POPULAR SCIENCE ABSTRACT:

Why do companies struggle to put LCA into practice?

Environmental challenges have pushed sustainability to the top of organizational agendas worldwide. Companies face pressure to embed sustainable practices into their operations. Life Cycle Assessment (LCA), a methodology that maps the environmental impact of a product from production to disposal, has become crucial to address these demands. Yet for many companies, putting it into practice remains as much an organizational problem as a technical one.

We analyzed how Alfa Laval, a large manufacturing company with a wide and complex product portfolio, implements LCA across its different business units. To do this, we interviewed stakeholders across the organization, analyzed surveys, visited company sites, and reviewed internal documents.

What we found was a fragmented picture. Some units had mature LCA practices while others were just getting started. We used two frameworks to make sense of this: the Technology, Organization and Environment (TOE) framework, which helped us categorize factors such as customer demand into drivers and barriers, and a stepwise model that placed each unit at a different stage of LCA adoption.

The biggest obstacles we identified were data management, given the complexity and variety of products, and difficulties getting reliable environmental information from customers and suppliers.

Based on our findings, we recommended the company centralize data management, expand LCA training, and establish clear ownership roles so that responsibilities do not get lost. We also defined a general structure for a company-wide LCA guideline and tested it on a concrete packaging case to check whether it holds up in practice.

Overall, this project helped to understand the relevance of alignment within an organization, especially for sustainability initiatives such as LCA.