Industrial Ecology at Walmart

Bennett Cohen Originally published in Nikkei Ecology

In 1989, *Scientific American* published an article titled, "Strategies for Manufacturing," which included the question, "Why would not our industrial system behave like an ecosystem, where the wastes of a species may be resource to another species? Why would not the outputs of an industry be the inputs of another, thus reducing use of raw materials, pollution, and saving on waste treatment?"

The article, written by Robert Frosch and Nicholas E. Gallopoulos, popularized the idea of industrial ecology, now an established field of increasing relevance. Described by its practitioners as "the science of sustainability," the field combines elements of the natural, social, and engineering sciences to design and implement economic activities that are in balance with the greater ecological system of the planet. Industrial ecologists seek to transform industry—the manner in which humans use natural resources in the production of goods and services—into a sustainable system that enhances the natural resource base upon which it relies.

Back in July, Walmart made an announcement that author Daniel Coleman described as "setting off an ecological earthquake." Industrial ecologists will surely feel the tremors, as Walmart's requirement that its 100,000-plus suppliers disclose the ecological impacts of their products and operations creates a swell in demand for the life-cycle assessment (LCA) of more and more products.

LCA is one of the industrial ecologist's key tools. The goal of LCA is to understand the full range of environmental and social impacts created by the manufacturing, use, and disposal of a particular product. Walmart is collaborating with Arizona State University and the University of Arkansas to form a consortium that will collaborate with suppliers, retailers, NGOs and government to "develop a global database of information on the lifecycle of products." Walmart plans to let anyone use the database—that is, it's not just for Walmart.

Once the database is complete, Walmart plans to offer customers information on the ecological impacts of each product it sells. The information will be a simple, convenient, and easy to understand rating. The goal is to bring currently invisible environmental impacts to light. Presumably, customers will gravitate toward products with a better score on the sustainability index, shifting demand toward more sustainable products, and spurring innovation.

Imagine deciding between two equally priced tubes of toothpaste. Today, you might choose one based on the attractiveness of the packaging. Soon you will be able to choose based on a sustainability score. Suppliers' efforts to attain high product scores will lead them to reduce carbon emissions, increase the use of renewable energy, reduce the use of hazardous materials, recycle more materials, and treat workers better.

As the world's largest public corporation in terms of revenue, Walmart has the power to fundamentally change the rules of business. The company's pioneering work on the sustainability index is a giant leap toward the industrial ecologists' quest to transform our linear industrial system into a cyclical ecosystem.

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