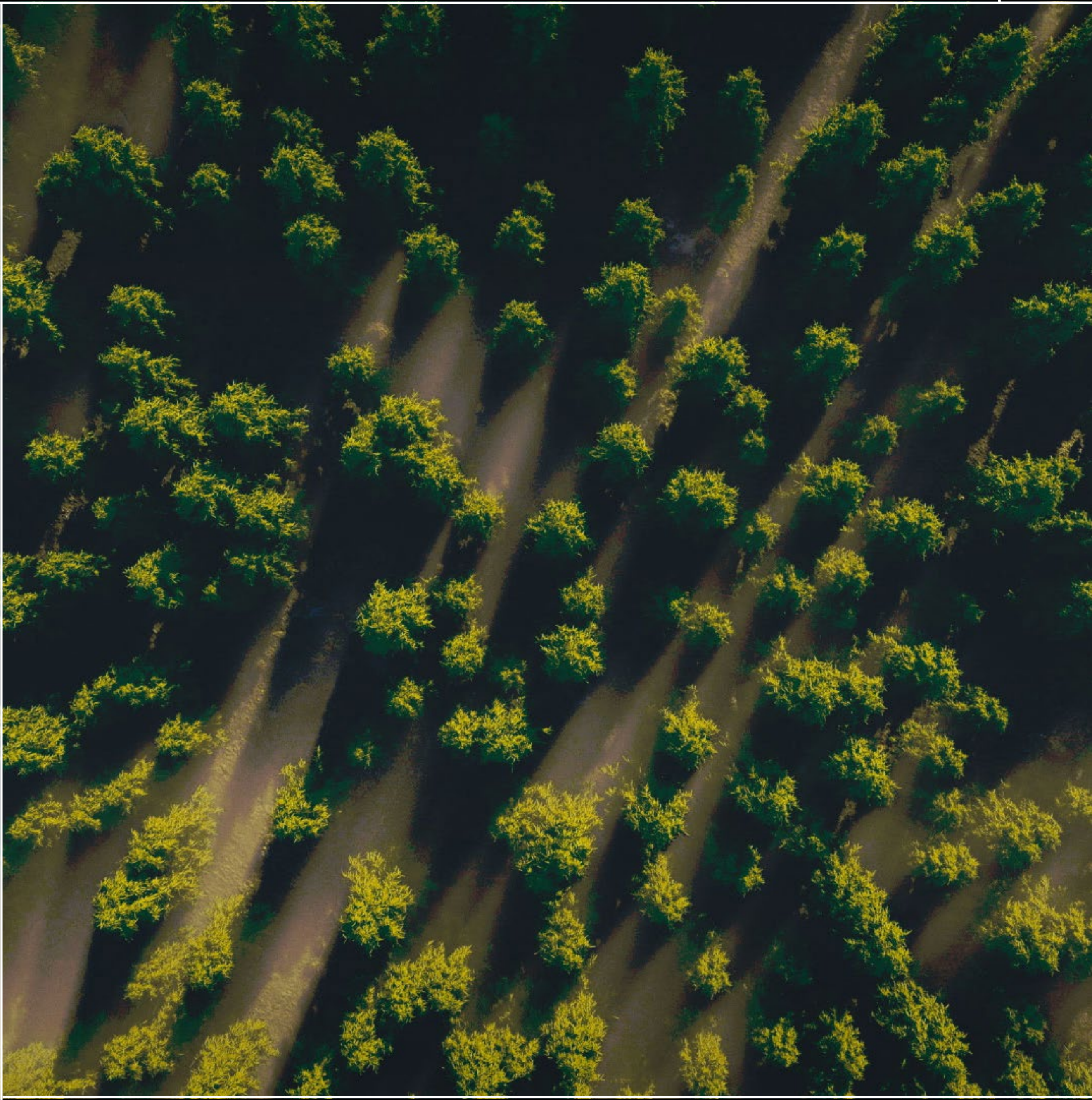
The measurable benefits of a sustainable supply chain



Executive summary

The benefits of a sustainability focus in supply chain operations are clear and measurable.

