

How Tech Innovation Supports Sustainability & Socially Responsible Brands



Most organizations are realizing the critical role sustainable business practices play in protecting the environment, from energy-efficient practices to waste management and more. Beyond the obvious environmental imperatives, customers increasingly value those brands that are socially responsible and work to do good in the world, which includes being environmentally friendly and practicing sustainability. These practices can help improve an organization's reputation within its industry and among its customers, which can also improve customer satisfaction, loyalty, and ultimately the bottom line.

Customers increasingly consider eco-consciousness to be an important quality in the organizations they do business with. According to a Nielsen report, almost half (48%) of U.S. consumers say they would change their consumption habits to reduce their impact on the environment.

Technology has a special role to play in the push for greater sustainability. In fact, technology is arguably the biggest driver behind corporate sustainability efforts to reduce the amount of corporate waste and lessen a company's carbon footprint.

For example, Internet-of-Things networks can be used to monitor energy usage or to detect inefficiencies in equipment use, while machine learning and predictive analytics will play a role in

resource allocation and maintenance. The need for networks that support high-volume, high-speed data and edge computing to support these data-intensive operations is driving many organizations to reconsider their current IT strategies.

How Technology is Being Used for Sustainability

According to research from the WWF, each year companies spend [\\$450 billion on energy efficiency and sustainability initiatives ranging from smart metering to waste management.](#)¹

Building 'Smarter' Factories

Manufacturing companies are embracing sustainability by building factories that incorporate automation and connected devices to achieve greater efficiencies at lower cost and less overhead. In smart factories, intelligent sensors, motors and robotics are present on production and assembly lines, each collecting data that the company can use to drive further efficiencies, such as performing proactive maintenance on systems to keep them from breaking down and ensure energy consumption is optimal.

Data is at the heart of the smart factory, collected automatically from machines and applications and transformed into actionable insights.

One common way in which smart factories are helping reduce environmental impact is through the use of energy monitoring—which shows how much energy is being used—through smart meters

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and Internet of things (IoT)-connected devices. Using such devices, companies not only have a firmer grasp on managing their energy use more effectively, they also receive data they can analyze to discover ways to further reduce or be more efficient in their energy consumption.

For example, a facility experiencing high energy use in the afternoon could see how much energy each of its machines is consuming in real-time and shut down those that aren't being used. Using that data, the facility also could reconfigure its manufacturing floor layout for greater efficiency, leading to less energy use.

A growing number of factories are embracing the use of alternative energies as well, such as solar power or wind energy. [Tesla, for example, has made a promise to power its "Gigafactory" with 100% renewable energy by the end of 2019,](#)² while soap maker [Method uses a wind turbine and solar panels that track the sun to power its manufacturing facilities.](#)³

Philips is another example of a company making sustainability a hallmark of its business, from product inception to production and beyond. The company is using data analytics as a major driver in its ["Green Innovation" program](#), which "...determine[s] the environmental impact at each stage of a product's life [from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling.](#)"⁴ As a result, the company expects to achieve [carbon neutrality by 2020.](#)⁵

Making HQ + Branches Greener

Sustainability efforts are rampant in corporate headquarters and branch offices, too. In the data center and beyond, many organizations are reducing the stress on their machines through workload balancing, which distributes workloads among different systems and geographically dispersed areas. Using IoT sensors coupled with data analytics, companies can measure the output of

their systems and determine which ones are under stress and therefore prime for failure. They then can shift the load to systems that aren't running at peak capacity, reducing wear and tear on the systems overall, which could lead to system failure and replacement. Workload balancing can help prolong the life of the systems, which reduces the amount of hardware that ends up in the landfill.

The use of technologies such as workflow automation and e-documentation solutions also are helping businesses reduce their waste derived from paper. Workflow automation tools can help organizations stay on task digitally, without creating paper trails or unnecessary documents that end up in the landfill. E-documentation solutions, meanwhile, eliminate the need for paper copies of documents by enabling users to sign documents electronically and store them digitally in the cloud or in an on-premises server.

Other, more established methods of supporting sustainability are those that help organizations reduce their carbon footprint, such as lights and climate control systems that turn on or off based on movement in the room.

