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The Role of Sustainable Packaging in Supply Chain Management

MAY 19, 2024 BY [RICK LEBLANC](#)



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Packaging is a vital element of consumer culture. Still, as we've moved towards sustainable living goals, it's become more noticeable how traditional packaging has left a trail of waste and pollution. Sustainable packaging is a new avenue that involves boosting efficiency, cutting

costs, and attracting environmentally aware customers. Below, we discuss sustainability's role in packaging and **supply chain management**.

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Sustainable Packaging in Supply Chain Management

Sustainable packaging isn't just about the box a product arrives in; it's about making smarter choices, reducing waste, and creating a healthier system from start to finish.

Beyond the Finished Products

In addition to a better end product, **sustainable packaging** also involves knowing where materials come from, how waste is managed, and whether a company is truly making good on their promises when it comes to sustainability goals.

Even though many companies claim they're on board with sustainable packaging, fewer of them are actually making the changes needed to meet their goals. A **survey by McKinsey & Company** found that while 75% of organizations have sustainable packaging commitments, only 30% of them are prepared enough to meet their regional requirements and internal goals. This signifies that we need to rethink how the packaging supply chain works. It's a tough road, but it's one that businesses need to travel to reach their net-zero emissions targets.

The Impact On Supply Chain Performance

Switching to sustainable packaging helps keep your entire supply chain running faster and smoother. Lighter, stronger packaging means you can fit larger quantities into each shipment, saving money on transportation costs. Efficient packaging designs may also reduce product damage during dispatch and delivery, improving your business's reliability and trust. Even in the warehouse, sustainable packaging can reduce waste and extend the shelf life of your products by slowing or even preventing deterioration.

Implementing Sustainable Packaging Material Solutions

Challenges in Material Selection

Shifting to sustainable packaging isn't always cheap, especially if you're a smaller business working with a tight budget. It's best to think of it as an investment; there might be upfront costs, but you're setting yourself up for long-term savings and more satisfied customers.

Improvements in Manufacturing Operations

Improving your manufacturing process helps you save money, but it also assists you in uncovering the environmental impact of your whole operation. This is where a life cycle assessment (LCA) comes in. This process involves analyzing the potential environmental impacts of your product or packaging during its life cycle, from raw materials to recycling bins. Having this knowledge demonstrates where you should be making the biggest changes, along with the associated costs.

During this analysis phase, it's vital to remember that collaboration is key. Your suppliers, manufacturers, and even shipping companies are all figuring out better, greener ways to change their operations. Collaborating with them means you can tap into the latest innovations before everyone else does, which keeps your manufacturing process sustainable for both the planet and your profits.

Closed-Loop Systems and Extended Producer Responsibility

Closed-loop recycling refers to a system in which packaging (and other materials) can be recycled indefinitely without degradation of their material properties. This method is key for reducing waste, but it costs money to build these systems, and that's where extended producer responsibility (EPR) comes in.

EPR laws are spreading worldwide, and they aim to hold companies accountable for their packaging decisions by making them responsible for the materials' end-of-life cycle. While this is a big change, it can encourage businesses to rethink their packaging strategy, whether it's through redesigns or using fewer raw materials in the manufacturing process. It can also drive unique product development, which ultimately gives you an edge over your competitors.

How Technology Aids Sustainable Packaging Materials

When driving sustainability, technological innovations allow businesses to save money, move faster, and shrink their environmental footprint all at the same time. Let's talk about two ways that these developments are changing things for the better:

Automation and AI

Automation and **artificial intelligence (AI)** are a few tools businesses can implement to ease operations and help them go greener. For example, imagine automation technology software that can not only perform repetitive tasks but actually learn and adapt. That's the power of hyper-automation, and it reduces errors and wasted materials.

AI and machine learning can be implemented to adapt to varying scenarios, such as alternate route planning, sourcing from suppliers, or, in terms of sustainability, prioritizing an organization's carbon footprint over factors such as cost. This can keep a business aligned with its sustainability goals while allowing it to respond to any disruptions swiftly and efficiently.

However, AI isn't just about efficiency; it's also about making smarter choices. Software that can predict what's going to sell can also predict what kind of packaging makes the most sense, considering factors like shipping costs and environmental impact. It might not build a decarbonized supply chain overnight, but it's a large step toward making every decision sustainable.

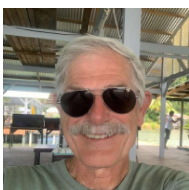
The Importance of Time Slot Management

In the supply chain industry, time is of the essence when it comes to deliveries. Disorganized loading docks, idling vehicles, and late shipments add up to lost time and money and create unnecessary pollution. This is where **time slot management** comes in to assist you.

This system allows customers to choose delivery times based on their availability and convenience. This goes a long way in planning daily (or hourly) dispatches and keeping customers happy and your deliveries efficient. When properly implemented, a time slot management system means less wasted time and a reduced carbon footprint.

Endnote

Sustainability can be a tough challenge for any business, but you should begin this journey by defining your goals and the impact you want to have. By embracing technology and staying focused on their mission, businesses can make their supply chains faster, cheaper, and greener and create sustainable packaging that benefits the business, the consumer, and the planet.



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