

Be More Green: CGI's innovation story

To achieve net zero by 2026 we know that we must come up with solutions to environmental challenges, rapidly. At CGI we believe that if you put the right information into the right hands, innovation will follow. Technological innovations have created efficient, and effective pathways to achieving sustainability. Harnessed together, innovation can enable sustainability linked to economic benefits. But we know that if we are to be successful in our innovation efforts to be more green, we must embed an innovative culture into our DNA. One that embraces and passionately pursues improvements for our members, stakeholders, organisation, and clients. Beyond doing the right thing for our planet and communities, we understand that becoming more sustainable can reduce waste, lower business costs, and save on input expenses.

In a world where the constantly changing relationships between environmental, social, and financial issues are becoming more and more evident, organisations that remain unaware of their impacts and dependencies will fail to recognise new opportunities for growth, development, efficiency, and resilience. They will also provoke unnecessary risk.

The lessons CGI has learned in efforts to be more green

Innovations have helped CGI predict our environmental impact and respond to risk, especially those associated with climate change, boosting our resilience and reducing vulnerability. Here are some of the lessons we have learned on our journey to being more green:

1. Product innovation is important, but don't forget about process innovation that can lead to operational improvements
2. You can redesign as well as create sustainable products to achieve net zero, reduce waste, and increase efficiency
3. Employees are often the driving force behind innovation and improvements. Ensure business leaders continue to set the tone and support initiatives, demonstrating innovative thinking
4. Create a culture that celebrates failure as a measure of learning, innovation and risk-taking, rather than assigns blame
5. Business leaders and managers need to develop the ability to create sustainable business solutions. We have redesigned our business strategies and our conception of 'conventional practices'.

In partnership with:



Discover the five areas CGI is innovating to Be More Green

1. Energy consumption data

Smart meters, and the data they generate, enable customers and small businesses to benefit from a competitive energy market. Britain's smart metering implementation programme is one of the largest and most ambitious globally; it will give every home and small business the opportunity to have a smart meter. CGI delivers the data systems for communicating with Britain's 53m smart meters, at the heart of the [DCC](#). The systems enable utilities companies to access information on energy usage, providing accurate bills, and enabling better understanding of energy use.

The approach

We know that data helps organisations understand their energy consumption and identify opportunities for energy-saving. And we know the Committee on Climate Change has estimated that without smart meters, achieving net zero by 2050 could cost up to £16bn each year.

Smart meters give organisations and individuals the important data they need to get started on carbon reductions through energy savings. They do this by:

- Reducing waste by articulating energy consumption. They can also assign accountability for targets around consumption
- Supporting business cases for investments. For example, whether to install charge points, insulate a site, upgrade lighting or heating. The data helps build the business cases for investment and better demonstrate return on investment
- Integrating automation control that enables better interaction and consumption reduction.

The innovation

- Machine learning, big data analytics, artificial intelligence (AI), and data visualisation are the tools needed to make sense of data flows. We have developed OpenGrid360, a suite of solutions to meet challenges like new operational standards, new types of data management and integration with business systems, the grid and other market players.

Read more

- CGI is partnered with Smart DCC. [Discover what we're doing.](#)

2. Software development

As organisations become more complex and global, sustainability and transparency in supply chains are becoming more important. While software as a service (SaaS) continues to transform the way we communicate, work, and share data, it is also part of the rapidly growing carbon footprint propagated through digital technologies. It is expected that by 2040, 14% of the world's carbon footprint will be a result of information and communication—up from about 1.5% in 2007. For example, the University of Cambridge estimated that the software innovation behind the development of cryptocurrency needed energy the size of the entire nation of Switzerland to maintain bitcoin.

The approach

We follow principles that ensure that we are developing software with sustainability in mind, and you can too:

- Sustainable life cycle software design starts with efficiency. It is important to consider the carbon emissions of programming languages, APIs and algorithms
- We have developed architectural principles and standards that define boundaries, for example, data used or memory use/efficiency
- In addition, it is possible to eliminate duplicate copies of data and compress data to save energy by reducing incidents of overheated servers
- We also consider increasing the mix of renewable energy.

The innovation

For CGI:

- We have rethought the design aspects of the data centres that operate our cloud-based services using the above principles.

For our clients:

- We identified that the carbon footprint of software originates from the way it is developed for use, rather than the way it is used. With this in mind, we consistently considered our carbon footprint when designing, developing, and deploying of our Trade360 software. Trade360 provides innovative solutions that make banking supply chains more efficient.

Read more

- [A refreshing approach to tea production at Twinings](#)

3. Transport

As the global population and economy continues to grow, so does the need for smarter, more sustainable travel. Adding new infrastructure is not always a feasible option; it's important to consider where we can drive improvements and greener behavioural choices across existing infrastructure.

The approach

Our aim is to meet this challenge by combining digital technologies such as mobility, gamification, big data analytics and travel mode detection to influence and reward behaviour changes in the way we travel.

CGI's SmartTravel – and its underlying Smart Trip Analytics Platform – aims to encourage drivers to change their behaviour. This could be by using a bicycle, for example, instead of a car, or, when using a car, travelling outside of rush hour times. The ultimate goal is to significantly reduce rush-hour travellers per day and per region through driver behaviour modification. Meeting reduction targets is an ambitious undertaking because behavioural change is a complex sociological and psychological challenge. The advantage of SmartTravel is that it motivates users, both intrinsically and extrinsically, providing rewards for making a positive contribution to traffic flow and the environment.

