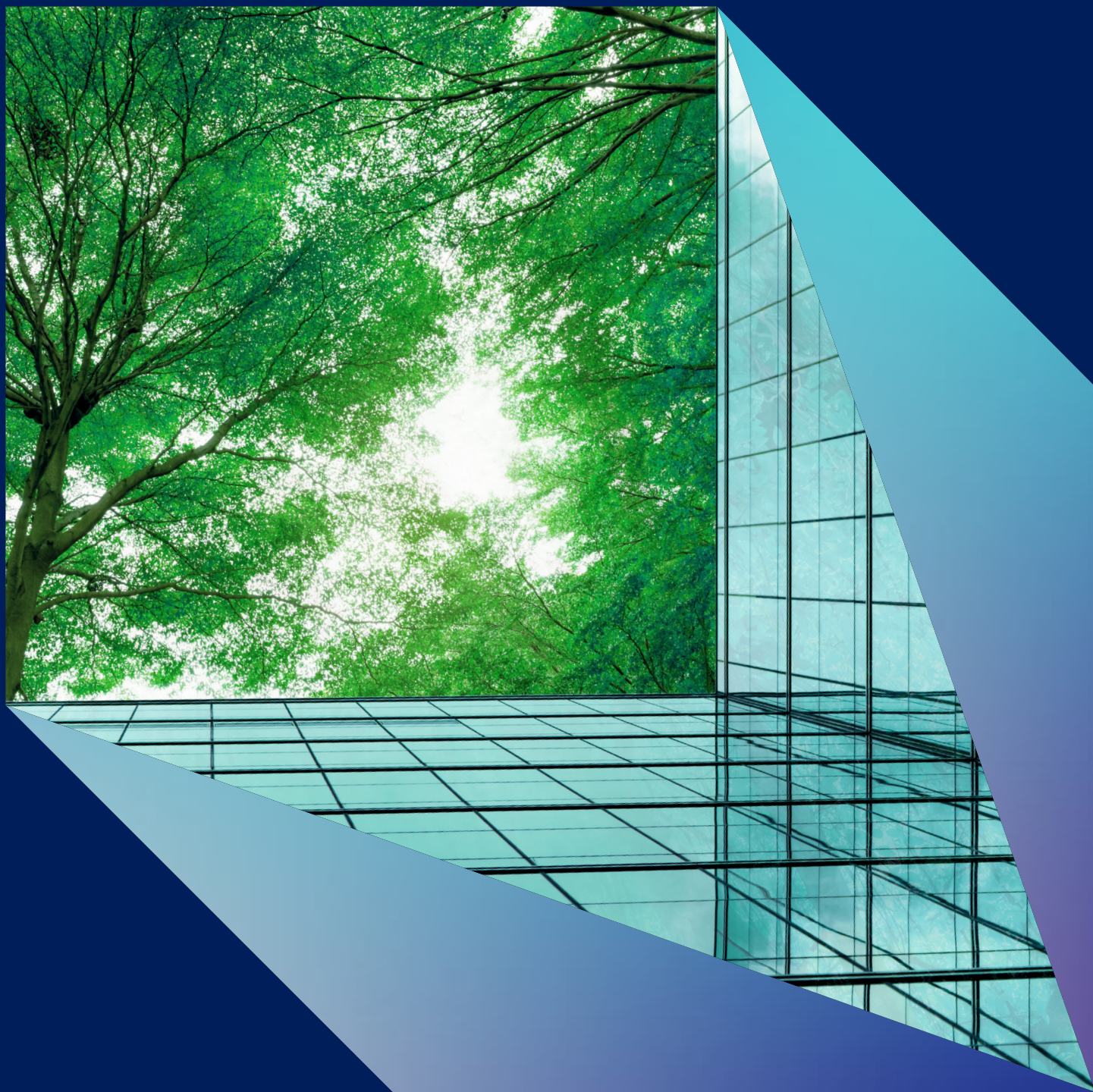


# How achieving sustainability through digital transformation benefits the bottom line

Sponsored by Cognizant and Microsoft





## Why digital transformation is vital to sustainability success

Corporate sustainability is more than a nice-to-have, optional initiative for companies in today's economy. To grow, thrive, and manage risk, companies must incorporate sustainability into their strategies, operations, and cultures. Investors, regulators, employees, and consumers all expect companies to radically reduce or even eliminate their negative impacts while finding ways to provide value and improve outcomes for people and the planet.

