



## All Hands on Deck for the Circular Economy

**The key to achieving zero-waste is a systems approach where all stakeholders – including academics – work together to the same ends.**

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Suddenly, supply chains are in the spotlight. The practical details of how products arrive on supermarket shelves, for example, gained unwelcome relevance amid last year's wave of **panic buying** caused by Covid-19 disruption. At the same time, the environmental damage wrought by wasteful industrial processes came under intensifying criticism from consumers, civil society and regulators. Businesses have stepped up their search for "zero waste" or **circular economy solutions**.

You could say that **Luk Van Wassenhove**, INSEAD Emeritus Professor of Technology and Operations Management, has spent most of his 40-year career inadvertently preparing for this moment. A pioneer in sustainability research, Van Wassenhove worked closely with Xerox in the 1990s as it became one of the first companies to remanufacture and sell a new "green line" of copying machines.

Over the past three decades he has helped dozens of companies across a multitude of sectors to recycle, redesign, integrate, reuse and resell refurbished or remanufactured products.

Van Wassenhove's work developing closed-loop

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supply chains (CLSC) underpins many of the concepts at the heart of today's circular economy. His insights played a central role in the passing of workable amendments to the European Union's WEEE Directive, which imposes responsibility for the proper handling and recycling of electrical and electronic products onto producers. Through his work with the International Red Cross and other top aid agencies, he is widely thought to have played a leading part in professionalising the humanitarian logistics sector.

The widespread influence of Van Wassenhove's research (nearly 50,000 academic citations and counting) has led to him being ranked among the **top 2 percent of global scientists** in a Stanford study.

His methods invert the conventional research paradigm, in which academics form independent hypotheses then trot off to test them, either in the lab or through fieldwork. He believes that to move the needle in an area as complex as supply chains, researchers must work hand-in-hand with the stakeholders – read: corporates – for whom these issues are actual, not academic. It's all in service of an **alternative vision** of what his profession could be. Van Wassenhove cautions his colleagues against becoming an "armchair academic" working on manufactured problems when there are so many

urgent ones waiting to be solved.

In a 2019 interview for the **INSEAD Knowledge podcast**, Van Wassenhove explained, “[The circular economy] is a matter of survival. The way we are using the resources that the planet can deliver is just not sustainable ... But the thing is, how do we change behaviours of people, and how do we help companies transition from where they are now to a situation that is different, and perhaps in their perception, very risky?”

His approach is grounded in the basic truth that “companies need to make money. They’re not missionaries, they’re not there to change the world. But they can (and will) if it makes them prosper.”

### **Piloting solutions**

While the profit motive is well-nigh universal for corporates, the challenges posed by the circular economy are anything but. For instance, companies may experience legal or cash-flow hurdles in pivoting from standard transfer-of-ownership sales to a leasing-based business model that allows products to be recaptured and resold – one of many possible pathways into circularity.

Customer behaviour, too, can be a stubborn obstacle. “We did some research where we asked people, ‘Suppose you can buy a washing machine or you can lease a washing machine that is used but looks like new and has been completely refurbished’”, Van Wassenhove recounted on the podcast. “There’s about 30 to 40 percent of people who would never want to lease. Pride of ownership is a strong behavioural thing. No matter what the price is, they want to own their washing machine. It’s like they’re in love with their washing machine.”

To manage these messy, convoluted challenges, companies require what Van Wassenhove calls “context-dependent new knowledge”, academic insights tailored to the particularities of their business.

For example, Van Wassenhove was on the research team for **ResCoM**, a circular economy incubator of sorts funded by the EU. The ResCoM researchers launched pilot programmes in close collaboration with companies. One of Van Wassenhove’s partners was a white goods company that had drawn up an overly optimistic roadmap for reconciling circularity and profitability. Unrealistically high lease rates, and a failure to factor in maintenance and reverse logistics costs meant that the company was in for a rude awakening should its plan come to fruition.

Van Wassenhove’s team – deploying algebraic models developed from earlier theoretical work – **successfully convinced executives to change**

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**course**, after showing that neither the consumer nor the professional version of their current line of washing machines could turn a profit through leasing. In the end, the company opted to engineer a machine designed for leasing that combined the durability of the professional version with the decomposability required for easy remanufacturing. The academics also prevailed upon the executives to acquire additional leasing expertise through strategic partnerships, as well as financial cushioning to see them through the low-cash-flow period of transition to the new business model.

### **Corporate partnerships**

Collaborating with corporates calls for humility on the part of academics as well. This isn’t always easy, since a primary reason for entering academia in the first place is to avoid the perceived evils of the business world. Shedding that prejudice is the first step to establishing trusting partnerships with industry.

Van Wassenhove advises that they should not approach managers **like a hammer in search of a nail**. Instead, they should start by listening closely and asking questions. At the same time, they should keep their scepticism intact. The managerial view should always be cross-checked with the frontline workers who are closest to the process in question. Standards of academic rigour demand that researchers and their doctoral students not accept company-provided data as gospel. Van Wassenhove urges them to do their own legwork whenever possible.

### **A systematic approach**

According to Van Wassenhove, the key to reducing waste on a scale that has real impact on the world is by taking a systems approach where academia, industry, regulators, customers, suppliers and NGOs work together at the same time to the same ends.

It requires a legislative framework that provides business with stability, reduces risk and encourages investments. A company will need to look at changing business models, the partners it works with, its approach to market, its competition, product design, operations, financial markets and incentive systems.

“Unless you look at it as a total system, at all the components of the system fitting together, it’s going to be very difficult to make a very big difference”, Van Wassenhove said. “There are strong behavioural issues that need to be addressed. A lot of work and effort needs to be done to educate the people, to make it easier, to make it more interesting and to give them alternative solutions.”

**Luk Van Wassenhove** is an Emeritus Professor of Technology and Operations Management and the Henry Ford Chaired Professor of Manufacturing, Emeritus at INSEAD.

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