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Special Report

A Revolution in the Making: The Quest for Net Positive Supply Chains





INTRODUCTION

A Revolution in the Making: The Quest for Net Positive Supply Chains

The business world is changing. “We are at an inflection point where the way businesses operate requires radical change,” said Jeffrey Hollander, co-founder and former CEO of Seventh Generation. A growing number of shareholders and C-suite executives agree. They are taking concrete steps not just to reduce their environmental footprint but to enhance their “handprint,” actively working to restore and regenerate the resources needed to thrive long term. This report describes the transformative vision behind this Net Positive approach, the core strategies it entails, the progress made so far and the hard work that remains to be done.

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Given the damage already done to the environment and the accelerating rate at which the planet is warming, a number of pioneering companies have pledged to give back to the environment, society and the economy more than they take out. Instead of merely mitigating the damage, they are determined to make a positive contribution. They call this restorative, regenerative approach Net Positive.

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No one company can become net positive on its own. That realization has sparked a multitude of collaborative efforts in recent years, as individual companies have found new ways to work with suppliers and customers, and as companies within and across industries have come together to tackle challenges that no one of them could hope to resolve on their own.

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The concept of a net positive supply chain is relatively straightforward: the net result benefits the environment, society and the companies involved. Putting the concept into practice is another matter. Forum for the Future’s Net Positive Group has established guiding principles to help companies get started.

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While the use of the term net positive supply chains is still catching on, the number of companies committed to a truly sustainable future is growing fast. Global giants such as Amazon, Google, AT&T, Colgate-Palmolive, Johnson & Johnson and Levi Strauss & Co. are joining the collective effort.

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Being Less Bad is No Longer Good Enough

The drive for net positive supply chains is gaining momentum

Ray Anderson was pained to learn that a major customer of his new carpet company, Interface, was slipping away. It was the summer of 1994, and at 61, Anderson had just recently left a secure job and put everything on the line to launch his company. The customer's problem wasn't related to quality, price or service. Instead, the customer's environmental consultant had complained, "Interface just doesn't get it." Anderson was dumbfounded. "Doesn't get what?" he asked.

An employee handed him a copy of Paul Hawken's recently published book, *The Ecology of Commerce*. Reading it was a life-changing experience for Anderson, and one that helped launch corporate sustainability in a new direction. In a speech to his employees at the fledgling company, Anderson challenged his small team to find a way to succeed without taking anything from the earth that was not naturally and rapidly renewable. Interface would later become one of the world's largest modular carpet manufacturers and Anderson would be known for his pro-environment stance and support for industrial sustainability.

"We realized our greatest impact is the carbon emissions generated by our customers buying electricity to run our products."

—JOHN PFLUEGER, principal environmental strategist, Dell

Anderson's speech helped spark a revolution, but many today support a still more radical goal. Given the damage already done to the environment and the accelerating rate at which the planet is warming, a number of pioneering companies have pledged to give back to the environment, society and the economy more than they take out. Instead of focusing on mitigating the bad, they are determined to make a positive contribution.

They call this restorative, regenerative approach Net Positive.



“The overall conclusion was that for all of ICT, its potential to reduce carbon emissions was five times its global footprint.”

—JOHN PFLUEGER, principal environmental strategist, Dell

The beginning of net positive. In 2012, Dell Technologies began forging a new set of sustainability goals. They would include ambitious targets for reducing the company’s direct environmental footprint. But the company quickly realized its greatest challenge and opportunity lay beyond its own operations.

“We realized our greatest impact is the carbon emissions generated by our customers buying electricity to run our products,” said John Pflueger, principal environmental strategist at Dell. “Our second biggest impact is the carbon emissions generated by our suppliers using electricity to run their factories to make things for us. Everything below that is marginal!”

On the other hand, its personal computers, workstations and servers do provide the tools to help scientists solve environmental issues related to carbon emissions and global climate change. Solutions once beyond reach could now be conceived and implemented because of the computing power and connectivity Dell and other tech companies provided. “For example, two Dell customers use our high-performance computer clusters to optimize the placement of wind turbines and maximize energy production in wind farms,” said Pflueger.

To quantify its new goals, Dell turned to *The Smart 2020 Report*, a 2008 study by the Global e-Sustainability Initiative (GeSI) that looked at how Information and

Communications Technology (ICT) could help drive solutions to carbon-related challenges. The report concluded that the environmental solutions that ICT made possible have more than compensated for the emissions from servers, computers and communications networks. “The overall conclusion was that for all of ICT, its potential to reduce carbon emissions was five times its global footprint,” Pflueger said.

Just as Dell was formulating its long-term goals in 2012, GeSI updated its report, increasing its estimate of ICT’s net benefit from five to seven times its environmental footprint. Dell still went further, establishing as its 2020 goal a 10-fold return on its natural and social capital (that is, the stock of renewable and non-renewable resources nature provides and the reciprocal social networks that society enables and depends on). By 2020, said the company, “The good that will come from our technology will be 10x what it takes to create and use it.”