Digital technology is a key enabler in this journey, but it often is unclear how the twin transitions of digital and sustainability are linked. This e-book highlights six areas in which companies can utilize sustainability and digital technology to stay ahead of the competition, meet regulatory requirements, and grow their top and bottom lines.

The sustainability areas discussed here result from collaboration between Cognizant and Microsoft while supporting clients in their sustainability efforts. Both companies are laser-focused on this internally. Cognizant is working to power its entire global operations with renewable energy until 2026 and to achieve net-zero by 2030.

It is leveraging its expertise to fast-track its own journey and to offer a portfolio of [sustainability services](#) that can help clients digitally transform to meet their goals. Microsoft has been carbon neutral across the world since 2012 and is committed to being carbon negative by 2030. Cognizant is also building solutions on the [Microsoft Cloud for Sustainability](#).

The following pages cover the six areas that companies should focus on as they plan to undertake digital transformations and achieve their sustainability goals.

**“To help meet worldwide carbon goals, the companies that power the global economy must leverage the lessons they’ve learned during their digital transformations to ensure the success of their sustainability efforts.”**

**Sophia Mendelsohn,**  
Chief Sustainability Officer and  
Vice-President of ESG





# Net-zero pathways

Carbon management is rising from an isolated environmental and operational cost issue to a core business priority with increasing influence on brand reputation, investment, and revenue. While the production of carbon emissions formerly was an inconvenient by-product for many companies, it's now a commodity with a cost.

Escalating and volatile energy and carbon market costs represent a material impact on bottom-line and top-line performance. Real-time, accurate carbon emissions data increasingly is being integrated into the procurement and investment decision-making process. Underpinning these commercial issues, the regulatory environment is maturing with demands for transparency in voluntary and compliance reporting toward hard net-zero targets.

Operational carbon accounting in Scope 1 (greenhouse gas emissions directly produced by an organization) and Scope 2 (emissions associated with the purchase of electricity, steam, heat, or cooling) emissions is well understood. But interventions required to reduce Scope 3 emissions (emissions from an organization's indirect activities) and move toward ambitious long-term reduction targets are more diverse and complex. They span the full supply chain, engineering operations, energy supply, logistics, and business models.

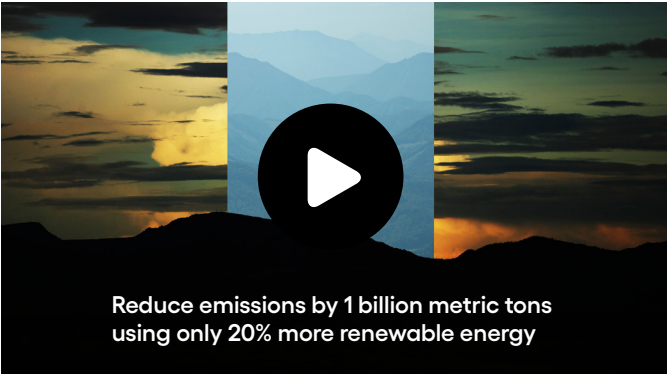
“ The next big step is enabling net-zero carbon data and insights unlocked by AI and automation.”

Dr. Rouzbeh Amini,  
Sustainability Offerings Lead

# Read more about how to get to net-zero

- Five ways to leverage green IT and get to net zero (forbes.com)

# Watch Cognizant’s Future of Us video to learn more about doing business in the net-zero era.



# Sustainability and ESG reporting

Efficiently and accurately reporting progress on sustainability goals and ESG (Environmental, Social, and Governance) KPIs requires an innovative approach to collecting data from multiple siloed systems across business units and multi-tiered supply chains. In many cases, no central repository of this data is available. Cognizant solutions and accelerators, built on Microsoft Cloud, such as 1Sustainability and 1Facility are designed to meet these needs. The outcome is 90-95 percent automation in data ingestion and seamless metrics reporting.

# Carbon accounting can kick-start digital ESG reporting

The transition to digital data management for ESG reporting often starts with reporting an operation's greenhouse gas emissions, usually limited to Scope 1 and Scope 2 emissions.

The next step is to expand reporting to the upstream and downstream supply chains and address Scope 3 emissions.

