a company will be a key to its economic success. Younger customers who will become the core target group in the next few years will not buy products from companies that do not act sustainably."

Finance

Dr. Tobi Petrocelli, Director of Environmental and Sustainability Management at MUFG Americas, said that at MUFG they have set up a sustainability office, with a training program for all managers and all the business's stakeholder relationships to develop an understanding, not just of climate risk, but how it impacts the bottom line. The aim is to ensure the entire loan lifecycle becomes more embedded with environmental, social and governance (ESG) principles. "It's all helped," she said, "to enhance awareness and buy-in, and to bring home to everyone that climate net zero activity represents a significant opportunity."

Mobility

Arnaud Coiffard, Head of Strategy, Innovation, and New Markets at SNCF Connect & Tech, said that facilitating technology would be a critical success factor because keeping passengers informed and making their journeys easier would encourage them to make greener travel choices.

Future-proofing Innovation in figures

- 49% of executives say their company has defined a priority list of sustainability initiatives to be implemented in the next three years
- 37% of executives say their organization is redesigning its business/operating model to be more sustainable

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CIRCULARITY

Participants in most of the roundtable sessions talked about the importance of engaging every part of an organization and its ecosystem in sustainability efforts.

Future-proofing Innovation in figures

37% of executives say their organization is redesigning its business/operating model to be more sustainable

Automotive

Ralf Blessmann, Executive Vice President, Automotive Market Unit Lead, and Sustainability Sponsor at Capgemini Deutschland, discussed the need for automotive enterprises to bring together as many elements of their organization as possible – technology, processes, and more – to support their drivers and help them get into a more efficient, sustainable mode. He said that "when people feel supported and feel that they are now making a great environmental contribution, a virtuous circle can be created."

CPRD

In the session discussing consumer products, retail, and distribution (CPRD), Fanny Weinbreck, Global R&D Director at Royal Agrifirm Group, mentioned what she termed circularity at scale. Waste from the food industry, for example, can be repurposed as animal feed or as fertilizer. "We can be much, much sharper in how we make use of the resources we have," she said. Chris Webster, Senior Vice President, IT Strategy and Architecture at Ahold Delhaize, agreed. "It requires a holistic approach," he said, "it's about everything. The upstream supply chain; ethical sourcing; ethical labor; and more. Including demographic information relating to at-risk communities."

Future-proofing Innovation in figures

The majority of frontrunners (73%) from the CRI research are using analytics to optimize logistics to reduce emissions*

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High-tech

Sandy Pentland, Professor at MIT and Stanford, and Mary de Wysocki, Vice President, Corporate Affairs and CSR Sustainability at Cisco, agreed that GDP as it was originally conceived didn't factor in issues such as environmental metrics or human well-being or community and that this needed to change. Sandy said we needed to imagine "a world that counts. A world where people don't do things that have negative impacts without having them counted and available to look at.

"Data, big data, and these new emerging technologies such as AI and quantum computing are really exciting for me. They will help us to understand complete lifecycles."

Mary de Wysocki
Vice President, Corporate Affairs and CSR Sustainability, Cisco

Mobility

Mickael Vilaca, Vice President of Smart Mobility at Capgemini, said that sustainability would depend on joined-up thinking that addressed public and private transport alike.

Arnaud Coiffard, Head of Strategy, Innovation, and New Markets at SNCF Connect & Tech, agreed. He said, "We need to think of transport as a linked system that brings together infrastructures, services, digital infrastructures, physical infrastructures, and good practices. If we divide all that up, we end up with small measures that are useless."

Florent Andrillon, Vice President and Climate Tech Global Lead at Capgemini, suggested autonomous vehicles as an example. The convenience they may provide is one thing, he said, but their implications for sustainability are another. If cars could drive themselves, they could be sent onto the roads empty, perhaps to fetch passengers – and wouldn't that work

against the very principles that schemes such as carpooling had been set up to support? As a result, public authorities would need to regulate their use. "If they are designed in an intelligent way and joined to an intelligent infrastructure," he said, "we could have a very interesting future for public transport."

