



From Carbon Neutrality to Circular Economies: Transforming Supply Chains

Achieving Business Success While
Tackling Climate Change

May 2024

In an era marked by **climate change urgency**, the intersection of **decarbonization, supply chain sustainability**, and **circular economies** emerges as a powerful nexus for transformative action. These efforts can help in **reshaping** our world, fostering **resilience**, and **safeguarding** our planet's future.



Decarbonization and Its Role in Mitigating Climate Change

In the pursuit of a more sustainable future, the necessity of decarbonization has gained prominence. As the global community grapples with the challenges posed by climate change, businesses play a pivotal role in shaping environmental outcomes.

What Is Decarbonization?

Decarbonization represents a multifaceted approach aimed at significantly reducing or eliminating carbon dioxide (CO₂) and other greenhouse gas emissions from our atmosphere.

Decarbonization includes:

1. Emission Reduction:

Curbing emissions resulting from the combustion of fossil fuels.

Key strategies include:

Transition to Renewable Energy: Leveraging zero-carbon sources such as wind, solar, hydropower, geothermal, and biomass.

Electrification: Shifting sectors toward electricity-based systems.

Energy Efficiency: Reducing energy demand while maintaining productivity.

2. Carbon Removal:

Beyond emission reduction, decarbonization necessitates capturing and storing carbon.

This involves:

Carbon Capture and Storage: Capturing emissions from industrial processes and power plants.

Enhancing Carbon Sinks: Improving carbon storage in forests and agricultural lands.

Why Decarbonization Matters

Decarbonization gained popularity after the signing of The Paris Agreement and the recognized direct link between greenhouse gas emissions and global warming. The Paris Agreement aims to limit global warming to below 2°C above pre-industrial levels, with an even more ambitious target of 1.5°C. In 2022, The United Nations observed that greenhouse gas emissions must be slashed globally by 45% within the next eight years to achieve the 1.5°C goal.

To businesses, the consequences of inaction are stark:

economic risks, stranded assets, and escalating capital costs.

Decarbonization Strategies

Businesses seeking to embrace decarbonization and contribute to a more sustainable future should consider:

- **Renewable Energy Adoption:**
Businesses can start by evaluating their current energy sources and understanding what renewable energy options are available from local utilities. Then they can develop a plan for transitioning away from fossil fuels, including renegotiating energy contracts and considering options for on-site energy generation, such as wind, solar, or geothermal.
- **Energy Efficiency and Demand Management:**
Businesses can implement energy-saving technologies and practices within their operations. This can include upgrading lighting systems, optimizing HVAC systems, and adopting smart building management solutions. Businesses can also participate in demand response programs offered by local utilities that incentivize businesses to reduce energy consumption during peak hours. By managing energy demand effectively, companies can contribute to grid stability and reduce overall emissions.
- **Employee Engagement and Partnerships:**
Engaging employees in sustainability initiatives is important. Businesses should foster a culture of environmental responsibility by educating staff, encouraging eco-conscious practices, and involving them in decision-making. Decarbonization requires the collective efforts of everyone, and businesses should consider how they can support the efforts of others, as well as obtain others' support.
- **Alternative Business Models and Carbon Footprint Reduction:**
Businesses may want to consider moving away from a traditional, linear business model and instead adopt circular or regenerative business models. Additionally, businesses should consider the sustainability of their entire supply chain, including suppliers, manufacturers, transportation, etc. Addressing a business's carbon footprint holistically can have a meaningful impact.
- **Carbon Capture and Storage:**
A comprehensive decarbonization strategy requires carbon capture as well as emission reduction. Businesses will need to explore what carbon capture, utilization, and storage solutions are available to them. New methods are constantly being developed and businesses may want to consider whether investing in emerging technologies in the carbon capture space aligns with their corporate values.

