How closing the supply chain loop opens the door to long-term value

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A circular economy takes aim at the existing “take-make-waste” business model, creating long-term value for stakeholders and the environment.

Today’s linear economy of “take-make-use-dispose” has led to our throwaway society, where product life cycles are short, and replacement is often cheaper than reuse or repair. While efforts to recycle can generate good feelings, that alone won’t make a dent in the amount of nonrenewable natural resources consumed and discarded.

Businesses should take another approach — one that closes the loop of a product life cycle, replacing disposition with collect and reuse. In a circular economy, economic growth is decoupled from material consumption. Value chain members take ownership of their products and services throughout their supply chains, designing strategies to bring resources full circle for reuse without quality degradation — and with an aim of zero waste.

The circular economy is not just positive for the environment. Businesses that have embraced the model are benefitting through cost and tax reduction, energy savings, valuations, and favorable consumer and investor goodwill toward their brands.

The circular economy and supply chains

Considerable attention has been placed on sustainability, a business priority for the past 20 years as natural resources become increasingly scarce and carbon emissions rise. The main difference between circular economy and traditional sustainability efforts is that the circular economy is not trying to reduce a negative footprint, but rather create a positive one. Among the tenets of a circular economy:

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- Closing material loops in all stages of the supply chain

- Keeping products and materials in use for as long as possible with maximized quality and flexibility of use — as opposed to straight recycling
- Aiming for zero waste along the entire value chain
- Using and producing only nontoxic resources
- Using renewable energy in manufacturing and delivery

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Currently, the global economy is only 8.6% circular, meaning only 8.6% of the 100 billion tonnes of minerals, fossil fuels, metals and biomass that enter the economy are reused annually.[1] That means there are plenty of opportunities for businesses to embrace circular strategies to reduce material consumption, which in turn reduces carbon emissions — it's estimated that the circular economy has the potential to cut emissions by 39%.[1]

While circular economy initiatives are more widespread outside of the United States, American companies are increasingly getting on board. Sixty-two percent of American companies have plans to move toward circularity, according to a 2019 survey of 300 executives.[2] Another 16% currently use circular strategies.

The most common circular approaches that affect supply chains include:

- Designing products that use fewer resources and are easy to disassemble for reuse
- Redesigning product packaging that encourages reuse rather than disposal
- Adopting incentive-driven take-back programs that return an end-of-life product to the original manufacturer or designated ecosystem partner, providing the resources needed for new products
- Repurposing recycled materials such as ocean plastic to make products more sustainable
- Dematerializing product offerings, such as using cloud-based software licensing instead of manufacturing and delivering hard copies to consumers

Company plans for circularity

%

of US companies have plans for circularity, per 2019 survey of 300 executives.

Circularity in action

The supply chain factors heavily in the following examples of circular thinking.

A recyclable carpet that cleans the air: In addition to offering a leasing option for its products, a European carpet company that embraced circularity a decade ago redesigned its products in two sustainable ways:

1. Ease of disassembly and recyclability without quality loss — Carpet tiles are designed to keep the products circulating in closed loops for years. In addition to recyclable fibers, the carpet backings can be recycled — a difficult task with traditional carpet. When a leased carpet wears out, the company replaces it, collecting the worn sections for recycling and reuse.
2. Improvement in air quality — Indoor air quality is often worse than the air outdoors due to concentration of fine-dust particles. One of the company's carpet lines is designed to trap these particles, resulting in eight times lower fine-dust concentration in the air than with hard floors and four times lower than standard carpet. The outcome creates a positive environmental impact rather than just reducing a negative footprint — one of the main goals of circular initiatives.

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A recyclable sneaker made from plastic bottles: One sneaker brand encourages its customers to return its sneakers for recycling by paying for their return shipping. Designed for easy disassembly, the shoes themselves are made from recycled plastic bottles, carbon neutral rubber and recycled yoga mat material. Customers are provided a prepaid shipping label to return the shoes and a credit toward their next pair. If

the shoes have life left in them, the company cleans and donates them. Otherwise, the materials are recycled for reuse.