THE NEED FOR COLLECTIVE ACTION

Our panelists felt that effort in sustainability needed to be shared. Not just across enterprises and their supply chain ecosystems, but across entire industries and economies

"Achieving sustainability goals is a team sport."

Daniel Garschagen

Applied Innovation Exchange, Sustainability, and Innovation Lead, Capgemini Deutschland

Automotive

Juergen Sturm, Chief Information Officer at ZF Group, said "No company can achieve this alone. We have to involve the large companies, the manufacturing companies, software companies, academia, start-ups, systems integrators – everyone. I think that's exciting because science and technology is the answer. And we must really leverage it."

Justin Gemeri, CEO at ekipa, agreed. "It's about co-creation," he said. "Start-ups bring huge potential, bring great new ideas, new perspectives, new technologies, but you also need the experience of established organizations, you need the leverage that big companies bring regarding access to customers, and also regarding R&D budgets, for example. Together, organizations large and small need to create an ecosystem, a framework, where they can co-create on one level – and that's where innovation is happening right now."

"Sustainability must be completely interwoven into the DNA of any company, because consumer behaviors and perspectives are changing."

Dr Juergen Sturm

Chief Information Officer, ZF Group (automotive roundtable)

CPRD

Kees Jacobs, Vice President, Global Consumer Products and Retail, Capgemini, said, "As individual companies, we can only do so much, but when we combine forces, and we accelerate and innovate together, the impact will be much bigger." Fanny Weinbreck, Global R&D Director at Royal Agrifirm Group, agreed and added that the need for this interconnectedness should be made visible to end-users. She said that farmers are willing to adopt innovative solutions, but they can't be expected to carry the costs. Consumers need to be brought closer to the other end of the value chain. They need to see that sustainability of supply is something in which everyone has a stake: farmers, farm workers, wholesalers, retailers, customers – everyone. They need to see that sustainability of supply is something in which everyone has a stake: farmers, farm workers, wholesalers, retailers, customers – everyone.

Mobility

Sharing data was key, said Anne-Claude Poinso, Business Development Manager for Mobility and Public Transport at Microsoft. It would break down the silos that currently exist between transport systems such as car sharing, bicycle services, parking, and public transport.

"The notion of the common good is not opposed to the opportunity to create new business models: there is a complementarity."

Florent Andrillon

Vice President and Climate Tech Global Lead, Capgemini

THE ROLE OF TECHNOLOGY IN SUSTAINABILITY

Future-proofing innovation in sustainability at enterprise levels is a considerable challenge, and participants across our roundtable sessions agreed that in different ways in different sectors, technology was a crucial element.

Automotive

Markus Winkler, Executive Vice President, Global Automotive Team at Capgemini, pointed out that manufacturers could put a part that has a lower sustainability footprint into a vehicle, but later find it will consume a lot of energy to recycle this part. "You might also find," he said, "that the recycling quota for the part is lower. It's in areas like this that organizations need to arbitrate – and that's where technology has such an important role to play, because how else can businesses keep track of all the variables?"

Participants in the automotive event agreed that IT brings significant opportunities to achieve sustainability. Examples include better supply chains, more efficient production, and the reduction of the need to travel. Importantly, technology also enables organizations to measure their sustainability status because if you don't measure, you can't improve.

CPRD

What's key, said Jackie Pynadath, Director, Sustainability and Innovation at Google Cloud EMEA, is the ability to access and aggregate data at scale, because it's the foundation of traceability in the supply chain.

Technology can help address these challenges, said Ron Tolido, Executive Vice President, Chief Technology Officer, and Master Architect at Capgemini. For example, AI, intelligent automation, and the use of sensors at the edge can gather data, reduce complexity, and bring people together, so that processes, supply chains, and communities can be transformed.

Finance

Matthew Sekol, who is responsible for driving ESG, sustainability, and digital growth at Microsoft, said financial services organizations were telling him they do not need more data, but higher quality data. He said data informs every decision from product development, to where to invest, and where to lend, and how to insure. "It's really the biggest trend out there right now," he said.