The Case for Swift Action

Some businesses may choose to adopt a wait-and-see approach to decarbonization – letting others go first. However, there is increasing evidence that those businesses that adopt decarbonization strategies early have greater potential for increased long-term value. Start-ups may be more willing to be pioneers due to their higher risk tolerance and agility, but established businesses possess unique advantages. Their long-term customer relationships and access to capital position them to lead effectively. Swift action is not just an environmental imperative; it's a strategic opportunity for survival and value creation. Decarbonization is not just the latest buzzword – it is a necessary path toward a sustainable future. Businesses that embrace it will not only contribute to global well-being but also safeguard their own resilience and profitability.

Supply Chain Sustainability: Navigating to a Greener Future

The intricate web of global supply chains connects producers, manufacturers, and consumers across continents. Yet, this intricate dance often leaves ecological footprints—some subtle, others glaring. Supply chain sustainability seeks to minimize these impacts.

Businesses are increasingly recognizing the importance of supply chain sustainability, whether as part of a decarbonization strategy or simply to be more environmentally conscious.

Supply chain sustainability extends beyond profit margins and revenue growth. It encompasses a commitment to minimizing environmental harm while positively impacting people and communities associated with a business's operations. By focusing on energy usage, water consumption, waste reduction, and ethical practices, businesses can create a more sustainable supply chain.

Reasons to Prioritize Supply Chain Sustainability

Climate Imperatives

Decarbonization is a global imperative. Supply chains play a pivotal role in achieving climate goals. Eight supply chains (food, construction, fashion, fast-moving consumer goods, electronics, automotive production, professional services, and freight) contribute to over 50% of global greenhouse gas emissions. By addressing sustainability within these supply networks, businesses can significantly impact the fight against climate change.





Benefits to the Bottom Line

- **People:**
Consumers increasingly expect brands to address sustainability issues. COVID-19 has further amplified this trend, with 93% of global consumers reconsidering their views on sustainability. Employees also want to work for businesses that are prioritizing sustainability: a recent study found that 69% of respondents were more likely to accept a job with an organization they consider environmentally sustainable.
- **Profits:**
Sustainable practices can lead to cost savings, improved efficiency, and long-term value creation. CEOs who prioritize sustainability attract talent and drive economic benefits.
- **Planet:**
A sustainable supply chain reduces environmental impact, benefiting both the planet and future generations.

Reputation and Resilience

- **Enhanced Reputation:**
Businesses committed to sustainability build trust with stakeholders, including customers, investors, and employees.
- **Risk Mitigation:**
Sustainable supply chains enhance resilience by minimizing risks associated with climate events, resource scarcity, and social disruptions.



Benefits to Businesses

Building a more sustainable supply chain is about more than looking and doing good, it can also have a significant positive impact on a business's bottom line.

Cost Reduction:

Supply chains typically account for 50-70% of a business's operating costs. By adopting sustainable practices, businesses can reduce expenses and enhance overall financial stability.

Competitive Advantage:

Sustainable practices enhance brand reputation, attract environmentally conscious customers, and increase loyalty and satisfaction. Employees also seek organizations aligned with their values, including environmental responsibility.

Innovation and Partnerships:

Sustainable supply chains drive creativity, fostering new solutions and technologies. Collaborative partnerships across sectors can build more resilient and sustainable supply chains. By working together businesses can share costs and innovations.

Keys to Success

The keys to successfully implementing a sustainable supply chain include:

Leveraging technology, including artificial intelligence (AI)

Leveraging technology and AI allows businesses to collect, analyze, and interpret vast amounts of supply chain data. This enables informed decisions, identifies inefficiencies, and promotes sustainability. AI algorithms can predict demand fluctuations, optimize inventory levels, and reduce waste, for example: machine learning models can forecast seasonal demand patterns, thus minimizing excess inventory. Technology provides real-time visibility into supply chain processes, helping companies track products, monitor environmental impact, and monitor compliance with their sustainability standards.

Supplier Diversification

Relying on a single supplier can be risky. Diversification can provide continuity if one supplier faces disruptions. Diversifying suppliers geographically reduces dependence on a specific region. Local sourcing minimizes transportation emissions, while global sourcing offers cost advantages. Diversification also allows businesses to choose partners aligned with their values. Regular audits can assess suppliers' sustainability practices, labor conditions, and environmental impact.