Dell was not the only company looking towards Net Positive. In fact, it was one of 10 companies with similar objectives that soon helped found the Net Positive Group (NPG). The NPG was created by Forum for the Future, a global non-profit that works in partnership with business, governments and civil society to accelerate the shift toward a sustainable future. With help from the World Wildlife Fund and the Climate Group, Forum convened the 10 members of NPG in 2013. In addition to Dell, the group included BT, Capgemini, Greater Manchester Fire and Rescue, IKEA, Kingfisher, PepsiCo, SKF, The Crown Estate and TUI Group.

The NPG members were united in their conviction that incremental change would not secure the future of their businesses. “If you are an organization that depends upon natural resources or an organization where social cohesion is critical to the operation of your business,” said Forum for the Future’s CEO, Sally Uren, “simply minimizing impacts isn’t going to sustain your operation long-term. Net Positive is about rebuilding those assets you’re totally reliant on as a business.” The NPG members also agreed that Net Positive had to include social, financial and environmental capital. “You can’t have amazing net positive impact on society while at the same time you’re degrading natural capital,” said Uren.

Within a year, the group had established principles that defined the net positive approach, developed a framework to enable accurate and consistent measurement of results and offered guidance on communicating Net Positive in a clear and compelling way. Before long, NPG expanded into a global platform, with the help of non-profit BSR (originally Business for Social Responsibility) and Harvard’s Sustainability and Health Initiative for Net Positive

Enterprise (SHINE) at the university's T.H. Chan School of Public Health. At its launch event in 2016, the new Net Positive Project provided a five-year vision of what the movement could accomplish and a roadmap to help guide the way.

Emerging paths towards Net Positive. Companies now had a clear sense of where they were headed, but each faced its own unique conditions and had to chart its own path forward. "Where you are in the value chain is going to place different demands on you, and is going to present different opportunities and different challenges," said Pflueger.

Brambles Ltd., a global supply chain logistics company, has had reuse at its core for more than 60 years. After World War II, the Australian government formed the Commonwealth Handling Equipment Pool (CHEP) to take possession of shipping pallets and other transportation assets left behind by the U.S. Army. In 1958, Brambles purchased CHEP from the Australian government and began turning the Army's waste into marketable products. Today, the global supply-chain logistics company has nearly 600 million pallets, crates and containers that are shared and reused by the world's largest retail and consumer goods companies.

Rather than selling its platforms, Brambles rents them to customers around the world, then collects and refurbishes the platforms before renting them to another company. "We will reuse them and reuse them," said Juan Jose Freijo, Brambles' head of global sustainability. "And the more we reuse them, the better it is for the environment and for our business."

Brambles' circular business model offers unique opportunities to advance sustainability. "We have more visibility than anyone else on how products move, because they move on our pallets," said Freijo. Brambles uses this knowledge to help disparate companies coordinate and consolidate their trucking operations. This collaboration reduces the number of trucks on the road, the amount of fuel consumed and CO2 emissions.

But while Brambles' pallet reuse and collaborative trucking efforts are important contributions to sustainability, they are not truly net positive. Such circular economy activities keep existing resources in the current system, which is essential, said Uren, "but they don't restore societal or natural assets, which need rebuilding if we are to deliver the 17 sustainable development goals set by the United Nations in 2015."

To that end, Brambles, like Dell and others, is investing in reforestation, which enables the company to replace more trees than it uses in its operations. Brambles is also working on a pilot project to go beyond reuse. When items

are recycled, there is almost always some degradation. Brambles is working to develop a way to up-cycle mixed plastic waste into valuable products or parts of products. If successful, Brambles' effort will turn a source of pollution into useful goods, to the benefit of the environment, society and the company's bottom line.

Taking the measure of Net Positive. "Many companies, including Brambles, are aiming for Net Positive, but we're not there yet," said Freijo. And knowing when it has achieved its goal will be challenging, he said, because "we are still lacking a clear, measurable definition of Net Positive." There are a growing number of examples that demonstrate the concept. But while there are well-established ways of measuring an organization's or a

Brambles, like Dell and others, is investing in reforestation, which enables the company to replace more trees than it uses in its operations.



product's environmental footprint, there are not yet reliable ways to measure positive outcomes, or handprints.

One approach would be to look at new measures of circularity to complement existing environmental, social, governance (ESG) metrics, said Joe Murphy, lead of the Ellen MacArthur Foundation's Circular Economy 100 Network (CE100). But first, companies need a baseline against which they can gauge the effectiveness of their efforts. CE100, which brings stakeholders together to accelerate innovation, is currently working with major retailers to establish just such a baseline for a number of common retail products.