He added that organizations were realizing they need to look beyond greenhouse gas (GHG) emissions to broader ESG metrics. To analyze this data, he said, they will need artificial intelligence. They're going to take advantage of tools like blockchain to build a secure data supply chain, all the way from raw source materials right through the corporation, where they're investing all the way up to either the ESG data aggregators or the capital markets firms.

Future-proofing Innovation in figures

- 60% of organizations are investing in AI and automation for sustainability

- 56% are investing in IoT to monitor or reduce energy consumption

- 55% use digital technologies to reduce travel and carbon footprints

FINANCING SUSTAINABILITY

Future-proofing innovation has financial implications, but several of our panelists felt it should be regarded as an investment at least as much as it also represented a cost.

Finance

Satish Weber, Executive Vice President, and Head of Sustainability Financial Services at Capgemini said the finance sector drives investment, resilience, risk prevention, and risk mitigation across society.

Dr. Tobi Petrocelli, Director of Environmental and Sustainability Management at MUFG Americas, observed that the US Inflation Reduction Act (IRA) was going to be an enormous growth opportunity. It was the largest climate bill that's ever been seen, she said, and with it comes a great deal of momentum from private capital. She said when private investors see there's an opportunity for a client to access tax credit subsidies, grants, and so forth, coupled with capital from organizations such as MUFG, the economics will make a lot more sense to them. "And when that happens," she added, "you'll see an uptick in the momentum around innovation."

For Sankar Krishnan, Executive Vice President, Head of Digital Assets and Fintech at Capgemini, the emphasis should be on waste reduction and increasing lending to small and medium-sized organizations. These businesses, he said, represent around 80% of the GDP of any country, and so doing something to increase their chances of success would make a major impact.

"We're at a really interesting inflection point now where the pressures from sustainability and ESG are giving digital transformation real budget and purpose."

Matthew Sekol
Global Sustainability Industry Advocate, Microsoft (finance roundtable)

Mobility

Florent Andrillon, Vice President and Climate Tech Global Lead at Capgemini, described a sustainability financing initiative. In response to a call for projects from the French government a few years earlier, Capgemini Invent worked with other organizations to create an innovative financing mechanism called energy-saving certificates, enabling citizens and local authorities to gather in one place all their accessibility to their different mobility services, not just to create a universal log, but also allowing employers to pay for their workforce's transport vouchers. It's a scheme, he said, from which everyone benefits, citizens, employers, and communities alike.

Claire Baritaud, Coordinator of the Transport Innovation Agency and Deputy Director of Multi-modality, Innovation, Digital and Territories, said that in France, the state could help with judicious regulation and standardization, and also with financing. Funding included contributions from France Relance, a €100 billion investment plan supported in part by the European Union, which aims to support businesses, rethink production models, transform infrastructure, and invest in training. It is being used to finance high-service-level buses and mixed transport exchange hubs in more than 100 transport networks.

SECTOR-SPECIFIC THEMES

While there are themes common to all industries when it comes to sustainability and innovation, some of them do remain market specific. It is important to bear those in mind as well, as the success of a sustainability strategy relies in its specificity:

Automotive

Markus Winkler, Executive Vice President, Global Automotive Team at Capgemini, pointed out that the issue of sustainability in the automotive industry was taking place against a backdrop of generalized rapid change in the sector, which was seeing many companies move from being manufacturers towards becoming automotive technology businesses. As vehicles are becoming more software-defined, he said, so the need for and nature of innovation in the industry is evolving.

Ralf Blessman, Executive Vice President, Automotive Market Unit Lead and Sustainability Sponsor at Capgemini Deutschland, took up this thought. He observed that innovation is used to improve both efficiency and technology, and that it is therefore innately sustainable in its purpose.

Markus Winkler also said that moves towards sustainability in the sector have accelerated since the emergence of the electric vehicle market. The impetus has grown to a level at which it's now a key factor from one end of an enterprise to the other – from production and operations, out to the supply chain, and beyond.

