



The Circular Economy: From Enthusiasm to Realism

Circularity for circularity's sake is not the goal – sustainability is.

If you've been following the recent discourse about the circular economy, you may have detected a baffling contradiction. Business and government leaders increasingly agree on the pressing need to conserve the planet's resources by embracing a zero-tolerance attitude towards waste. Further, we're told that circularity represents an economic opportunity measured in the trillions of dollars. Yet according to the latest statistics, the global economy is not exactly moving ahead in the journey towards circularity – if anything, some argue that we're headed **in the opposite direction**.

Clearly, companies don't know where to start. But as business scholars specialising in technology and operations management (TOM), we're trained to begin by focusing on the constraints baked into individual companies' business models. This requires moving from the standard *market-based view* of the firm, which emphasises strategic positioning within an industry, to a *resource-based view* that ties performance to operational characteristics, core competencies and assets such as physical infrastructure. It is our firm conviction, informed and borne out by years of experience, that the angel of circularity lives in these down-to-earth details, not the ideals set down in strategic planning sessions.

A circularity strategy framework

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For the past few years, we have been working closely with companies – both inside and outside the classroom – to apply the resource-based view to their business. We have helped them identify their main circularity challenges and, by extension, the circularity strategy they would have to implement to have a chance at success. Many of our collaborations have spawned extensive case studies that address the unfortunate lack of classroom material covering circularity from the TOM perspective.[1] In time, we worked with enough firms to be able to detect patterns within their various circularity struggles. Investigating these patterns more deeply led us to develop a strategic framework for circularity, which we introduced in a feature article in *Harvard Business Review* earlier this year.

Our framework finds that there are three main factors that companies must navigate in transitioning from linear to circular business models: value, access and process. (We use the acronym “VAP” to denote all three.) Value – because the worth (perceived or otherwise) of a product or material will affect a company's ability to recapture or resell it. Access – because companies absolutely cannot “close the loop” if their output eludes their grasp after use, as when the reverse logistics involved are too expensive or difficult, or a competitive secondary market exists for the product, etc. Process – because circularity almost always entails

some repurposing of reclaimed material (e.g. dismantling e-waste to extract valuable minerals or reformulating old clothes into new garments), which is not always efficient, cost-effective or even possible.

Circularity challenges for individual firms

Applying the VAP framework to our existing crop of case studies reveals a number of important takeaways about where circularity stands for business and environmental sustainability.

First, devising the optimal circularity strategy on paper won't necessarily make it work in reality. In the case of "**Alpha Beverage Bottling Company**" (name changed to protect the multinational company's anonymity) in Malta, an executive wanted to establish a recycling plant for plastic bottles on the island, thereby allowing Alpha to close the loop locally rather than relying on other EU nations. He drew up four separate plans for recycling facilities powered by renewable energy. However, none of his plans projected profitability before the 20-year lifecycle of the recycling machinery elapsed.

Alpha's circularity strategy in Malta hinged upon access to rPET – reusable polymer used to produce bottles and other food and beverage packaging, as well as textiles. The substance was in high demand in Malta and broadly in continental Europe, with many companies in different industries bidding for access. Bottling companies were disadvantaged in the heavy competition for rPET as compared to textile makers, which enjoyed lower recycling costs due to less stringent recycling standards (and thus could afford to pay more for rPET). Therefore, difficulty of access was one of the key reasons Alpha's proposals failed to unlock enough business value from circularity to interest top executives.

Similarly, our forthcoming case study on Turkish denim manufacturer ORTA Anadolu tracks the challenges of incorporating circularity into the production of jeans. As we show, these challenges are so extensive – implicating value, access and process – as to make one wonder whether there can ever be such a thing as "clean jeans". Depositing used jeans for recycling runs counter to well-entrenched consumer habit. Plus, a robust infrastructure for collecting and returning jeans to manufacturers doesn't exist.

In addition, there is no effective technological process for recycling jeans at scale. The mechanical shredders used to recycle cotton produce low-quality fibers that fall far short of the durability customers have come to expect from jeans. Finally, consumers seem to like the "warm glow" that comes with wearing sustainable jeans, but don't see

enough value in it to justify a higher price point. As the protagonist of our case study bemoans, "Customers (i.e. apparel producers) want a sustainable future but push us to charge them the same price. This doesn't cover the 'true' cost."

Intra-industry partnerships and business model change

This brings us to our second insight. In contexts like plastic-bottle recycling in Malta and denim production, the VAP framework reveals serious stumbling blocks that are too overwhelming for companies to resolve on their own. If circularity is to be achievable at all, companies will have to set aside the market-based view of the firm and accept the necessity of collaborating with industry rivals.