Boundaries are yet another key measurement issue. What should a company include in its net positive calculations? A manufacturer is likely to focus on the use of natural resources in production and pay less attention to how its products are used. A service company will take a very different approach, concentrating on its ongoing interactions with customers.

Most experts agree it will take time to sort out all the issues involved in measuring net positive outcomes.

“But we can’t let the difficulty deter us from making the attempt,” said Pflueger. Dell is already immersed in the effort. It has completed multiple studies — to determine the net outcomes of online education and employees working from home — and more are planned. “It’s natural

to have fits and starts, and some stuff works and some stuff won’t,” he said. “Gradually we are getting better at it.”

For now, measurements will continue to be a mixture of qualitative and quantitative evaluations. According to Pflueger, when Dell publishes the results of its ongoing efforts in June 2021, “We’ll present a body of work to our audience, and then let them decide for themselves whether we have met our goal.”

Exactly when Dell and others will achieve Net Positive is far from certain. But all are determined to succeed as soon as possible. “There’s a time pressure to all this,” said Murphy. “We’re pushing the limits of planetary boundaries, so success is a necessity.”



Collaboration is Key to Net Positive Results

Companies are finding new ways to work with suppliers and each other

Nike is justifiably proud of its sustainability achievements: reducing waste by 3.5 million pounds over four years, incorporating recycled material in 71% of its products and turning 30 million pairs of used footwear into basketball courts and track fields. “But these are incremental steps,” said Cyrus Wadia, the company’s vice president for sustainable business and innovation.

To reach both its business and sustainability goals, “we need disruptive innovation and that doesn’t happen in a silo,” he said.

Speaking at an annual Circular Economy 100 summit, Wadia emphasized the need for collaborative action. “We advocate for a system-wide approach, because we can’t do this alone. The problem is much bigger than Nike. For us to be successful on this journey, we need elements of the system outside of Nike to come with us.” That realization has sparked a multitude of collaborative efforts in recent years, as individual companies have found new ways to work with suppliers and customers, and as companies within and across industries have come together to tackle challenges not one of them could hope to resolve on their own.

“We need disruptive innovation and that doesn’t happen in a silo.”

—CYRUS WADIA, vice president for sustainable business and innovation, Nike

Companies collaborating with suppliers. In 2014, Levi Strauss & Co. launched a collaborative financing program with its garment suppliers in developing countries. Many of these small vendors struggle to find affordable financing, and when funds are scarce, cost-cutting efforts often lead to shortcuts that compromise workers’ health and safety as well as the local environment. As a supplier’s performance declines, so often does its access to affordable financing.

To help reverse this downward spiral, Levi’s partnered with the International Finance Corporation (IFC), a part of the World Bank Group, to provide reliable financing to its suppliers at rates far lower than they could get on their own. Levi’s program gives the small companies the stability



In the past year alone, a total of 3.4 million empty miles were avoided in Europe and 6,200 tons of carbon dioxide (CO₂) emissions were prevented.

they need to do their best work and the financing they need to improve working conditions and environmental performance. It also eliminates late payments —another financial strain on vendors that endangers compliance.

By treating its vendors as valued partners worth supporting, Levi's encourages the small companies to do all they can to meet the company's environmental, health and safety standards, which are spelled out in its Terms of Engagement (TOE) agreement. The program also gives the vendors a powerful incentive to do better by linking their financing rates to their TOE scores. The higher their score, the less they pay for financing. And the rates continue to drop as the suppliers continue to improve, replacing the previous downward spiral with a virtuous cycle.

The collaborative program gives suppliers the reliable cash flow they need, while helping Levi's move closer to Net Positive. Walmart has also found innovative ways to engage its suppliers in its sustainability efforts. In 2016, the retail giant set an ambitious goal: to reduce greenhouse gas emissions in its supply chain by one billion metric tons by 2030. To enlist the help of suppliers, Walmart launched Project Gigaton. Companies that join the project, by setting emissions-reduction goals and reporting annually on their progress, are given access to resources and information that can help them get started or advance their existing work. Those who shine can take advantage of "significant recognition opportunities." In particular, Walmart will use its prodigious public relations platform to share success stories throughout its organization, supplier community and the public.

Collaborating with customers. Collaboration takes different forms, depending on each company's unique strengths and opportunities. Logistics company CHEP realized that its pallet operation was ideally positioned

to facilitate a collaborative solution to one of its clients' major challenges, empty truck miles. All too often, trucks travel long distances without a load. Such "deadhead" trips are a waste of fuel and a significant source of greenhouse gas emissions. In Europe, where truck emissions are 36% greater than they were 20 years ago, empty truck journeys are increasing.

Because CHEP is constantly picking up and dropping off shipping platforms all across Europe, its database currently holds information on about a quarter of a million transport lanes and 13.5 million declared shipments. To make use of this data, the company developed a proprietary algorithm that enables it to efficiently match empty trucks with potential loads.

