



Perfect CIRCLES

Everything that is possible demands to exist – Gottfried Leibniz, 1710. Some 300 years later, another German polymath revived this notion, unleashing to the world a new optimism that puts faith in humans as responsible advocates of a better way of making things. In this world there are no “bad” products, wastage or depletion of natural resources, only a logical circular effectiveness which makes constraint and efficiency redundant.

“Take the right for women to vote. Can you imagine 150 years ago people thought ‘women are not really human’. Compared to that we’re amazingly fast,” begins Professor Dr. Michael Braungart before hurtling into a breathless stream of consciousness on the emergence of a new wasteless industrial revolution.

Braungart is an environmental visionary and activist, author, chemist and philosophical optimist who appears to look with marvel at an evolving society more than capable of becoming sustainable – although he rejects the term, preferring instead to talk in more clear-cut terms of “good” versus “bad”. With his friend and colleague, the architect William McDonough, Braungart is transforming the landscape of design and industry through the Cradle to Cradle movement.

First uttered by Swiss architect Walter R. Stahel in the 1970s, Braungart and McDonough popularised the term in their 2002 book “Cradle to Cradle”. Now a global certification standard, C2C products are those that can either be reabsorbed into biological cycles or remade in technical cycles. Any product that doesn’t meet this criteria should become obsolete; they are “unmarketable”, say the duo.

**Charlotte Owen talks to
Dr. Michael Braungart, co-author
of the Hanover Principles, Cradle
to Cradle and The Upcycle**





The cherry tree

The C2C concept is rooted in a circular economy theory pioneered in the early 20th century by an American economist called Kenneth Ewart Boulding. Boulding coined the term “spaceship earth” to draw attention to economic limits of energy, material and the environment. This earth, he wrote, would operate a cyclical ecological system capable of continuous reproduction of material form without escaping having inputs of energy. Taking up the mantle, Braungart now compares this process to a cherry tree, shedding its flowers and fruit only to be absorbed back into the earth to provide nutrients. Waste doesn’t exist in nature, it is a human projection, believes Braungart.

Boulding’s vision is being realised, albeit in baby steps. From packaging to the products themselves, his ideas and Braungart and McDonough’s work now ripples through the retail sector. As retailers ramp up their sustainability strategies more C2C items are finding their way onto their shelves. While the movement has a long way to go, it is making significant progress, proving along the way that making

and stocking closed loop products can be profitable: “We can make stuff which is extremely profitable to society and which supports other species,” says Braungart. Braungart cites a 2012 report from the Ellen MacArthur Foundation which found that following proposed circular business models, Europe’s manufacturing sector could save \$630 billion in materials costs by as soon as 2025.

Profiting from sustainability

Braungart and McDonough’s vision is no pipedream, it is in motion and its theory is constantly backed by academic literature. “Sustainability is now widely accepted as a source – even the source – of revenue and business growth”, said a 2012 survey from UK management consultants, Accenture. The firm spoke to 250 senior executives across the UK, US, Japan, Germany, France, China, Brazil and India to explore the relationship between sustainable business and commercial growth. Just under half (49%) said profit margins were currently lower on sustainable products and services.

“While supply side factors may explain lower margins, so too may the perceived reticence of consumers to pay more for sustainable products and services,” states the report. However, it also found over half of the respondents “think that customers are not currently demanding sustainable products as much as they will in the future. Other data from the survey indicates that, on average, 34% of the customer base is expected by our respondents to demand more sustainable products and services in five years.”

The C2C mission could be given additional clout with backing by lawmakers. The UK government, for example, is making moves to ensure goods and services relating to the natural environment are assigned appropriate economic capital. On May 3 the government’s Natural Capital Committee published its first State of Natural Capital report which sets out a framework that aims to hardwire natural capital into economic decision making. In the foreword of the report Committee chair, Dieter Helm states: “Our economic prosperity and the wise use of our natural resources are not mutually exclusive. In fact, the latter is a precondition of the former...Economic growth must be sustainable – otherwise it will not be sustained.” The UK Department for Environment, Food and Rural Affairs, (Defra) in a 2011 report estimated £23bn a year could be saved by using resources – water, energy and natural materials – more efficiently.

Influence

While retailers are “not the limiting factor” for Braungart – they are “in the UK amazingly well-informed and positive” – some things are within their control. For starters, more should be done by the sector to make it easier for consumers to make the “right” purchasing decisions, he argues.