According to Harvard Business Review, between 2006 and 2010, the growth of the top 100 global **companies that concentrated on sustainability grew significantly faster** in specific sectors compared to a control group of companies that did not include this focus.

Additionally, during the 2008 recession, companies committed to sustainability practices achieved "above average" performance in the financial markets, translating to an average of $650 million in incremental market capitalization (Whelan & Fink, 2016). Interestingly, a focus on sustainable supply chain practices has delivered targeted, yet significant, measurable benefits to their organizations.

This white paper will describe three benefit categories of pursuing sustainability in supply chains, including:

- The positive bottom-line impact that sustainable operations deliver by increasing process efficiencies and reducing resource usage,
- An increase in supply chain transparency that enables companies to mitigate risks, protect brand reputation, and proactively prepare the company for new regulations,
- An acceleration of revenue growth, improved brand reputation, and a greater ability to attract talent and outside investment.

Introduction

Sustainable supply chains have grown in popularity due to environmental, social, and economic concerns. The majority of these concerns stem from a need to manage constant NGO boycotts, stringent governmental regulations, and global warming fears.

In addition, companies also have to consider increasing accountability for human rights violations, work safety issues, and environmental disasters. This focus on supply chains is justifiable. In the United States, supply chains account for more than 90% of companies' greenhouse emissions (U.S. EPA, 2015). Globally, social and labor safety violations are more frequent in companies' upstream suppliers (Villena & Gioia, 2020). **The concerns about the negative impacts of climate change have expanded beyond individual companies** and have become important goals for the global community. In 2015, 196 countries joined the Paris Agreement, a legally binding international treaty on climate change designed to limit global warming to under 1.5 degrees Celsius compared to pre-industrial levels (The Paris Agreement | UNFCCC, 2015). China, which was importing almost 70% of global plastic waste, halted plastic waste imports in 2018 to reduce its environmental impact. To continue the efforts to reach net zero, the **G7 nations and China agreed to ban overseas coal funding in 2021**, and in a statement at the COP26 summit, the U.S. committed to reaching 100% carbon pollution-free electricity by 2035.

The concerns about the negative impacts of climate change have expanded beyond individual companies and have become important goals for the global community.

In the wake of ongoing climatological and humanitarian events, global entities (international organizations, governments, and companies) are aligning to create standards that monitor and measure environmental and social impacts. The Greenhouse Gas (GHG) protocol is a standard that was created by a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) to establish a standardized measurement framework. **Today, this protocol is the most common standard companies use to measure their carbon footprint.** Other standards and initiatives such as the Global Reporting Initiative (GRI), the ISO 14001 Certification, and the Science-Based Targets initiative (SBTi) are used to measure environmental and social impacts as well.

Companies of all sizes are recognizing the importance of sustainability initiatives and acknowledging that **"sustainability is intimately connected with [their] supply chains"** (Sheffi, 2018). Therefore, the incorporation of environmental and social targets, such as limiting emissions by a specific amount or committing to eliminate child and forced labor from their end-to-end supply chains, has become a priority.

Concerns and fears were not the only reasons sustainability gained popularity in corporate environments of late. **There are significant positive benefits that are gained by pursuing sustainable business practices.** These benefits can be divided into three different approaches that will be discussed in this document.

- The first approach focuses on bottom-line performance and drives eco-efficient initiatives.
- The second acts as an insurance policy and triggers risk-mitigation initiatives.
- The third drives revenue growth and stakeholder favorability by issuing eco-segmentation initiatives (Sheffi, 2018).

Good for the planet and good for the bottom line

The most pressing question should be: what opportunities are there to simultaneously save money and reduce environmental impacts?