But it takes more than data and programming to make CHEP's Transport Collaboration Program a success. According to CHEP, 61% of suppliers and 58% of retailers agree that lack of trust between partners is the biggest challenge to collaboration. Companies without an existing relationship are often reluctant to share information with each other and competitors are downright hostile to the idea. "In such situations, it's very useful to have a neutral player, trusted by all parties," said Juan Jose Freijo, global head of sustainability for CHEP's parent, Brambles.

Even as a neutral third party, CHEP has had to work at bringing potential collaborators together. "It took some years, but more and more as we gain trust and credibility, this idea of collaborating gets into the DNA of the industry," said Freijo.

CHEP's Transport Collaboration Program was launched in 2015. Today, it is used by more than 220 customers across Europe. In the past year alone, a total of 3.4 million empty miles were avoided in Europe and 6,200 tons of carbon dioxide (CO₂) emissions were prevented.

As impressive as these achievements are, they do not on their own achieve a net positive result, Freijo said. They do bring CHEP significantly closer to that goal, though, in two ways. By reducing their customers' footprint, the program enhances the impact of its restorative efforts. And by extending CHEP's reach well beyond what it could accomplish on its own, the collaborative program provides the kind of scale and scope Net Positive demands.

Collaborating within and across industries. As Nike's Wadia said, companies that want to transform their value chains also have to look beyond their suppliers. That's no easy task, especially when many potential partners are also potent competitors. A number of neutral third-party organizations have emerged to help foster such cross-company collaboration, offering services to attract participation and innovative opportunities for pre-competitive collaboration.

INDUSTRY-LEVEL FOCUS:

The Beauty and Personal Care (BPC) Sustainability Project. With demand for sustainable beauty and personal care products growing, many in the industry have done all they can on their own. The BPC Sustainability Project was launched by two global NGOs (Forum for the Future and the Sustainability Consortium) and two major retailers (Target and Walmart) to help the industry continue making progress through collaborative efforts.

Today, 18 industry players from across the value chain — including retailers, product manufacturers, chemical and fragrance suppliers, and NGOs — are working together to understand one another's perspectives, identify shared goals and collaboratively tackle the barriers that stand between them and a financially and environmentally sustainable future. The group is currently focused on developing a set of common criteria that retailers will use to evaluate the sustainability characteristics of beauty and personal care products.

The Sustainable Apparel Coalition. In 2009, Walmart and Patagonia jointly invited leading global companies in the apparel industry to work collaboratively on an index all could use to measure the environmental impact of their products. Within a couple of years, the group had created the Higg Index, a suite of tools that enables brands, retailers, and facilities of all sizes to accurately track a company's or product's sustainability performance. Today, more than 10,000 manufacturers use the Higg Index and the coalition's membership now includes companies in the apparel, footwear and textile industry with combined revenues exceeding \$500 billion.

CROSS-INDUSTRY COOPERATION:

The Sustainability Consortium (TSC) is dedicated to improving the sustainability of consumer products, which account for more than 60% of all greenhouse gas emissions, 80% of water usage, and two-thirds of tropical forest loss globally. Its 100-plus members represent 25 different industries and include manufacturers, retailers, suppliers, service providers, NGOs, civil society organizations, governmental agencies and academics.

TSC has developed a measurement and reporting system that offers retailers and suppliers simple tools they can use to drive improvements across supply chains and numerous other tools and services, which together help create impact at scale.

The Circular Economy 100 (CE100). In describing The Ellen MacArthur Foundation's New Plastics Economy, Joe Murphy, CE100 lead, said "We need to look not just at packaging itself, but at the whole value chain around it — the materials involved, how packaging is designed and made, and what happens to it once it has been used. To solve the plastics crisis, it's completely necessary to see it that way, and we do." Defined this way, CE100 is, in fact, committed to the same goals as the Net Positive Project.

Launched in 2013 by the Ellen MacArthur Foundation, CE100 brings together industry-leading corporations, emerging innovators, affiliate networks, government authorities, as well as regions and cities to network, build capabilities and collaborate on initiatives that they could not undertake in isolation. One ongoing initiative, The New Plastic Economy, has attracted participants including Amcor, Coca-Cola, Danone, Mars, Novamont, L'Oréal, PepsiCo, Unilever, Veolia, and other global corporations. "As you can see from this list, the entire value chain - and even direct competitors - are joining hands in the effort," said Murphy.

These are just a few of the collaborative efforts that are underway. Together, they represent a unique opportunity for the business community to turn things around, achieve net positive and, in the process, help create a truly sustainable future.



Four Principles for Creating Net Positive Supply Chains

“These four principles have been thoroughly road tested, and businesses are finding them useful.”