Benefits of adopting a circular model

1. Long-term value for stakeholders

    Companies can no longer afford to focus solely on short-term financial performance geared to shareholders. Successful companies are shifting their attention to creating long-term value for all stakeholders, including customers, employees, suppliers, communities and investors. In fact, investors are increasingly scrutinizing companies' environmental, social and governance (ESG) efforts, including circular economy practices, in making investment decisions. Community activists, consumers and shareholders are also holding companies accountable for their sustainability actions — or inaction — increasing pressure on companies to adopt circular models.

2. Cost reduction

    The circular economy allows businesses to grow without using more resources, since material is always in flow. The fewer the resources needed, the lower the cost. Closed loop models can increase their profitability while sheltering them from resource price fluctuations.

3. Boost in sales

    Companies are embracing circular thinking to improve sales. One European automobile manufacturer says they will generate more than 1 billion euros from turning one of their factories into a recycling and repair center. And startups as diverse as rentals of baby clothing and maternity wear to consumer electronics are boosting revenues as subscription services for everyday items gain traction.

4. Regulatory compliance

    Regulatory action is one of the drivers of the circular economy; in fact, the circular economy is a building block of the European Green Deal, which forces companies to go circular in certain areas such as packaging, batteries and repairability of products, among others. Countries with circular economy legislation or guidelines include China, Japan, Canada, France, Germany, Finland, the Netherlands, UK and Scotland.

Building your supply chain for the circular economy

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Circular thinking demands a shift in company culture, as the traditional view of how a business operates and makes money is turned upside down. Circular models require a longer-term view and ample patience — sometimes cash flow might not be realized until the second iteration of a product when resources finally get reused.

For a circular strategy to work, all the ecosystem partners — including suppliers and manufacturing partners — must commit to the process. One of the biggest obstacles is bringing all the participants of a value chain together and having them act as one company. Often, it's a matter of "who goes first," as each supplier may feel they're in the wrong position in the value chain to launch the effort.

Then there's the added complexity of the supply chain. From start to restart, a circular supply chain is larger and much more complicated than a traditional linear model. Designs must account for durability and consistency to keep components in play longer and for ease of disassembly to efficiently reuse resources. Tracking all the parts of a product and their histories is necessary to determine which parts need to be replaced and when. Reverse logistics are an added link in the chain to make sure parts get returned to the original manufacturer for recycling or reuse.

Other supply chain implications to consider include:

- Who will certify that a product uses non-virgin materials?
- If a company runs short of a recycled product, will they delay delivery or fill the order with a product that uses fossil fuels?
- Where will repair or disassembly centers be located to minimize emissions generated from a product's return?
- Is there a clear plan to manage and cut carbon emissions in the supply chain?

Getting started

Circular economy advisors recommend business leaders start with something not too complex — perhaps a product that uses a raw material known to maintain quality upon recycling. The next step would be determining how the strategy can make a positive impact on the environment – not just reduce a negative impact. Thought must then be given to the product design, the business model, operating model, the use phase, partner ecosystem and the process for return.

Cultural transformation may be even harder to address than the business strategy. Leaders must promote a positive attitude of change to persuade employees and partners to rethink the way they do business. That means changes in all functions, including research and development, sales, purchasing and manufacturing. Finance considerations come into play when a company moves from a sales model to a leasing platform — traditional cash flows and key performance indicators will not work in a circular model.

Adopting a circular model is not an easy process that can happen overnight. It typically requires a multiyear transformation. While it is fine to start small with initial efforts, don't be afraid to move quickly and then to scale. There is much riding on the shift to a circular economy — start your planning now.

1. The Circularity Gap Report 2021 **CGR 2021 (circularity-gap.world)**
2. **How circular thinking could change US business models | ING WB**

Summary

The current "take–make–waste" model is being challenged. With internal and external pressures to consider, sustainability is no longer a nice-to-have, but a mandate. There is a huge opportunity to embrace circular supply chains, however, there are challenges ahead, including transforming company culture, designing for circular and creating new processes for "the return."

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