Some sustainability initiatives have shown results that address both areas. For instance, developing circularity capabilities quantifiably reduces the cost of sourcing raw materials, for example, a global beverage manufacturer implemented a circularity model for its glass bottles. By creating a process to collect, clean, and reuse glass bottles, this company was able to reduce its cost of goods sold (COGS). This reduced the amount of raw materials, in this case, glass, the beverage company needed to source from their suppliers and to reduce the negative environmental impact of transporting those materials from the source to the production and bottling facilities. This resulted in a positive environmental impact by reducing carbon emissions from material transport and production and **limiting the consumption of newly sourced natural resources** to create new bottles.

Other lesser-known initiatives that improve the bottom line, reduce environmental impacts, and increase efficiency are called eco-efficient initiatives (Sheffi, 2018). Like the circularity example mentioned above, **eco-efficient initiatives reduce cost by increasing efficiencies in processes** such as transportation or manufacturing. With oil and gas prices soaring, companies will benefit from a reduction in miles traveled during a production or fulfillment process, increases in vessel capacity, and less dependency on procuring new materials. For example, a manufacturing company or a consumer-packaged products (CPG) company can improve operational efficiency and limit costs by reducing packaging size. This reduction decreases the price per unit of packaging material and shipping costs because they fit more product into existing shipping containers. Moreover, transportation optimization techniques also cut down the distance traveled, decreasing both carbon footprint and transportation costs.

These are just a few of the numerous examples of operational efficiencies that impact the bottom line, boost investment, and drive significant ROI that companies can evaluate and adopt in order to change their green footprint while positively impacting financial performance.

Another type of insurance

→ Current supply chains are prone to severe risk exposure based on the siloed and legacy nature of their original design and implementation. **The four most prevalent kinds of risk are physical, technology, social, and regulatory.** Currently, the physical risk is the most prevalent form due to pandemic fueled disruption. COVID-19 upset operations at thousands of companies starting in early 2020. This mass disruption underscored companies' need to re-engineer their business to account for the interconnectedness of our earth's natural resources and global supply chains and monitor quickly evolving and unforeseen events that impact operations. A prime example of this transformation comes from the pharmaceutical vertical. Drug companies **needed to promptly map their supplier network to identify gaps** in their network and drill down to the second-, third-, and fourth-tier suppliers to understand the potential risks in the face of new outbreaks.

The response to volatility and disruption is not unique to the pandemic turmoil but applies to events like natural disasters such as hurricanes, tsunamis, earthquakes, or geopolitical events such as the Russia-Ukraine conflict. Regardless of the nature of the disruption, **the main takeaway is to embrace the best practice of documenting all of the tiers of the supply network** to gain deep end-to-end visibility, build deeper relationships with those suppliers, and align on ways to create win-win processes to strengthen the entire supply network.

Conversely, organizations that hesitate to embark on the digital transformation journey run the risk of getting left behind by their peers investing in technology and process reengineering, missing out on the secondary "insurance policy" a transformation brings. While hesitation is understandable given the size and scope of most sustainability projects, this approach will not deliver a winning outcome. **Instead, companies should explore existing options** and get comfortable with the accelerated rate of digitization and technology development that provides transparency and other functionalities to their supply chain. o9 Solutions is a technology company that is going all-in on developing technologies that will enable sustainable supply chain transformation through its patented Digital Brain, which can measure, alert, analyze, and respond to sustainability risks in the supply network.

While hesitation is understandable given the size and scope of most sustainability projects, this approach will not deliver a winning outcome.