—SALLY UREN, CEO, Forum for the Future

The concept of a net positive supply chain is relatively straightforward: When the system’s impacts (good and bad) are added up, the net result benefits the environment, society and the companies involved. Putting the concept into practice is another matter. Simply determining how much progress has been made is fraught with challenges, particularly when it comes to weighing the impact.

Members of the Net Positive Group (NPG) realized early on that this lack of clear metrics could discourage individuals and companies from joining the effort. “We came to the conclusion that Net Positive had the potential of becoming a throwaway marketing fluff term,” said John Pflueger, principal environmental strategist at Dell. “We

realized we had a limited window during which we could put some content and substance underneath it.”

Key to strengthening the movement’s legitimacy and credibility was developing a common language linked to a clear set of principles companies could embrace. A dozen principles were drafted, but soon boiled down to just four with clear applicability to what became known as the value chain:

- **Materiality:** Focusing on what matters most
- **Transparency:** Sharing progress openly and honestly
- **Systems thinking:** Influencing change across entire systems
- **Regeneration:** Creating long-term, sustained and absolute impact

“These four principles have been thoroughly road tested, and businesses are finding them useful,” said Sally Uren, CEO of Forum for the Future. “We ran workshops in the U.S. and the U.K. with organizations that had committed to Net Positive and other organizations that hadn’t yet really engaged. We asked them to use these protocols to

IKEA is zeroing in on ways to replace virgin plastics and metal with recycled and renewable materials wherever possible.

test existing strategies, and they actually found ways to strengthen them.”

THE FOUR PRINCIPLES UP CLOSE

Materiality is a term well-known in any boardroom. In accounting, it refers to activities that have a significant, measurable impact on a company’s financial performance. For a company aiming for Net Positive, materiality means focusing on those aspects of its operation and supply chain that are most likely to affect its ultimate success.

When Swedish retail giant IKEA looked into its environmental footprint, it realized that its supply chain was far more material to its sustainability efforts than its direct operations were. Only 30% of the company’s total emissions is under IKEA’s direct control. The rest, including 26 million tons of carbon dioxide, is generated by IKEA’s 1,000 suppliers worldwide.

After close analysis, IKEA concluded that the largest component of its supply chain footprint came from the extraction and processing of the raw materials used in its products and widely read catalog. The catalog was printed in an edition of 203 million for 2017, a volume that gives a sense of its potential climate impact.

With the help of Quantis, an independent company that works to identify “hotspots” in the supply chain, IKEA took its analysis still further. Although wood is the basis for 60% of the materials used in the company’s products, IKEA found that the material accounted for just 23% of the company’s climate impact. Plastics and metals are used far less, but they account for 40% of the footprint. Based on this analysis, IKEA is focusing on what is most material to its use of raw materials. And it is zeroing in on ways to replace virgin plastics and metal with recycled and renewable materials wherever possible.

Transparency. To move toward Net Positive, and avoid mistakes others have already made, companies need to learn from each other about what works and what doesn’t. Sharing both successes and failures is a critical part of what is meant by transparency. To be genuinely useful, this information has to be consistent, authentic and, if possible, independently verified.



Such open and honest sharing is something that corporations –concerned about protecting trade secrets – haven’t always done. But a few net positive pioneers are showing the way:

Levi’s. Ethical Consumer’s Fashion Revolution magazine ranked companies according to their openness on supply chain issues. Its number one transparency scorer, at 77%, was jeans maker Levi Strauss & Company. The average score was just 42%.

The Crown Estate. The Crown Estate, which manages the monarchy’s property in Great Britain, has been a leader in transparency. The company established 60 specific performance indicators and currently reports honestly and openly on the 35 indicators for which it has reliable data and established baselines (assessed by independent consultant PwC).

The Crown Estate is guided by three transparency principles.

- 1. Credit:** To clarify who is responsible for what, the company groups activities under three headings:
 - Direct activities are those it carries out itself
 - Indirect activities are those it commissions and those carried out by its suppliers
 - Enabled activities are those carried out by the customers that lease Crown Estate land and property
- 2. Confidence:** Crown Estate has introduced a systematic internal confidence scoring system and an independently produced report on the maturity of its data and overall approach.
- 3. Contribution:** The company includes both positive and negative indicators (such as greenhouse gas emissions and greenhouse gas emissions avoided) in its detailed financial analysis of adjusted Gross Value Added (aGVA).



With the help of big data analytics, BXB can then help customers generate innovative, collaborative solutions that might otherwise go unrecognized.

Systems thinking. Attempts to forge net positive supply chains are most effective when companies take a holistic view, evaluating how actions at any point impact the entire system. Otherwise, gains in one area can be undone or even reversed by losses caused at another link in the chain, and system-wide opportunities can go unnoticed.