CPRD

Laurens Sloot, Founder and Director, EFMI Business School, and Professor by Special Appointment, Groningen University, said that when change is both inevitable and essential, organizations will be more likely to innovate and also to improve their business models. In

the CPRD space, he said, it's also incumbent on the industry to make track-and-trace systems affordable all the way to suppliers at the furthest reaches of the supply chain.

Lisa Verbeek, Senior Consultant, Sustainable Business and Technology, Supply Chain, and Retail at Capgemini, pointed out that for many consumers, sustainability isn't just an environmental issue. While the food system is responsible for one-third of global greenhouse gases, she said, there are also social concerns: people want to know that farmers are being paid a decent price, and that labor conditions are fair, too.

We've seen that there was broad consensus across our roundtable sessions that there is a need for concerted effort within organizations and their ecosystems, as well as across entire industries and economies. In the case specifically of the CPRD sector, Chris Webster, Senior Vice President, IT Strategy and Architecture, Ahold Delhaize, said that to navigate these issues, it would be useful to simplify the many, many sets of standards that are currently in circulation. "I think it should be made generic," he said. "It's defining a set of standards to which the whole industry could sign up."

"We need to define a set of standards to which the whole industry could sign up."

Chris Webster
Senior Vice President, IT Strategy and Architecture, Ahold Delhaize

Influencing consumer behavior is a greater issue in CPRD than in some other sectors, and our panel agreed that technology had a role to play in this respect. People can't be browbeaten into doing the right thing, but as Jackie Pynadath, Director, Sustainability and Innovation, Google

Cloud EMEA, said, "The more we can give sufficient information to help people make better-informed choices, that is honestly the best thing we can do."

"The more we can give sufficient information to help people make better-informed choices – that is honestly the best thing we can do."

Jackie Pynadath
Director, Sustainability and Innovation,
Google Cloud EMEA

Finance

It's no surprise that compliance is a bigger issue in finance than in other sectors. Dr. Tobi Petrocelli, Director of Environmental and Sustainability Management at MUFG Americas, said, "Regulation has been probably the biggest trigger or pressure point for us. Compliance is a critical aspect."

"Regulation is a big trigger point. Compliance is critical."

Dr. Tobi Petrocelli
Director of Environmental and Sustainability Management, MUFG Americas

Climate change has a direct bearing on insurance. Stacey Brown, President at InsurTech Hartford, said many of the models that insurance companies had been using for many years to predict loss aren't holding up, because they weren't originally designed to accommodate the concept of climate change. This meant, he said, that they were looking for sources of data on which to base new models, as well as for new ways to measure that data, to predict more accurately. Insurance businesses, he said, were exploring ways of working together towards a standardized approach to reporting on the industry, and to track progress on being green.

"Getting quality data is really the biggest trend out there right now."

Matthew Sekol
Global Sustainability Industry Advocate, Microsoft

Panelists on the finance roundtable felt that organizations needed to be more flexible in their approach to new ideas. Sankar Krishnan, Executive Vice President, Head of Digital Assets and Fintech at Capgemini, mentioned a trend toward a point where an organization's green credentials could materially and positively affect their credit scores, giving them better and greater access to funding than might otherwise be the case.

Participants in this session were asked to wrap up by suggesting one innovation in the sector that companies should invest in to achieve a greener future.

For Stacey Levine, Director at Capgemini Invent, the priority was to rewrite some of the risk models in insurance. It needs to be an aggregated collective view that would really shift the needle on the whole market. "I know," she said, "that pricing is going to probably not always be favorable, but maybe we have to accept collectively as a society that there's a change, and that it's coming."

For Dr. Tobi Petrocelli, the focus was on conservation activity. In terms of investment in tangible innovations, she mentioned carbon capture and storage, as well as battery storage. Those, she said, were going to be an absolute necessity if we were to reach any form of net zero.

For Stacey Brown, the aim needed to be to shift away from reacting to events with payouts, and towards a more preventative mindset. He pointed out that insurance has always enabled organizations to take risks they might not otherwise consider, and that if the entire way of thinking became more proactive, that could only be a good thing.