Another common category of risk that companies face in their supply chains is social. According to the World Economic Forum, a quarter of a company's market value can directly relate to its reputation (Blanchard, 2019). **Human rights violations represent a significant risk for global companies and supply chains.** Frequently, large entities bear the brunt of negative publicity, social sentiment, and brand degradation resulting from the actions of third-, fourth-, or fifth-tier suppliers, of which those large companies may not have been aware, let alone could prescribe acceptable business practices.There have been several attacks on corporations by NGOs that have heavily impacted their stability and financial performance. **These criticisms have increased in frequency, tenacity, and breadth since the mid-90s.** Landmark examples of such actions range from an apparel company boycott in response to child labor in their manufacturing process that destroyed half of the company's market capitalization or negative attention during the 2010s on CPGs companies using palm oil that accelerated deforestation in Asia. Similarly, there are other examples of human rights and labor safety-related issues that have caused substantial corporate and brand instability, such as Thailand's forced labor in shrimp fishing fleets, Africa's forced and child labor problems in cocoa plantations, the exploitation of the Uyghur population harvesting cotton in China, companies violating EPA regulations in the U.S., and other such harmful practices.

Fortunately, by implementing sustainability practices in a supply chain, leaders increase visibility and transparency, enabling them to identify and address social and environmental issues. After engaging in an initiative to uncover these hidden challenges, companies can design and deploy more sustainable governance practices in their end-to-end supply chains and roll

out more impactful eco-risk strategies for sourcing and procurement that integrate more structured sustainability KPIs.

Additional tangible benefits of increasing end-to-end visibility include **identifying and successfully entering new markets and creating new opportunities** by publicizing and marketing newly adopted transparency initiatives. Furthermore, greater visibility is a crucial component of better decision support analysis enabled through network mapping with applications for capacity building, transportation optimization, or inventory management (Kraft & Zheng, 2021).

The fourth risk companies face is regulatory. The emergence of policies drafted to detect and limit social violations such as modern slavery or child labor (California Transparency in Supply Chains Act, the U.K. Modern Slavery Act) has pushed **companies to implement strategies that increase transparency and traceability in the network.** In addition to these regulations, block commitments such as the European Green Deal, the Circular Economy Action Plan, the Active Carbon Tax (South Africa or Argentina), the recent SEC climate disclosure proposal or the consideration of implementing a carbon tax, and emissions trading systems in countries like the majority of European countries, China, Brazil, Canada, etc., ("Carbon Tax Basics," 2021) have also amplified the importance of companies' adoption of ESG measurement and mitigation plans.

While the first steps of transitioning an existing supply chain from financial and operational performance metrics to a green/sustainable model can be daunting, **the ROI and brand goodwill is immeasurable.** Organizations need to begin adopting sustainability into their supply chains to build in a de facto insurance policy that will guard them against negative impacts while presenting revenue growth and cost-saving opportunities.

Green customers and collaborators

This document has outlined the benefits gained from adopting a supply chain sustainability agenda that impacts the bottom line and mitigates several types of common and harmful risks.

This section explores the third potential for revenue growth and the inherent goodwill building with stakeholders and shareholders.

Studies suggest **customers prefer to buy sustainable products rather than unsustainable products at similar prices** (Buell et al., 2019). This statistic is easy to accept. An interesting development, particularly as demographics shift and younger buyers enter consumer markets, is that millennials are not only interested in buying sustainable products but are willing to pay more for them (Sheffi, 2019). This trend, which is only gaining momentum, highlights the growing opportunity for the companies to generate revenue and achieve price premiums in the sustainable customer market. For B2B corporations, sustainable offerings could strengthen partnerships with strategic customers and attract more interest from the market. For example, if a steel manufacturer can produce an accurate order-line carbon footprint, it increases the chances of growing its market share over competitors who cannot produce the same information. For B2C companies, developing sustainable products can create new revenue streams or fortify existing ones by cementing customer loyalty.

The benefits of creating sustainable products goes even further when evaluating a sustainability focus. **By learning how to prioritize sustainable products as core offerings, companies will gain expertise, enabling them to pivot quickly** to emerging regulations and changing customer preferences (Sheffi, 2019).

These eco-segmentation initiatives also improve the company's appeal to internal stakeholders. The Great Resignation has hampered many organizations as workers depart companies to find roles that align more with their personal values. And replacing those lost employees is a battle with other companies in a given industry. A 2021 report from Unily on employment trends revealed that nearly 65% of employees would prefer to work for a sustainable company (Gaskell, 2021). By investing in sustainable offerings and improving the companies' environmental impact, **organizations will benefit from more fruitful recruiting efforts** by their human resources departments and foster a sense of moral alignment with the new employees.