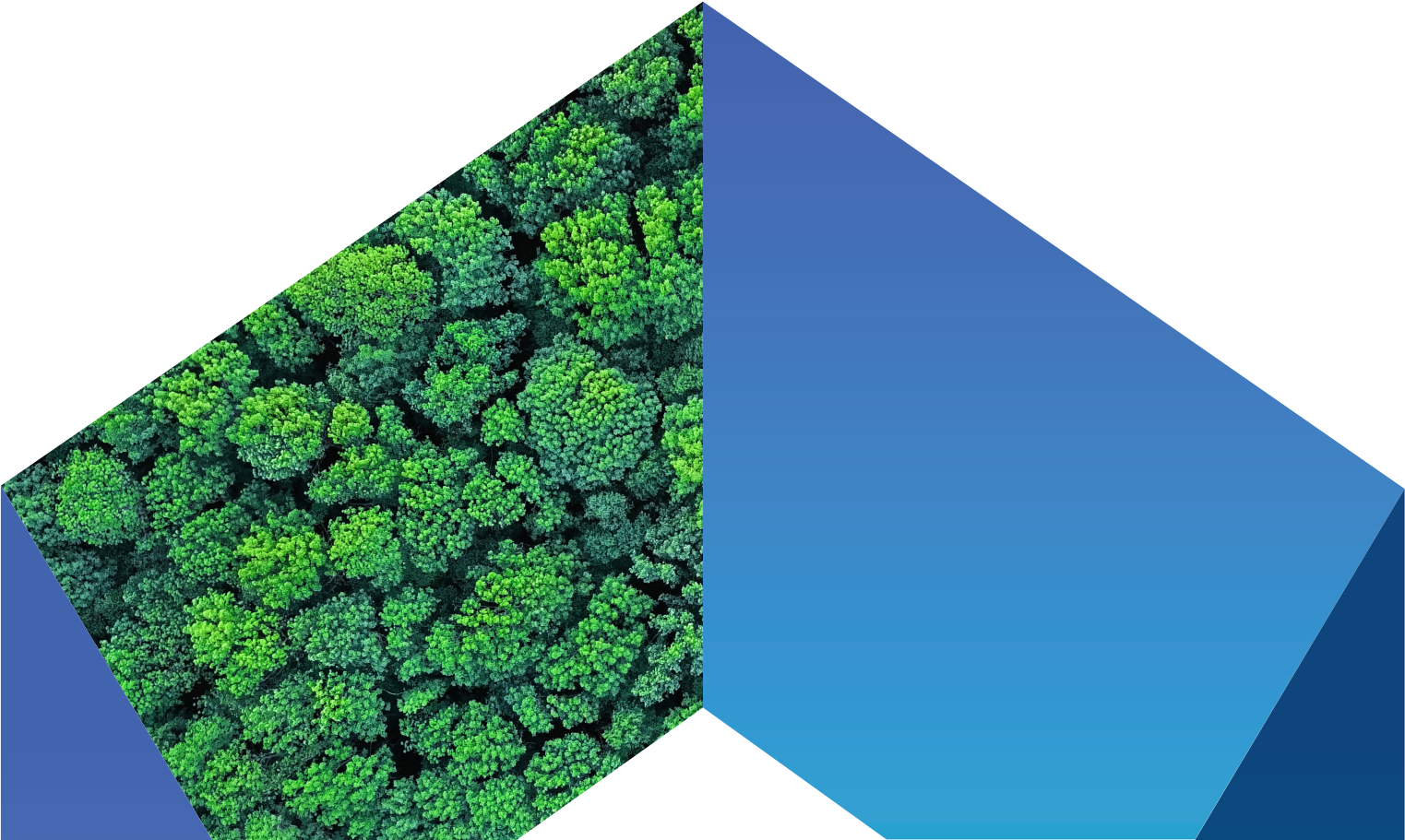
Developing a greenhouse gas inventory is an effective tool to map the use of energy and resources by a company's direct operations and supply chain. This allows for identifying areas of inefficient use of resources, and the inventory should be repeated regularly to track progress. From carbon accounting, ESG and sustainability scope of data can be added to the system, allowing for automated reporting and progress management.

# Aligning sustainability reporting with financial reporting

Companies are beginning to integrate sustainability commitments into their overall strategies, realizing that ESG and full sustainability data analysis provide a new lens with which to assess and improve business processes. Of critical importance, managing sustainability and financial data as one system allows for investor-grade data management and reporting.