High-Tech

Panelists in the high-tech roundtable event felt that a difficulty in addressing sustainability is that the data hasn't been dependable. There are so many variables. For instance, minerals are mined, moved, and embedded in increasingly large sub-assemblies, and then moved again, until manufacturing is complete – so at what point or points in the manufacturing and logistics cycles do we measure carbon footprint?

In short, our participants agreed, we haven't yet seen a standard approach to carbon footprint reporting, or indeed to any sort of environmental, social and governance (ESG) reporting. However, pressure is growing to convene the high-tech industry around such a standard.

Sol Salinas, Capgemini's Global Executive Vice President, North America Sustainability Lead, and facilitator for this event, said what was needed was a measurable and reparative business model across all use cases, and across all industries. Digital transformation will be critical in successfully achieving this consensus and establishing the business model.

"Innovation needs to come with societal KPIs. We need to measure and be accountable for long-term environmental flourishing and human wellbeing. It's not going to be easy, but it's essential."

John C. Havens
Sustainability Practice Lead,
IEEE Standards Association

One element of this model, said James Robey, Capgemini's Global Head of Sustainability, could be the notion of a value-added carbon tax that is part of every data transaction. Another element, he added, could be a better way of conceptualizing carbon. Just as people

understand that big swings in the Dow Jones or FTSE indices are good or bad, so a carbon measure of this kind could make the topic more real and immediate, so it becomes a kind of touchpoint in everybody's lives.

The panel agreed that Web3 had a key role to play in sustainability efforts. Sandy Pentland, professor at MIT and Stanford, said Web3 allowed organizations to keep their data locally and control it better, and that this made it easier to quantify the carbon figures implicit in the movement of materials, sub-assemblies, and products. He pointed out that this local quantification would make it easier to calculate the value-added carbon tax suggested by James Robey.

Future-proofing Innovation in figures

59% of executives in the CRI survey* said blockchain and smart contract technology to manage complex supply chain challenges would be the most disruptive in supply chain in the next three years

Mobility

There are specific dynamics driving sustainability in the mobility sector. Laure Ménétrier, Managing Director of Ecov, said that in pursuing sustainable transport, the main impetus was collective willpower. Everyone, she said, would need to commit to being more prudent, whether that be by traveling less or by sharing transport more often.

"We need to think of transport as a linked system that brings together infrastructures, services, digital infrastructures, physical infrastructures, and good practices. If we divide all that up, we end up with small measures that are useless."

Arnaud Coiffard
Head of Strategy, Innovation, and New Markets, SNCF Connect & Tech

Similarly, the need for coordinated effort is distinctive in this market. Claire Baritaud, coordinator of the Transport Innovation Agency and Deputy Director of Multi-modality, Innovation, Digital, and Territories, said the French government was leading the way in this regard. Whereas in the past, the state engaged in the creation of physical transport infrastructure such as road, rail, and bridges, effort is now concentrated in the creation of digital infrastructure that could be accessed and shared by all transport providers. She said France goes further than other European countries by sharing all static and dynamic transport schedules across not just train, bus, and metro services, but across carpooling areas and electric vehicle (EV) charging points. "This data hub can then be used by route planners," she said – and it also enabled the development of mobility as a service (MaaS).
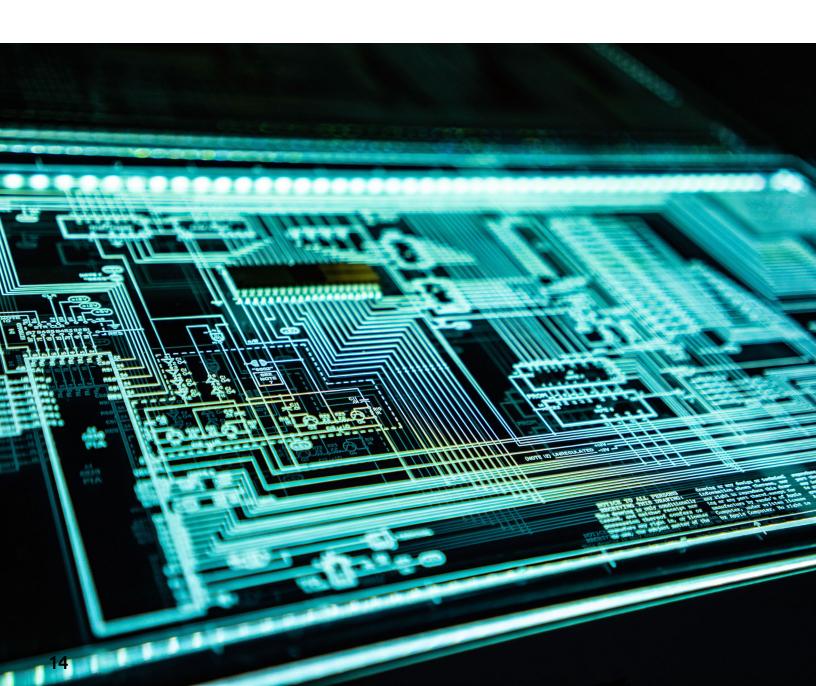
Claire Baritaud also described what are known as *climate tickets* in some parts of Europe. In Austria, Germany, and Spain, for example, these tickets enable passengers to move across transport systems.