Supplier Collaboration

Businesses will be much more successful in reaching their sustainability goals if they engage with suppliers as partners rather than transactional entities. Collaborating on sustainability goals, sharing best practices, and jointly addressing challenges will create a stronger relationship. Open communication fosters trust. Sharing sustainability objectives, progress, and performance metrics with suppliers will help achieve goal alignment and identify opportunities for continuous improvement.

Commitment of Resources

Leadership buy-in is crucial. When senior management prioritizes sustainability, it permeates throughout the organization. Top-down commitment helps support allocation of sufficient resources (in terms of both personnel and funds) for sustainability initiatives. Personnel will also need training to understand sustainable practices, compliance requirements, and how to integrate them into daily operations. Creating sustainable supply chains will also likely require upfront investments (e.g., renewable energy infrastructure, eco-conscious packaging).

Supply chain sustainability is not a luxury; it's a necessity.

Businesses that embrace it position themselves for long-term success, contribute to a healthier planet, and inspire positive change across industries.

Looping Forward: Circular Strategies for Sustainability

The concept of a circular economy has gained prominence in recent years as a powerful alternative to the traditional linear model of resource consumption. In a circular economy materials flow in closed loops, and waste becomes a resource.

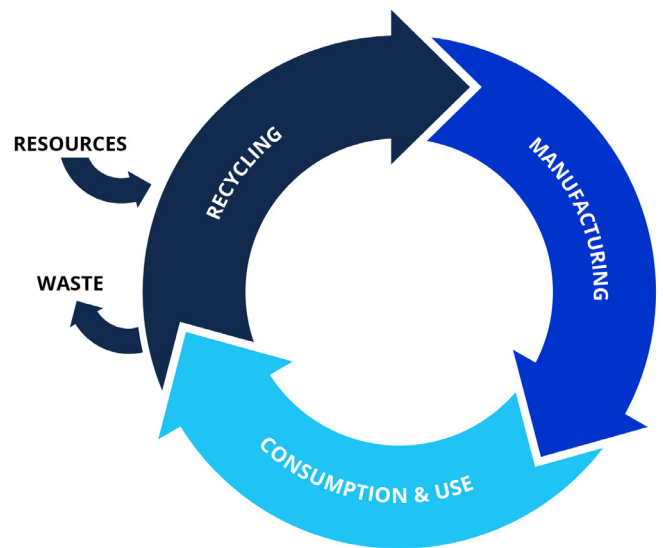
Circular solutions enhance supply chain resilience, reduce embedded carbon, and pave the way for a regenerative economy.

What is a Circular Economy?

A circular economy is a system that aims to minimize waste and maximize resource utilization. Unlike a linear model, where products are manufactured, used, and discarded, a circular economy keeps materials and products in circulation for as long as possible.

Key principles include:

- **Resource Preservation:**
Rather than depleting finite resources, a circular economy focuses on maintaining their value over time. It emphasizes reusing, refurbishing, and recycling materials.
- **Waste Elimination:**
By designing products for longevity and ease of disassembly, waste generation is minimized. The goal is to eliminate the concept of “waste” altogether.
- **Systems Thinking:**
Circular economy strategies consider the entire lifecycle of products, from raw materials extraction to end-of-life management.



The Importance of a Circular Economy

Environmental Benefits

A circular economy aims to make better use of finite resources like forests, soil, water, air, metals, and minerals. By minimizing waste and maximizing resource utilization, it helps protect natural ecosystems and reduces the strain on raw materials. Circular strategies can cut global greenhouse gas emissions by promoting practices such as recycling, remanufacturing, and efficient resource management. Reduced emissions and efficient material movement positively impact environmental health.