Technologies Promoting Sustainability

Sustainability efforts in companies can take on many forms, all of which utilize technology in some fashion to either enable or support those efforts. IoT, edge computing, cloud computing and other technologies are becoming important technology pieces of the sustainability puzzle, giving organizations more ways to reduce their ecological footprint.

IoT sensors are being used to collect important data to add intelligence to decision-making, which can help companies work smarter and more efficiently. Beyond helping organizations determine ways to streamline their operations to reduce operational overhead, uncover wasteful or unnecessary processes that can hamper customer satisfaction, IoT sensors

can improve customer experience with a company or its offerings. For example, [iRobot's Wi-Fi-enabled Roomba vacuums automatically send performance data back to the company, so customer reps have the information on hand should a customer call.](#)⁶

Edge computing can help the massive amounts of information collected become actionable data more quickly. By enabling the processing of data collected by IoT sensors on networking devices located at the “edge” of the network, organizations receive relevant data faster without overwhelming their corporate network, which not only lessens the stress on the network but also aids in better-informed decision-making and more positive customer experiences. Edge computing also can be used in customer-facing settings such as retail stores or bank branches to provide data in real-time to help improve customer experience, such as automatically dispatching more tellers or cashiers to reduce customer wait times.

Data analytics and artificial intelligence (AI) also can help companies make more intelligent decisions regarding their sustainability efforts. And, when coupled with **automation**, AI can improve employee experience, by enabling them to focus on more value-added tasks, and customer experience, by offering goods and services that are more relevant to their situation based on their buying history.

The adoption of **cloud-based (serverless) infrastructure** can go a long way in helping organizations reduce their carbon footprint by enabling their current physical footprint to stay the same or even be reduced. A cloud-based infrastructure also reduces the amount of physical hardware necessary on-site, which helps reduce the waste stream down the line. And, by enabling the access of information anywhere, it also supports

workforce flexibility such as work-at-home initiatives, reducing carbon emissions created by the daily commute to the office.

Software-defined networking (SDN), meanwhile, can help organizations reduce their hardware costs while promoting quicker deployment of networked devices and services. Rather than having to rip and replace existing networking infrastructure, organizations can employ an SDN overlay to enable newer technologies that use less hardware overall and work more efficiently to process and deliver data without added stress to the network. Software defined networking also allows network managers and communication providers to remotely troubleshoot issues and avoid “truck rolls”, i.e the dispatching of crews and equipment to each incident site, thus decreasing emissions.

Network Technology's Role

As the implementation of Internet of Things devices and analytics expands, so will the number of connected devices and amount of data flowing through the network. Companies should be looking to build a network foundation that is future-proofed for a connected world.

- **Scalability:** Being able to handle new technologies that further support sustainability efforts
- **Reliability:** Keeping applications, systems and devices working at high efficiency.
- **Security:** Ensuring connected systems and devices, and the data collected, are safe from bad actors and breaches.

To learn how Comcast Business' network and advanced solutions can power your business, go to ComcastBusiness.com/Enterprise.

1 “Power Forward 3.0: How the largest U.S. companies are capturing business value while addressing climate change,” WWF, Ceres, Calvert Research and Management, CDP, April 2017 https://c402277.ssl.cf1.rackcdn.com/publications/1049/files/original/Power_Forward_3.0_-_April_2017_-_Digital_Second_Final.pdf?1493325339

2 Kyle Field, “Tesla Gigafactory To Be Powered 100% By ‘Tesla Solar’ By End Of 2019,” CleanTechnica, Aug. 27 <https://cleantechnica.com/2018/08/27/tesla-gigafactory-to-be-powered-100-by-tesla-solar-by-end-of-2019/>

3 Emily Folk, “The Role of Renewable Energy in the Manufacturing

Sector,” Renewable Energy Magazine, April 8, 2019, <https://www.renewableenergymagazine.com/emily-folk/the-role-of-renewable-energy-in-the-20190408>

4 Philips “Sustainability” website <https://www.philips.com/a-w/about/sustainability/sustainable-planet/green-products-and-green-innovation.html>

5 Ibid

6 Alison DeNisco Rayome, 4 ways IoT can improve the customer experience,” TechRepublic, March 16, 2018, <https://www.techrepublic.com/article/4-ways-iot-can-improve-the-customer-experience/>