“ Companies need to find ways to drive efficiency, reduce waste and product footprint, and improve supply chain management while complying with regulatory requirements.”

Jenny Edwards,  
Principal Sustainability Advisor





# ESG reporting case studies

Upstream supplier management and sustainability data collection are notoriously challenging. Scope 3 reporting is largely dependent on estimates and assumptions at present. Through an integrated, strategic approach, however, Cognizant can transform a company's system into an automated, intelligent monitoring framework that helps build positive supplier, customer, and consumer relationships.

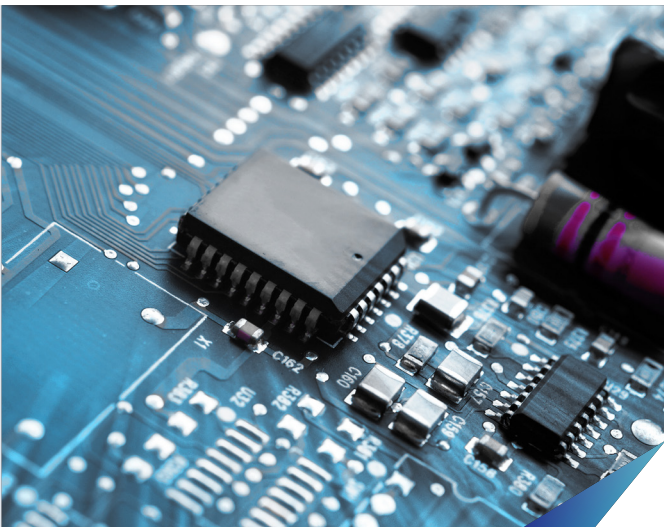
## Additional ESG reporting information resources

- Watch Cognizant's Sustainability Transformation Beyond ESG Reporting Webinar
- Read Cognizant's 2021 ESG Report

Cognizant is assisting a consumer goods company as it digitally transforms and automates its ESG reporting. A Scope 3 strategy is being developed to ensure efficient progress reporting. This project will use digital data and analytics solutions developed by data scientists, engineers, and data visualization experts.



Cognizant also has helped a large international pharmaceutical company to identify the most suitable digital solution for Scope 3 data management, managing the collection of data from the customer's 36,000 suppliers.



# Green products and the circular economy

Global demand for materials has tripled since 1970 and is projected to double again in the next 40 years<sup>1</sup>. Additionally, annual waste is projected to increase by 70 percent by 2050<sup>2</sup>. Shifting toward a circular economy can help by reducing natural resource extraction; maximizing the value of products, components, and materials; and minimizing waste, emissions, and pollution.

Policymakers are proposing notable regulations to enable this shift. The European Commission's [Circular Economy Action Plan](#) aims to make sustainable products the norm. [This goes beyond just carbon](#) and concerns a whole spectrum of environmental impacts. Here are two key aspects of how digital technology can help companies lead in this new era:

**Making green products at scale:** Most large companies do not know the environmental footprint of each product they sell. Existing methods of measuring this are time intensive and lack actionable insights because they are based on proxy data, estimates, and industry averages. This is linked to general Scope 3 data challenges. Automating the collection of products' environmental footprint data can slowly replace proxy data with actual data. In most enterprise architectures, product lifecycle management (PLM) is the starting point to tackle this challenge. Cognizant is a [recognized leader in PLM implementation](#). PLM hosts bill of material data that can be integrated with environmental impact databases and enterprise systems to provide real and granular data on a product's environmental footprint and support a company's Scope 3 impact management.

**Circular business models:** To get a grasp on more data, a shift in business models is needed—from linear to circular. A main component of circular business models is added service.

This can range from extended warranties and repair and maintenance contracts to offerings that are based on an outcome, a result, or product performance.

That latter type of advanced service, where a company retains the ownership of the products it provides, sets the scene for new levels of resource efficiency and environmental performance. Providing a product as a service requires advanced digital capabilities. IoT-enabled devices and circular asset management applications can collect relevant data on a product's usage, condition, and location. Cognizant has helped clients implement this, ranging from coffee machines to pumps as a service. With their competitive access to data and better supply chain resilience, circular business models can outcompete linear counterparts in the long term.