Technology can address issues that are specific to individual sectors. For example, Laure Ménétrier, Managing Director of Ecov, discussed the ramifications of carpooling. The basic principle, she said, was of course to put more people in fewer cars. This is easier to do in city centers, but in more sparsely populated areas it's more of a challenge. This is where digital technology comes into its own, she said: it can pool information and create connections.

It's not just the enabling technology that's evolving. So too is transport itself, and here too the evolution is driven by sustainability. Florent Andrillon, Vice President and Climate Tech Global Lead at Capgemini, pointed out that new vehicles come with their own infrastructure needs, such as electric charging stations and hydrogen outlets, and that establishing these in sufficient numbers and in the right places is going to take some time and effort. It would also require data analysis.

Understanding behavior and logistical patterns would enable planners to determine how best to extend and enhance the deployment of infrastructure. This is as true for commercial transport as it is for private car usage.

Anne-Claude Poinso, Business Development Manager for Mobility and Public Transport at Microsoft, and Claire Baritaud agreed that, as we have seen, France had considerable strengths in the development of sustainable transport, and that it should do more to take an international lead in this area. To make it a cutting-edge sector, it was important to attract talent and invest in training.

FOOTNOTES

A world in balance: Why sustainability ambition is not translating to action, Capgemini Research Institute, 2022:

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GOING FURTHER

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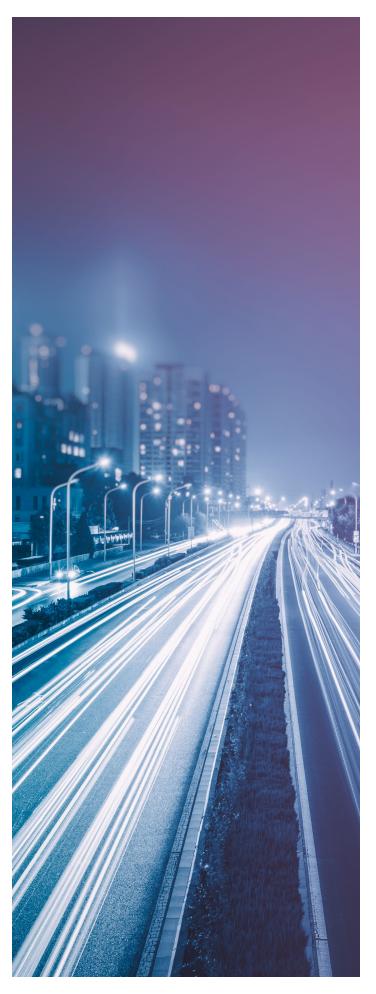https://www.capgemini.com/insights/research-library/sustainability-trends/

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