To encourage systems thinking, Uren suggests a new way of conceptualizing supply chains. “Rather than thinking of supply chains in the traditional linear configuration, with materials moving from point of production to point of use,” she said, “it’s important to re-conceptualize supply chains as value networks.” Viewed in this light, the metaphor of a rigid chain is replaced by a dynamic web of interacting players. Instead of focusing on isolated actions at various steps that may or may not add up to a Net Positive, companies that take a system-wide approach analyze the whole process, identifying key leverage points where modest shifts can produce major changes.

Joe Murphy, CE100 lead at the Ellen MacArthur Foundation, shares Uren’s enthusiasm for “whole systems” thinking. In describing The Ellen MacArthur Foundation’s New Plastics Economy, a three-year initiative on Plastics packaging in the supply chain, Murphy said, “We need to look at not just packaging, but the whole value chain behind that packaging — the natural and/or synthetic fibers involved, how they are processed, how they are assembled into the package and what happens to all the materials at the end of the use cycle. It’s completely necessary to see it that way, and we have.”

BXB Digital, a Brambles start-up company, is harnessing the Internet of Things (IoT) to offer customers this kind of holistic view in real time. By equipping CHEP pallets and containers with IoT sensors, BXB allows users to monitor materials and products as they move throughout the supply chain. The sensors also allow customers to track the condition of goods, including perishables, at every stage in their journey, dramatically reducing waste and improving quality.

Using the BXB platform, users can analyze the supply chain as a whole, identifying those key leverage points Uren described — including previously hidden bottlenecks and hotspots — “where modest shifts can produce major changes.” With the help of big data analytics, BXB can then help customers generate innovative, collaborative solutions that might otherwise go unrecognized.

Pioneering companies like SKF, a \$9 billion manufacturer of industrial bearings, are also taking a holistic path towards Net Positive. The company’s climate strategy focuses on reducing CO2 emissions throughout its value chain. By 2025, SKF aims to reduce CO2 emissions from its own operations by 40%. But that is just one of four climate-related goals. The others focus on the other key portions of its value chain: suppliers, transportation and customers.

- The company has committed itself to reducing emissions generated by its energy-intensive suppliers, especially the steel companies from which it purchases approximately 85% of its raw materials and components.
- Only 1.5% of SKF’s products are transported by air, but air freight represents the greatest share of transportation-related CO2 emissions (roughly 100,000 metric tons per year). SKF has set the same goal for this part of its value chain as it has for its own operations: a 40% reduction in CO2 emissions by 2025.
- Of all the opportunities SKF has identified for reducing CO2 emissions, the largest by far is the use of its products in such customer applications as renewable energy, electric vehicles, the recycling industry and bearings remanufacturing. By supporting its customers’ efforts to reduce emissions, SKF is working to significantly grow this portion of its business.

Another example of systemic change comes from nutritious snack provider Clif Bar & Company, which began tracking its supplier greenhouse gas emissions as early as 2002, when information was difficult to come by. A year later, the company not only began publicly disclosing its own greenhouse emissions, but pledged to offset them 100%.

The next step was the supply chain. Clif Bar set a goal of having 50 of its supplier facilities run on 50% renewable energy by 2020. And the company made it easier for the value chain by hiring (at its own expense) independent energy experts to act as supplier consultants to help ease the transition to renewable power. Some 90% of the suppliers that have used the free consulting services have either made a clean power commitment or are working toward that goal.

Regeneration is at the core of Net Positive. The idea is as simple as it is transformative: Companies must find profitable ways to restore more to the environment and society than they take out, especially when the resources involved are critical to their survival.

The Coca-Cola Company learned the hard way just how vital water was to its operations in 2004, when the Indian state of Kerala shut down a Coke bottling plant following charges that it was depleting water resources. The company itself closed a northern India plant in 2016 after similar complaints.

Since that time, Coca-Cola has focused intensely on its water stewardship efforts. In an effort to achieve water neutrality by 2020, the company focused on

- **Improving** overall water-use efficiency;
- **Managing** waste and storm water discharge from its plants;
- **Mitigating** risk by partnering with NGOs, governments and communities to work on relieving long-term water stress;
- **Replenishing** an amount of water equal to that used by the plants and returning it to the communities affected.

The effort paid off, although some activists remain critical. In 2016, Coca-Cola chairman Muhtar Kent announced that the company had met its major water goal — replenishing the same amount of water it uses in operations — four years early. Coca-Cola then had 248 community water partnerships in 71 countries. Kent said, however, “We are keenly aware that our water stewardship work is unfinished and remain focused on exploring next steps to advance our water programs and performance.”

According to the company’s own “Quantifying Replenish Benefits” report, issued in 2017, Community Water Partnership (CWP) efforts were providing an annual benefit of 221.7 billion liters (58.5 billion gallons) per year, representing 133.1% of the 166.5 billion liters (43.9 billion gallons) per year sales volume generated by all company facilities. The company’s water use was audited by LimnoTech and Deloitte, and conducted in association with The Nature Conservancy.