The innovation

SmartTravel uses the principles of the travel hierarchy:

- Digital communications
- Walking
- Cycle
- Public transportation
- Electric car
- Car sharing
- Air travel

SmartTravel is transforming travel in the Netherlands. It uses GPS capabilities on smartphones, without the need for additional hardware, analyses trips and modes of transport to influence and reward positive driver behaviour. Drivers receive real-time travel information in the form of alternative routes and/or alternative modes of transport, allowing them to make better travel choices to help alleviate traffic congestion. Making good choices, such as using a bike instead of a car, for example, is rewarded with points, which can then be exchanged for gifts in a specially created online shop.

Read more

- [Transforming travel in the Netherlands through digital technology and behaviour modification](#)

4. Food waste

Research shows that approximately 25% of edible food is thrown away in restaurants and catering outlets every year. Food waste has a major environmental impact on the entire food production life cycle – from agriculture, to transport, to food storage and preparation. In fact, ISO 14001 environmental standards recommend that foodservice companies address their environmental impact on the entire food production chain in their environmental sustainability strategies. CGI's clients in the food services industry estimate that minimising food waste is the most efficient way of developing more sustainable strategies.

The approach

We know that technology can enable efficient and sustainable foodservice operations in the catering, health and retail sectors by digitising processes across the entire foodservice delivery life cycle. Continuous improvement in operations by collecting data in real-time is important.

Technology enables food services providers to:

- Track and manage accumulated waste
- Drive efficiencies and save costs
- Reduce carbon dioxide (CO₂) emissions

Organisations should follow the principles of the circular economy and waste hierarchy when deploying technologies. This means setting out the priority order for managing waste materials based on their environmental impacts by preventing waste, minimising waste through reusing, and then recycling.

The principles of the circular economy are based on three principles, driven by design:

- Eliminate waste and pollution
- Circulate products and materials (at their highest value)
- Regenerate nature

The innovation

Using real-time data, CGI's Aromi, for example, analyses customer, regulatory and financial requirements to optimise menu design, meal planning, delivery, and invoicing. It also collects food waste data in real-time, enabling clients to better track and manage accumulated waste. This not only drives efficiencies and saves costs but also reduces CO2 emissions. Quick analysis through visual data and waste management is even easier during peak hours. Staff can weigh food waste and enter the results in the online application, with segmented and visualised data stored in the cloud, driving environmental sustainability.

Read more

- [Reduce, reuse, recycle, replace because there is “No Planet B”](#)

5. Monitoring the environment

Communities can only flourish when the needs of the society are met – this means universal access to clean air and water, healthy land, and food. Business can help. And we know that monitoring the sustainable use of the earth and its resources is critical to this.

The approach

The recognition of the importance of nature is our foundation; therefore, we continuously assess performance of natural capital. This means that we assess and track changes in natural systems that may have implications for businesses, industries, communities, and countries. The United Nations defines natural capital as the natural environment which includes resources such as energy resources, land, timber, livestock, soil resources, minerals, wind energy, solar energy and many more.

As one of the largest industrial groups in Europe specialising in natural capital data, we help turn Earth Observation data from satellites to monitor things like coastal erosion, atmospheric chemistry and land usage. Users of such data are extremely diverse – from scientists to governments, meteorologists, forecasters, insurers, geologists, urban and transport planners, and defence – to name a few. From there we identify where we can make investments in innovations at-pace to meet urgent global climate-change challenges.

We know that actionable information is not easily available and accessible. So, we are also working to create methods for our organisation, and others, on natural capital accounting to make information readily available. For example, we have partnered with a charity called Project Seagrass to deliver an innovative and transformative solution to enhance efforts in the conservation of marine habitats along our coastlines. Ultimately this effort adapts practices and provides greater practical innovative technological approaches for including natural capital metrics in standard financial and return-on-investment (ROI) evaluations

The innovation

For CGI:

- We developed GeoData360, a Platform as a Service innovation that supports deep customisation and extension. It enables production workflows that consume earth observation and Geo Data (information recorded in conjunction with a geographic indicator of some type) to produce valuable business information, to run cost efficiently, at scale. It is a technology that links our business with rigorous, scientific natural capital information, processing large volumes of data using complex workflows and algorithms so we can make informed decisions
- We have also developed our spatial, predictive modelling of global data on nature. This allows us to test possibilities and explore new scenarios for our organisation to have a positive impact on the world around us. It means we can understand alternative futures that would result in shifts in natural capital.

For our clients:

- Our greenhouse gas early warning service uses space data to monitor greenhouse gas emissions by consistently using data from satellites. The technology helps businesses to gain insight into potential risks, and actions they can take to (a) ensure their demands can continue to be met, and (b) stay competitive
- [CGI's Seagrass](#) CO2 monitoring uses the GeoData360 Earth Observation Platform to leverage data from the European Space Agency's Copernicus Satellite to process seagrass data using algorithms. Quantifying seagrass meadows across the UK helps organisations to preserve and restore this valuable carbon sink resource.

Read more

- [The business benefits to joining the Race to Zero](#)
- [Going green in manufacturing: Recommendations to get started on your sustainability journey](#)

