



From Linear to Circular: The Shift in Supply Chains



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The circular economy is a rapidly growing movement that aims to change how we think about resources, production, and consumption. It is a model that prioritizes the closed-loop system where waste and by-products are reused and recycled as inputs for new products and services, reducing waste and conserving resources (Ellen MacArthur Foundation, 2018). The circular economy offers a unique opportunity for companies to create value for themselves, for their customers, and for the environment (McKinsey & Company, 2020). This is an important approach, particularly in light of the world's growing material use (Figure 1).

In only 50 years, global use of materials has nearly quadrupled—outpacing population growth. In 1972, as the Club of Rome's report *Limits to Growth* was published, the world consumed 28.6 billion tonnes. By 2000, this had gone up to 54.9 billion tonnes, and as of 2019, it surpassed 100 billion tonnes.

The relationship between the circular economy and supply chains is critical, as the success of the circular economy depends on the efficiency and sustainability of supply chain operations. To maximize the benefits of the circular economy, companies must re-design their supply chains to focus on reducing waste, conserving resources, and maximizing resource use (WRI, 2019). This requires shifting from the traditional linear supply chain model to one that emphasizes collaboration, innovation, and closed-loop processes (McKinsey & Company, 2020).

The circular economy offers a wealth of opportunities for companies looking to improve sustainability, reduce costs, and create new business opportunities (Geyer, R. et al., 2017). To succeed in the circular economy,

companies must adopt a strategic and collaborative approach involving all actors in the supply chain and the commitment of organizations to invest in the necessary infrastructure and processes to make it a reality (WRI, 2019).

One company that has effectively integrated circular economy principles into its supply chain is Patagonia, the outdoor clothing and gear company. Patagonia has implemented a range of sustainability initiatives, including the use of recycled materials in its products, the repair and reuse of products, and the recycling of end-of-life products (Patagonia, 2020). These initiatives have reduced the environmental impact of Patagonia's operations and have created new business opportunities for the company (Patagonia, 2020).

While the implementation of the circular economy in supply chains presents several challenges, including the need for cooperation between different actors in the chain (WRI, 2019), the need for transparency in supply chains (United Nations Environment Programme, 2018), and the need to balance cost savings with sustainable procurement practices (McKinsey & Company, 2020), the benefits of the circular economy are significant.

Cost savings can be achieved by reducing waste, conserving resources, and improving supply chain efficiency (McKinsey & Company, 2020). The Ellen MacArthur Foundation estimates that the circular economy has the potential to save companies \$640 billion annually by 2030 and reduce greenhouse gas emissions by 28% (2018).

Reduced environmental impact can be achieved by reducing greenhouse gas emissions, water use, and