Economic Advantages

Circular practices lead to reduced energy consumption, as products are designed for longevity and reparability. This can translate into cost savings for businesses. A circular economy allows businesses to rely less on imported raw materials. By maximizing local resources and reusing existing materials, companies enhance their independence. By promoting actions like recycling and remanufacturing, businesses can extend the useful life of products. This not only reduces waste but also saves money on production and disposal. Circular economy principles also encourage innovative business models. These models can offer significant opportunities for growth, innovation, and differentiation, such as product-as-a-service models (e.g., car-sharing, tool libraries).

Circular practices have been shown to generate jobs in areas like recycling, repair, and remanufacturing. As businesses transition to circular models, they contribute to local economies and employment stability. It has been estimated that widespread adoption of circular economies could result in \$4.5 trillion in economic benefits worldwide by 2030. This economic boost will benefit both individual businesses and the global economy.

Social Equity

How resources are extracted, used, and disposed of can disproportionately affect already vulnerable communities. By implementing circular practices, negative impacts on these populations can be minimized. One aim of a circular economy is to redefine economic systems to prioritize the well-being of people and the planet. It seeks to rectify existing injustices related to mismanaged waste, pollution, and resource distribution. Circular practices can create more local jobs, which can contribute to economic stability and provide opportunities for diverse communities. In addition, a socially equitable circular economy promotes fair labor practices, decent wages, and safe working conditions.

By promoting product durability and reuse, the circular economy makes goods accessible to a broader population. This extends the benefits of products beyond their initial owners. Collaborative consumption models foster social equity by allowing access to services without the burden of ownership. Circular practices also minimize pollution, benefiting communities by improving air and water quality, which directly impacts public health and well-being.

Increasing Business Value through Circular Economy Practices

In addition to preserving resources and limiting (or eliminating) waste, a circular economy offers a strategic framework for businesses to create value.

Extending the life of products reduces the need for frequent replacements. This translates to lower production costs and higher profit margins. Durable products also lead to satisfied customers who are more likely to remain loyal. Repeat business and positive word-of-mouth can contribute to long-term success. Brands that prioritize longevity demonstrate commitment to sustainability, attracting environmentally conscious consumers.

Optimizing packaging to minimize material usage without compromising protection can reduce costs. Eco-conscious packaging options (e.g., biodegradable, compostable materials) will appeal to customers and satisfy regulatory bodies in many locations across the globe. Transportation is another area where circular economies can add value

by implementing more efficient logistics that minimize empty miles, improve fuel efficiency, and increase delivery speed. Streamlining last-mile delivery through innovative solutions (e.g., shared delivery networks, micro-fulfillment centers) can reduce costs and increase customer satisfaction.

Reusing materials within the manufacturing process reduces the demand for virgin resources. This is another avenue of cost savings for many businesses. Creating a closed-loop system by remanufacturing or refurbishing components (e.g., machinery parts) prolongs their useful life, lowering procurement costs and reducing waste. The efficient use of resources also minimizes waste and lowers production costs. This promotes a stable supply chain, reducing vulnerability to resource scarcity or price fluctuations. Securing long-term contracts with suppliers can also promote a stable supply of inputs, as can diversification.





The Role of Artificial Intelligence in Circular Economy

AI can be useful not only while a business is transitioning but also once a business is fully enmeshed in the circular economy.

Predictive Analytics

Predictive analytics leverages AI algorithms to forecast future trends, behaviors, and events based on historical data. In the context of the circular economy, predictive analytics plays a crucial role in demand forecasting, maintenance optimization, and pricing and inventory management.

AI models can analyze consumption patterns, market dynamics, and historical data to predict demand for products. This helps businesses optimize production, reduce overproduction, and minimize waste. Predictive maintenance algorithms can use real-time sensor data to anticipate equipment failures. By preventing breakdowns, companies extend the lifespan of machinery and reduce resource consumption. AI-driven pricing models can consider market fluctuations, demand, and supply constraints. Optimized pricing strategies can encourage circular practices like product leasing and sharing.

