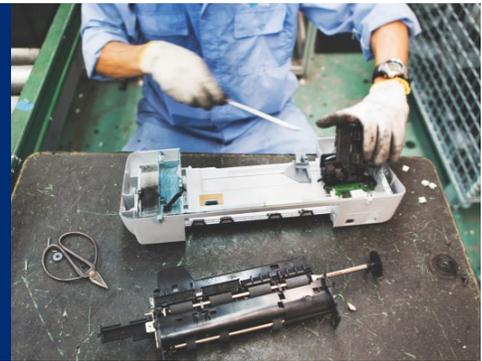




PRINTING AND PRODUCT DESIGN FOR THE CIRCULAR ECONOMY:

Three ways the environment and businesses can win with sustainability

by **Christoph Ruef**, VP& GM, Americas Printing Business, HP Inc.



Traditionally, sustainability and profitability have been at odds in the eyes of business leaders. The misconception has abounded that sustainable means of producing products are a business luxury that require an organization to upend profits in the name of process.

However, the [circular economy](#), in which products have the least possible environmental impact while yielding the longest possible economic value, is proving otherwise. Good business can coexist with practices that are good for the planet. In fact, today, it might be imperative for the survival of a brand.

When [Sustainia](#) surveyed 79 CEOs around the world, a resounding 96 percent of them agreed that the circular economy is important for the future success of their company. Only 18 percent, however, said they are currently succeeding in business model innovation.

Even as the benefits of the circular economy proliferate, a perceived risk looms heavily: Will long-standing business models that rely on “take, make and dispose” behavior find a new way to thrive economically?

In recent years, many brands have resoundingly proven the answer can be “yes.” Patagonia, for example, has doubled down on environmental initiatives while reportedly [quadrupling](#) its revenue during the past decade. According to [Accenture](#), the circular economy could create \$4.5 trillion in additional economic output by 2030. Today, far from being at odds with financials, companies must consider sustainability when designing and commercializing products.

At the recent World Economic Forum (WEF), this type of sustainability challenge was a cornerstone of the conversation. In fact, a [competition](#) led by Google Cloud, World Wildlife Fund, the UN and other partners was announced, imploring entrepreneurs to submit revenue-generating ideas that advance a circular economy.

A number of concepts play into this, including: full integration of recycled products into supply chains, increased use of service-based platform services and digitization of existing products. Taken all together, they comprise a significant — and promising — change to the way the consumer economy currently operates.

As the worldwide quest to enable a more sustainable economy accelerates, three factors will play essential roles in helping businesses, including the printing industry, navigate the circular economy without compromising their success.

Streamlining Products

A fully realized circular economy requires manufacturers to consider the recyclability of a product in the design process — not just when users are ready to discard products.

Many manufacturers are sharply reducing their use of non-recycled plastic and using recycled materials rather than virgin plastic. Taking that even one step further is [Charpak Ltd.](#), a UK-based packaging company. Having unveiled a fully realized circular economy initiative at Packaging Innovations in February, Charpak says more

than [99 percent](#) of its waste is either recycled, reused or composted. A first-of-its-kind for the UK, the newest product Charpak designed called “Twist-Loc” has the appeal of traditional, plastic food packaging but is fully reusable and multipurpose.

Product design is also shifting, in some cases, to use less material for longer-lasting products. In my own industry, for instance, we can build smaller printers with just as many features as larger devices while having a lesser material footprint. Printers, which until only a couple years ago were mostly made of virgin plastic, are now being made with a percentage of closed-loop, fully recycled plastic, and in some cases, 80 to 100 percent of printer cartridges are now recyclable.

The WEF once reported that [95 percent](#) of plastic packaging is discarded after a short first-use cycle — at a cost of \$80–120 billion annually. By rethinking product design, losses like this could be recuperated by businesses in the circular economy.

Reinventing Consumer Relationships

Traditionally, a company's relationship with its customers has been linear — a company identifies a need, produces a product, and then the customer buys it. The future of producer-consumer relationships presents a much more dynamic system. Within the framework of the circular economy, companies can engage with consumers not only by offering products, but also by inviting them into the business — the result of which can be increased trust and profitability.

Today, more than [87 percent](#) of consumers purchase products from companies that advocate for issues they care about, such as environmental protection. [Levi Strauss](#) capitalized on this trend by tying the circular economy into its sustainability initiatives. A few years ago, the company began asking customers to donate their old clothing and shoes to be repurposed into new fibers for clothing, cushioning material and more. Their efforts diverted 24 billion pounds of clothing, shoes and textiles away from American landfills. Levi's strategy speaks to gains beyond relationships and sustainability — it underscores the potential for massive savings.

By engaging customers and repurposing materials, at least [\\$700 billion](#) in savings is available in the global consumer goods market. Stores such as [Best Buy](#) have in-store recycling programs where devices, including printers, can be recycled in exchange for discounts. Similarly, [Staples](#) encourages customers to recycle toner and ink cartridges to get rewards. These kinds of initiatives help consumers feel closer to the brands they use, having played a role in its operations while simultaneously impacting positive environmental change.

When we redefine our consumer relationships with insight and engagement, the shift from a linear to circular business model becomes increasingly more possible and profitable.

Rethinking Materials

As we rethink our business models, it is necessary to rethink our materials. If products do not have the potential to be recycled, reused or repurposed, circular business models become increasingly difficult to adopt. Materials can facilitate this process — or halt it all together.

[AkzoNobel](#), a multinational company that creates paints and coatings, is tackling this challenge head-on by rethinking the components of its product and their eventual waste forms. Their paints are largely sourced from renewable raw materials in the production process to ensure their breakdown follows a sustainable and natural lifetime. The company also considers the material's externalities, or its effect on surrounding areas, to reduce water, air, soil and noise pollution. AkzoNobel's strategy aligns with [73 percent](#) of Millennials looking spend more money on products sourced from sustainable materials.

In the same way, HP has reimagined our supply chain and the materials that enter it — producing products that are sustainability-minded by design. For instance, today, [100 percent of our toner cartridges](#) contain recycled content. We have manufactured more than [3 billion ink and toner cartridges](#), using millions of pounds of recycled content material, enough to fill upwards of [5,000 tractor-trailer trucks](#), including more than [8.3 million](#) recycled plastic bottles.

The purchase of an authentic HP toner or ink cartridge is an empowered one, allowing consumers to actively yet easily participate in the circular economy. Cloned and counterfeited cartridges, on the other hand, pose insidious environmental risks. Not only do they [reduce page yield by up to 29 percent](#) — a direct financial impact on the consumer — but that extra printing can also use [40 percent](#) more energy and consume [54 percent](#) more fossil fuels. What appears to be a cost-saving measure can actually cost the consumer, and the environment, more in the long-run.

It goes without saying that the transition into the circular economy is challenging. But, if manufacturers begin to rethink the future of their materials and processes, the circular economy can prove successful. There are numerous ways to get there, from circular supplies to resource recovery to as-a-service models and more.

The printing industry has come a long way but still has a long way to go. As one of the fields targeted most by environmentalists, the need to act is imperative — not only for the health of our planet — but also for the longevity of our brands.