**“Companies need to build the capability to provide green products that are fit for a circular economy at scale to remain competitive. And they need to back up their claims with data and evidence.”**

Dr. Jan Konietzko,  
Sustainability Advisor - Circular  
Economy Expert



# Sustainable supply chains

Creating sustainable supply chains requires innovative strategies and effective data solutions. To achieve that, companies are moving from chasing operational efficiencies to becoming vision-driven ecosystem architects.

## The importance of traceability and transparency

As evidenced by proposals for an [EU Digital Product Passport](#), regulators are demanding greater supply chain traceability and reporting transparency related to sourcing and management of suppliers. Companies need to have visibility and control of their end-to-end supply chain practices to effectively track and manage social and environmental impacts. Data systems that support supply chain traceability also allow for assessments and analytics to determine new areas for efficiencies. Measuring upstream and downstream activities is instrumental in acquiring full visibility and managing business, social, and environmental risks accordingly.



## Supply chain engineering and optimization

While creating sustainable supply chains, companies will generate massive amounts of data for reporting. This data can support ESG reporting, but it also can assist in identifying new opportunities, serving as input into new product design, and optimizing future supply chain capabilities throughout product lifecycles. This is when we will see truly sustainable supply chains.

Improving supply chains for the long term and designing a more circular economy are two sides of the same opportunity. Moving to a more circular economy requires stronger partnerships and higher resiliency throughout a company's upstream and downstream supply chain.

This will help companies to manage their Scope 3 emissions more effectively. Cognizant has helped clients develop Scope 3 data management strategies and implemented solutions to improve emissions data management and meet clients' goals.

**“Those with sustainable supply chains are at an advantage in that they can measure and map entire product lifecycles and make decisions that consider environmental and social footprints, as well as cost and management implications.”**

**Anca Novacovici Lunn,**  
Principal Sustainability Advisor

# Sustainable IT

IT is at the heart of many business operations, and demand for these companies' digital infrastructure is growing year by year. Socially distant interactions throughout the pandemic boosted internet traffic by 40 percent in 2020.

At the same time, IT departments face increasing pressure to decarbonize, align with corporate sustainability agendas, and reduce e-waste production. Companies can take a holistic approach to designing more sustainable IT operations and managing waste.

**“With digitization being essential for business growth, there is an increasing demand for analyzing the procurement, use, management, and disposal of assets to minimize Scope 3 emissions and the impact on the environment.”**

**Ryan Schmidt,**  
Principal Advisor -  
Digital Transformation & Sustainability

## Case Study

The CIO of a global food and beverage company recently wanted to identify the strongest opportunities for IT sustainability. This effort did not simply snap into place using existing processes and practices: It called for company leaders to step out of their comfort zones. Cognizant performed an analysis of the IT operation's greenhouse gas emissions through KPI identification and baseline estimations. Analyzing current initiatives, data collected from stakeholders, and best practices served as support for creating a 2022-2040 roadmap and identifying potential opportunities and current challenges. Cognizant's work helped the IT department set an aggressive greenhouse gas reduction goal to reach net zero five years ahead of the companywide goal.





# Sustainable manufacturing and operations

The transition from linear to circular business models requires companies to design the products they make today as resources for the future. They need to find ways to optimize the value generated through multiple life cycles while establishing efficient, circular, and environmentally friendly material flows. Senior executives should embrace this ambitious goal toward Industry 5.0 with the power of big data, cloud, AI, and IoT technology.

Cognizant recently helped a global food retail business to cut food waste in a part of its supply chain by 10 percent, reducing its operations costs by more than \$23 million USD

annually. This was only feasible by improving the cold chain management with a suite of digital solutions, including IoT and AI at scale.

“ The key is to find your organization’s ‘sustainability sweet spot’: the place where profit, product, and digital solutions seamlessly blend with the pursuit of a sustainable common good.”

Alessandro Silvestro,  
Principal Industry 4.0 & Sustainability Strategist

# Explore more about sustainability-focused solutions

As people around the globe are impacted by climate change, demand for governments, businesses, and others to act is growing. Connected digital solutions that harness speed, automation, and AI will be critical in helping organizations through this transformation. From both a competitive and a reputational perspective, now is the time to act.

Connected digital solutions that harness speed, automation, and AI will be critical in helping organizations through this transformation. From both a competitive and a reputational perspective, now is the time to act.

At Cognizant, we are helping companies transform to account for present and future environmental risks, regulations, and expectations—and we are doing the same internally. We understand how to address these challenges, provide roadmaps for sustainability success, and implement digital solutions to achieve that success.