At computer maker Dell, regenerative thinking includes working closely with customers. “Our biggest opportunity in the space is to look at how our customers use technology to solve environmental and social problems, and help them do that more efficiently,” said Dell principal environmental strategist John Pflueger. “That was part of our epiphany back in 2012. If we don’t look at and understand everything that is happening in our value chain, we’re just giving lip service to the issue.”

No one approach will ensure the success of the net positive movement, but companies guided by the four principles of materiality, transparency, systems thinking and regeneration are making steady progress.

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Net Positive Supply Chains: How far have we gone? How much further do we need to go?

“In 2015, there was a definite shift away from managing risk to companies fundamentally rethinking how they could contribute value in society.”

—LINDSAY HOOPER, Cambridge Institute for Sustainability Leadership

No one knows exactly how many companies are committed to becoming net positive or how many non-governmental organizations (NGOs) are working to support their efforts, but it's safe to say the net positive movement has been gaining ground since 2015, when the United Nations launched its sustainable development goals. Coupled with the increasingly obvious effects of climate change, and the risks they pose for businesses, the UN goals helped kick corporate sustainability efforts into high gear, or at least a higher gear.

According to Lindsay Hooper of the Cambridge Institute for Sustainability Leadership, “In 2015, there was a definite shift away from managing risk to companies fundamentally rethinking how they could contribute value in society.”

Not everyone uses the term “net positive,” but a growing number of corporations have committed to moving in that direction, including such heavy hitters as Amazon, Coca-Cola, Google, AT&T, Johnson & Johnson and Levi Strauss & Co, among others. None of the companies is likely to reach its goal in the near future. Many are still working to understand the challenges they face, after which they'll start forging strategies to overcome them. But all are making progress — setting goals, developing and implementing plans, diligently tracking how they are doing, evaluating specific efforts and sharing their growing knowledge and expertise with others.

Both Forum for the Future and the Ellen MacArthur Foundation are developing valuable tools companies can use and assembling coalitions that can accomplish tasks no single company ever could. And important research that can advance Net Positive is proliferating.

Assessing where we are. In the absence of clearly established quantitative metrics, many companies are presenting case studies to demonstrate the progress they are making. At this early stage in the development of Net Positive, that seems a reasonable way to assess progress overall. No company has yet achieved net positive status — achieving it would be a true sustainability milestone — but many are concentrating on net positive as a goal, and have achieved remarkable interim results.

What follows are snapshots showing where two pioneering companies currently find themselves in their journeys towards Net Positive. Both include supply chains as important parts of the overall picture, because that is where the companies' greatest challenges and opportunities reside.

The Crown Estate is a \$17 billion commercial real-estate business that manages the holdings of the monarchy in Great Britain. The Estate owns considerable property in central London, including all of Regent Street and half of St. James, plus Windsor Great Park, more than 240,000 acres of farmland and forest, and the seabed out 12 miles.

As part of its commitment to becoming net positive, the company has established three “aspirations,” which as the term implies, offer direction and motivation without the specificity usually associated with measurable goals.

THE THREE ASPIRATIONS ARE THE FOLLOWING:

- To be climate resilient by 2030, with portfolio decarbonization and effective climate change adaptation in place
- By 2030, to be creating healthy places where customers, employees, communities and natural habitats can thrive
- By 2030, to have closed the waste loop using circular economy principles

The Crown Estate measures its progress towards these aspirations both at a company-wide or systems level and in terms of interim shorter-term goals. For the former, the company developed a methodology to measure the value of its various capitals — financial, physical and natural resources, as well as people, know-how and networks. According to a companion document to its annual report, “This [methodology] plays a vital role by providing us with a deeper understanding of both our positive and negative impacts throughout the value chain.”

The Crown Estate has also developed specific interim targets for 2022 and 2030, to measure its progress towards its long-term aspirations. At a still more granular level, the company sets annual targets. In terms of waste, for instance, the targets for 2016/17 were zero



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operational waste to landfill (where the company had control) and 90% reuse or recycling of nonhazardous waste from all new building and major refurbishment projects overseen by the development team.

To help achieve these targets, the company has focused primarily on its suppliers, which it defines as the managing and facility agents in charge of individual buildings, and the architects, builders, engineers and others Crown Estate hires to develop new projects. The second group is where the company saw the greatest opportunity. According to Claudine Blamey, head of sustainability and stewardship at the Crown Estate, “We have our greatest impact in development projects, where we think about how to design things so we cut waste out in the first place. And if we do have waste, we find people it has value for so it doesn’t even enter the waste stream.”

The company has also been working to increase diversion rates and improve efficiency among customers renting commercial space, a group that includes major retailers like Marks & Spencer, Burberry and Apple, as well as local banks and smaller concerns. By consolidating waste and recycling services for these customers, the Crown Estate



Unilever says that it is technically possible for all of the world's plastic packaging to be reused or recycled.

has not only fostered responsible waste and recycling efforts on a broad scale, it has also reduced truck traffic related to trash collection and recycling by 80%. And the trucks that are on the street are all electric vehicles.