Finally, interest from the investment community into companies with a sustainability agenda is huge. According to CNBC, 2020 had an ESG new investment influx of over $51 billion, which doubled the amount set in 2019 (Adamczyk, 2021). **Therefore, companies looking to grow their business through outside investment would do well to commit to sustainable product offerings** and execute relentlessly against it.

In summary

Supply chains are responsible for many of the troubling environmental impacts around the globe. Therefore, it is **essential to think about supply chains as a critical component on the path to a sustainable economy.**

This document highlighted the three main benefits of implementing sustainability initiatives: increasing efficiencies, mitigating risk, and improving brand reputation. Companies can now start evaluating and adopting technology-enabled sustainability initiatives to reach the targets set by the Paris Agreement. This redefinition of corporate priorities will equally benefit your employees, your bottom line, and the planet.

References

US EPA, O. (2015, July 24). Supply Chain Guidance [Overviews and Factsheets]. https://www.epa.gov/climateleadership/supply-chain-guidance

Villena, V. H., & Gioia, D. A. (2020, March 1). A More Sustainable Supply Chain. Harvard Business Review. https://hbr.org/2020/03/a-more-sustainable-supply-chain

The Paris Agreement | UNFCCC. (n.d.). Retrieved March 14, 2022, from https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

Sheffi, Y. (2018). Balancing Green: When to Embrace Sustainability in a Business (and When Not To). MIT Press.

About Us | Greenhouse Gas Protocol. (n.d.). Retrieved March 14, 2022, from https://ghgprotocol.org/about-us

Blanchard, P. (2019). Council Post: The Importance Of Brand Reputation: 20 Years To Build, Five Minutes To Ruin. Forbes. Retrieved March 14, 2022, from https://www.forbes.com/sites/forbesagencycouncil/2019/12/27/the-importance-of-brand-reputation-20-years-to-build-five-minutes-to-ruin/

Kraft, T., & Zheng, Y. (2021). How Supply Chain Transparency Boosts Business Value. MIT Sloan Management Review. https://sloanreview.mit.edu/article/how-supply-chain-transparency-boosts-business-value/

Buell, R. W., Mariadassou, S., & Zheng, Y. (2019). Relative Performance Transparency: Effects on Sustainable Choices (SSRN Scholarly Paper ID 3324306). Social Science Research Network. https://doi.org/10.2139/ssrn.3324306

Gaskell, A. (2021). Employees Demand That We Become More Sustainable. Forbes. Retrieved March 15, 2022, from https://www.forbes.com/sites/adigaskell/2021/10/31/employees-demand-that-we-become-more-sustainable/

Adamczyk, A. (2021, February 11). Sustainable investments hit record highs in 2020—And they're earning good returns. CNBC. https://www.cnbc.com/2021/02/11/sustainable-investments-hit-record-highs-in-2020.html

Whelan, T., & Fink, C. (2016, October 21). The Comprehensive Business Case for Sustainability. Harvard Business Review. https://hbr.org/2016/10/the-comprehensive-business-case-for-sustainability

Carbon Tax Basics. (2021, October 20). Center for Climate and Energy Solutions. https://www.c2es.org/content/carbon-tax-basics/

Colophon

About the author	Valentina Anzola is o9's Sustainability Solutions Program Lead. She completed her Master's Degree in Supply Chain Management with a specialization in Sustainability at the Massachusetts Institute of Technology. She has seven years of experience in supply chain management, product management, and entrepreneurship. Valentina holds a Bachelor's Degree in Business Management and Product Design from La Universidad de Los Andes in Colombia.
Editors	Katie Fanuko Charlie Jermyn
Oversight	Alison Crawford
Design	o9 Design Lab

o9solutions.com