Our partnership with Microsoft stems from shared corporate values and a drive to assist customers in achieving similar goals. Microsoft has a growing ecosystem of solution partners, a notable benefit for companies that want to find and deploy market-ready solutions quickly. Cognizant and Microsoft recently collaborated on a thought leadership webinar, [Sustainability Transformation Beyond ESG Reporting](#), about helping companies go beyond ESG reporting and into operational transformations.

Find more thought leadership on these issues and information about sustainability-minded services and technology from [Cognizant Sustainability Services](#). Explore how the [Microsoft Cloud for Sustainability](#) can help your company start recording, reporting, and reducing its environmental impacts. We are committed to showing businesses how they can fulfill their responsibility to our planet and also reap long-term benefits and profit.

# To learn more about our sustainability solutions, visit:

- [Cognizant Sustainability Services](#)
- [Cognizant Sustainability Resilience](#)
- [Cognizant ESG](#)

## Contributors

Dr. Jan Konietzko  
Sustainability Advisor - Circular Economy Expert

Aleksandrs Sidorecs  
Advisory Partner, Industry 4.0 & IoT

Dr. Rouzbeh Amini  
Sustainability Offerings Lead

Dr. Matthew Clancy  
Principal Sustainability Advisor

James Rooke  
Associate Director Sustainability

Jenny Edwards  
Principal Sustainability Advisor

Alessandro Silvestro  
Principal Industry 4.0 & Sustainability Strategist

Anca Novacovici Lunn  
Principal Sustainability Advisor

Ambrose Chiu  
IoT Alliances Lead

Durgesh Narayan Patel  
Director, Sustainability, IoT, and Engineering

Sophia Mendelsohn  
Chief Sustainability Officer and Vice-President of ESG

Ryan Schmidt  
Principal Advisor - Digital Transformation & Sustainability

Dr. Ahmad Karnama  
Energy & Sustainability Director

Aurelio D’Inverno  
Lead Sustainability for AIA

Dana Anderson  
Head of Industry 4.0 and Sustainability Advisory Practice

Luca Nencetti  
Senior Sustainability Advisor

Vernon Turner  
Principal Advisor, Sustainability, IoT and Industry 4.0





1. UN calls for urgent rethink as resource use skyrockets (unep.org)  
<https://www.unep.org/news-and-stories/press-release/un-calls-urgent-rethink-resource-use-skyrockets>
2. World Bank Report Warns Global Solid Waste Could Increase 70 Percent by 2050 | News | SDG Knowledge Hub | IISD  
<https://sdg.iisd.org/news/world-bank-report-warns-global-solid-waste-could-increase-70-percent-by-2050/#:~:text=World%20Bank%20Report%20Warns%20Global,News%20%7C%20SDG%20Knowledge%20Hub%20%7C%20IISD&text=The%20World%20Bank%20released%20a,3.5%20billion%20tonnes%20in%202050>
3. Data Centres and Data Transmission Networks – Analysis - IEA  
<https://www.iea.org/reports/data-centres-and-data-transmission-networksA>



Cognizant (Nasdaq-100: CTSH) engineers modern businesses. We help our clients modernize technology, reimagine processes and transform experiences so they can stay ahead in our fast-changing world. Together, we're improving everyday life. See how at [www.cognizant.com](http://www.cognizant.com) or [@cognizant](https://twitter.com/cognizant).

#### World Headquarters

300 Frank W. Burr Blvd.  
Suite 36, 6th Floor  
Teaneck, NJ 07666 USA  
Phone: +1 201 801 0233  
Fax: +1 201 801 0243  
Toll Free: +1 888 937 3277

#### European Headquarters

1 Kingdom Street  
Paddington Central  
London W2 6BD England  
Phone: +44 (0) 20 7297 7600  
Fax: +44 (0) 20 7121 0102

#### India Operations Headquarters

#5/535 Old Mahabalipuram Road  
Okkiyam Pettai, Thorajipakkam  
Chennai, 600 096 India  
Phone: +91 (0) 44 4209 6000  
Fax: +91 (0) 44 4209 6060

#### APAC Headquarters

1 Changi Business Park Crescent  
Plaza 8@CBP # 07-04/05/06  
Tower A, Singapore 486025  
Phone: + 65 6812 4051  
Fax: + 65 6324 4051