As a result of these and other efforts, the Crown Estate hit its first waste-related target, diverting 100% of waste from landfill across its portfolio, and surpassed its second target by reusing or recycling 95% of non-hazardous waste (including construction, demolition and excavation waste).

Unilever specifically cites circular economy goals in its campaign to rethink plastic packaging. The company cites some startling statistics:

- Every minute, the equivalent of a garbage truck's worth of plastic is leaked into streams and rivers, ultimately ending up in the ocean. An estimated 8 million tons of plastic enters the world's oceans annually.
- Approximately 100 million marine animals die every year because of discarded plastic, and a huge plastic gyre the size of Texas (the conservative estimate) or Russia (the liberal estimate) has formed in the central North Pacific Ocean.
- Only 14% of the plastic packaging used around the world every year gets recycled. A third is abandoned in fragile ecosystems, and 40% goes to landfills.

Unilever's goal since early 2017 is that 100% of its plastic packaging will be designed to be fully reusable, recyclable or compostable by 2025. As part of that commitment — and to stimulate a recycling market that has waxed and waned — the company will also switch to at least 25% recycled content in its packaging by the same year. Previously declared targets, by 2020, include a reduction of packaging weight by a third, and a 50% cut in the waste associated with product disposal.

The world has produced more than nine billion tons of plastic since 1950, according to a study from the University of California, Santa Barbara, the University of Georgia, and the Sea Education Association. Unilever says that it is technically possible for all of the world's plastic packaging to be reused or recycled. But for that to happen, proven models for profitable commercial plastic reprocessing have to be demonstrated.

To that end, Unilever is working with the Ellen MacArthur Foundation, the Global Plastics Protocol, and governments around the world on circular economy initiatives. It's exploring design for disassembly and reassembly, modular packaging, refills, and innovative uses for post-consumer recycled material.

Unilever is among 40 companies working with Ellen MacArthur and the Waste and Resources Programme of the UK Plastics Pact, which commits signatories to major improvements in their use of plastic packaging, including use of recycled content. The company also joined CEFLEX, a European initiative with 60 corporate sponsors that is advancing new designs for packaging that promote the circular economy.

THE COMPANY RELEASED THE FOLLOWING RESULTS:

- With thinner polyethylene layers, strong polymers and smart designs, Unilever reduced polymer use by 1,400 tons in 2017.
- Foamed layers in plastic bottle walls resulted in a 15% reduction in plastic use per bottle.
- A new U.S. cosmetic range uses plastic bottles that are made with 100% recycled material, and are also 100% recyclable. The company used 4,850 tons of post-consumer recycled plastic in its plastics packaging in 2017.

“We know it is time for us to step up our ambition again. To look beyond 2020 to the Unilever of the future.”

—UNILEVER

- Teabags for producers in Poland, Canada and Indonesia are now being produced from plant-based material such as corn starch, and can be composted.

In Indonesia, Unilever is working with 18 communities through its foundation to collect inorganic waste and sell it, with the proceeds being kept in community waste banks. In 2017, 2,615 waste banks with 344,000 members collected 6,125 tons of packaging waste, with a value of 8.4 billion IDR (\$580,000). Since 2012, 17,893 tons worth 23.44 billion IDR (\$1.6 million) have been collected.

Unilever has taken great strides in its efforts to reduce and eventually eliminate waste. Like others committed to net positive, it will have to go still further to move beyond “less bad” and start meaningfully restoring and regenerating the resources we all depend on. As the company acknowledges on its website, “We know it is time for us to step up our ambition again. To look beyond 2020 to the Unilever of the future.”

Special Report

A Revolution in the Making: The Quest for Net Positive Supply Chains



A Brambles Company

About CHEP

CHEP helps move more goods to more people, in more places than any other organization on earth. Its pallets, crates and containers form the invisible backbone of the global supply chain and the world's biggest brands trust us to help them transport their goods more efficiently, sustainably and safely. As pioneers of the sharing economy, CHEP created one of the world's most sustainable logistics businesses through the share and reuse of its platforms under a model known as 'pooling'. CHEP primarily serves the fast-moving consumer goods (e.g. dry food, grocery, and health and personal care), fresh produce, beverage, retail and general manufacturing industries. CHEP employs approximately 11,000 people and owns approximately 300 million pallets, crates and containers through a network of more than 750 service centers, supporting more than 500,000 customer touch-points for global brands such as Procter & Gamble, Kellogg's and Nestlé. CHEP is part of the Brambles Group and operates in more than 55 countries with its largest operations in North America and Western Europe.

For more information, visit the company's website at www.chep.com or follow us on Twitter @CHEPna and LinkedIn. Please also check out our YouTube channel.



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