ORTA, for example, joined the Ellen MacArthur Foundation's Jeans Redesign initiative, which provides guidelines for over 70 fashion brands, retailers and garment companies. Recently, Jeans Redesign started requiring member organisations to use at least five percent recycled textile in all their clothing. As part of the international "**Dutch Denim Deal**", ORTA has also committed to manufacture at least three million pairs of jeans using 20 percent post-consumer recycled materials.

EMMA Safety Footwear, the subject of **a pair of recent case studies**, introduced the world's first fully circular safety shoe in 2017 and has since redesigned its entire product range. But EMMA's inability to generate sufficient scale to drive profitability on its own – especially since its shoes were almost exclusively sold through dealers, restricting EMMA's access to end-of-life footwear – led to the formation of the Circular Footwear Alliance (CFA). The CFA consists of EMMA, circularity consulting company FBBasic and industry competitor Allshoes Safety Footwear. This alliance strives to improve access to used footwear to benefit from scale economies in reverse supply chains, allowing for more efficient reuse and recycling. Thanks to the increased volume afforded by the CFA, EMMA projects its zero-waste model may reach break-even in 2022, assuming CFA hits its goal of a quarter-million pairs of shoes recycled that year.

There's also the possibility that EMMA will change its business model by launching a shoe-as-a-service leasing system for its larger customers. This would guarantee access to the used shoes and allow for additional services to large accounts, but might ruffle feathers in a market whose incentives are currently firmly aligned with dealer relationships.

Aligning the supply chain: The system view

A perfect storm of VAP headwinds, as in the ORTA

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and EMMA examples, makes intra-industry competition a must. However, the variety of interests and incentives within supply chains can still place circularity out of reach. Hence, our third principle: *Circularity is not the goal; sustainability is.* The circular economy may be one vehicle to drastically reduce, if not eliminate, negative externalities in your industry. But easier and faster ways to get there may become viable once industries have started working together. The key is to establish trusting partnerships. Then, take a system view that encompasses all participants in the supply chain, their individual impact (positive and negative) and what they stand to gain or lose from any fundamental changes to the business model.

As an essential first step, industries should come to a consensus on what sustainability means in their context and how it can be measured and made transparent. For example, our case study on the **Sustainable Apparel Coalition** (SAC) describes the trade organisation's efforts to create a gold standard for assessing sustainability within an industry increasingly reliant on "fast fashion" and other resource-intensive modes of production. The SAC's **Higg Index** consists of three sets of tools – focused on products, facilities and brands – that use current data to determine strengths and weaknesses, as well as a roadmap for sustainability improvement.

For a more comprehensive analysis, assessment tools can be deployed in combination. For instance, ORTA Anadolu applied the Higg Index to chart future directions for improving the sustainability performance of its factories, in conjunction with a life cycle assessment giving a product-by-product picture of its environmental impact.

The burgeoning sector of sustainability assessment still has challenges to overcome. Our case study on global sustainability rating agency **EcoVadis** describes the complexities of establishing a single universal standard for companies across markets and industries. An advertising agency in London faces a vastly different risk portfolio than a chemical processing plant in Chengdu. By offering weighted criteria sensitive to size, geography and industry, EcoVadis aims to avoid the biases of other ESG-rating agencies shown to favour companies headquartered in Europe. In this way, the company hopes to earn more international credibility than competitors.

EcoVadis is a certified B-Corporation (*entreprise à mission*), a designation granted to companies with strong purpose-driven commitments. As a trade organisation, SAC lacks a similarly large staff of full-time analysts and thus leans more on verified self-assessments – which are potentially less trustworthy. As founding chairman Rick Ridgeway explains, "Let's try to create a vision here that actually would

allow for the dissolution of the organisation because it would have achieved its goal ... And that can only happen, I think, when government comes in and takes over the work and makes it official policy." This raises the question whether self-regulation within a sector is feasible for complex global supply chains.

Indeed, government intervention may be the best (or only) solution in some cases. Another recent **Harvard Business Review** article of ours (co-authored by Serasu Duran) calls for timely action from policymakers to prevent an imminent waste crisis in the solar industry, caused by customers prematurely discarding their existing panels for cheaper, more efficient models and insufficient recycling capacity. Where governments are unable to deliver, the sustainable-finance sector may step in to fund the construction of circularity infrastructure for innovative industries such as solar.

Business academics, especially in the TOM area, can also contribute to achieving sustainability through their close work with companies. At INSEAD, our objective is to help companies move to a resource-based and systemic view affording a realistic idea of their sustainability prospects. Research-based tools such as the VAP framework play an essential role in that effort as do the cases highlighting the challenges and opportunities of a transition to sustainable operations. The VAP framework and cases mentioned in this article are frequently used in our MBA Business Sustainability elective as well as in executive programmes.

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[1] The authors of this article would like to acknowledge the contribution of our colleague Andre Calmon, currently on leave at Georgia Tech, who co-authored the EMMA, EcoVadis and SAC cases and successfully redesigned and taught an earlier version of our MBA elective on Business Sustainability.

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