Supply Chain Optimization

Efficient supply chains are essential for circular economy success. AI algorithms can analyze transportation data to find the most efficient routes, minimizing fuel consumption and emissions. This supports circular practices by reducing transportation waste. AI-driven inventory systems optimize stock levels, reducing excess inventory and waste. By maintaining just-in-time inventory, businesses can minimize storage costs. AI can support supply chain transparency by letting consumers verify the origin and lifecycle of products.



Design Optimization

Designing products with circular principles in mind is essential. AI algorithms can evaluate material properties, recyclability, and environmental impact, which help designers choose materials that align with circular goals. AI-driven simulations help design modular products that are easy to disassemble and repair, thus extending product lifecycles and reducing waste. AI tools can also assist designers in creating sustainable packaging.

Smart Recycling

AI can make the recycling process more efficient and effective. AI-powered robots and sensors can identify and sort recyclable materials from waste streams, thereby improving recycling rates and reducing contamination. AI algorithms can also assess the quality of recycled materials, ensuring they meet industry standards, allowing them to be reintegrated into production cycles. AI facilitates closed-loop supply chains by tracking recycled materials from collection to remanufacturing, ensuring resources remain in circulation.

Examples of Sustainability Efforts

Tony's Choclonely

Tony's Choclonely is a Dutch chocolate company that is working to make chocolate 100% exploitation free.

They are doing this through five principles:

1. 100% traceable cocoa beans
2. Paying cocoa farmers a higher price for cocoa beans
3. Only doing business with farmer cooperatives
4. Establishing 5-year contracts with farmers
5. Teaching farmers how to grow better cocoa beans

Through the application of these principles, Tony's is working to end forced labor and illegal child labor. Tony's is not only leading by example but also hoping that other companies will be inspired to act based on their successes.

Allbirds

Allbirds is an apparel company that started with shoes made from wool. Their shoes are sustainable and use natural alternatives to petroleum-based synthetics wherever they can. They work with Soles4Souls to give new life to lightly used Allbirds shoes. Allbirds also uses 90% post-consumer recycled cardboard in their shoe boxes and they do not add any extra packaging when shipping direct to consumers. They have adopted a supplier code of conduct that promotes safer working conditions, more dignified treatment for workers and environmentally responsible manufacturing processes. Because Allbirds' products are made with wool, Allbirds has established an animal welfare policy that deals with farm practices and animal husbandry. In addition to creating a more sustainable supply chain and a circular economy, Allbirds is working to reduce its carbon footprint to near zero by 2030.



The ODP Corporation

ODP Business Solutions, an operating unit of The ODP Corporation, is committed to helping its suppliers and customers be more environmentally conscious and sustainable. The ODP Corporation has set goals to reduce its greenhouse gas emissions in alignment to limiting global temperature rise to 1.5°C. The SBTi-approved science-based targets include a 46.2% scope 1 and 2 reduction in absolute GHG emissions from a 2019 base year and a 55% per unit in GHG emissions in scope 3 from downstream transportation and use of sold products. Through 2023, they reduced GHG emissions by 36% in scopes 1 and 2 since 2019.

To help its customers, ODP Business Solutions has implemented a GreenerOffice™ Rating System, a GreenerOffice™ Delivery Service, and a Greener Purchasing Program. ODP Business Solutions also provides customers with the ability to recycle their ink and toner cartridges and save on future purchases – more than 65 million cartridges have been diverted from landfills since 2003.

Written by: Big Village

Big Village is a global marketing and media company. Driven by its diverse group of experts, Big Village provides a new way of working by bringing media, insights, and creative all under one roof. Big Village Insights uncovers not just the “what,” but the “why” behind consumer behavior. Driven by data, Big Village Insights delivers integrated expertise and products that fine tune your business strategies, drive bottom line growth, and differentiate in today’s marketplace. Find out more at [big-village.com](https://www.big-village.com).

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To learn more about how ODP Business Solutions can help your business with its sustainability goals, visit <https://www.odpbusiness.com/> or call **1-888-263-3423**.

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