Retailers need to do more to promote “better” products, says Braungart. One way to do this would be to “highlight positive innovations in a one metre square showcase,” he suggests. While most retailers will have both bad and good products on their shelves, he believes it should be their duty to ensure that the most ethical ones are put to the forefront of their stores.

“Show one thing a month, for example a paper you can compost; a monthly C2C product which you could display in your store to show what the future looks like. Retailers have a responsibility to influence customers to make the right choice.” ➤



DA.AI Technology Co. Ltd (DA.AI), Taiwan's first non-profit product manufacturer, has made a blanket derived from dope dyed 100% post-consumer recycled polyester yarn. The Gray Eco Blanket's colour comes by adding colour chips in the spinning process instead of the traditional dyeing process. Each blanket is made from 68 recycled PET bottles, equivalent to reducing 1.7 kg of CO₂ emission, and saving 35.4 millilitres of oil and 6 litres of water. The recycled PET bottles used as the raw materials of blankets are collected, classified and cleaned by Tzu Chi Foundation's volunteers.

Braungart uses the example of lifestyle company Puma to illustrate this point. This year the company unveiled its first range of biodegradable products which it showcased in a glass tank at one of its flagship stores. Its "InCycle" collection is made from either recyclable or biodegradable materials creating a closed-loop process making it officially "100% Cradle-to-Cradle Basic certified". Puma selected biodegradable polymers, recycled polyester and organic cotton in order to eliminate pesticides, chemical fertilizers and other hazardous chemicals, it says.

While the ultimate goal for Braungart would be for retailers only to stock closed loop products, such as InCycle, he is realistic of the scale of the challenge. "Don't try to be perfect," he advises adding "small steps are better than none." "The more retailers stock and promote better products, the more consumers will buy and the more we will be profitable and the quicker we can change... The customer therefore becomes your change agent," he says.

The incentive is clear for Braungart. Far from having a negative effect on the companies implementing closed loop strategies; materials get cheaper, he believes. Between the first agreement between Braungart and McDonough's consultancy firm, MBDC, and the first collection it took nine months for the products of one company, Goodbaby, to be transformed into C2C, according to the Professor.

Moreover, stocking greener products can increase the value proposition for the consumer, he argues. This is especially true in the growing LOHAS (lifestyles of health and sustainability) market segment "where the preference is greener, healthier products," according to a report by sustainable management firm, Five Winds International. "Retailers that understand this growing consumer trend are either developing their own more sustainable private label brands or sourcing them from suppliers," it found.

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Be Green Packaging LLC designs, develops, manufactures and distributes tree-free entirely compostable food containers such as bowls, plates, clamshells, and trays for the food service, deli, vegetable, meat, fish, and poultry industries. The company currently distributes the Bulrush food containers in 37 states and the UK.

Be holistical

There is no point introducing a solution after the problem has been dealt; the solution must be created at the beginning of the production process with the materials used to create the product, argues Braungart. Manufacturers are "optimising the wrong things instead of asking what the right thing to do is," he says. If this isn't corrected, "we will mostly spend our time repairing things," argues Braungart. Condemning the UK's decision to build 100 new publically funded incineration plants, Braungart compares such tactics to "rearranging the deckchairs of the titanic."

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"We need long terms goals; it is not good enough to say 'we want to be 20% less bad in 2020'," according to Braungart. While the scale of the challenge may seem foreboding, for Braungart this should only create "endless innovation opportunities". C2C company Desso, for example, is now "the world's most profitable carpet company... When MBDC started working with them, it was just breaking even," he says.

More attention therefore needs to be paid to the broader picture, he believes. While plastic bag bans may seem positive, for Braungart they are largely insignificant: "The main source of plastic found in the ocean is the particulates that come from textiles in washing machines," states Braungart. Plastic bag bans are "alibi activities, mostly by governments to greenwash the public," he argues.

There is also a huge problem with regulation, according to Braungart. For example, while companies complying with legal limits for certain chemicals might seem positive, Braungart says this too is not good enough. For Braungart, it is unacceptable that a specific legal chemical limit in drinking water is not applied to a bottled drink. The most notorious example of this is Coca-

Cola's use of PET plastic for their bottles which "gives up to 20 times more antimony [a carcinogen] than it is legal in drinking water," according to Braungart.

"There's no excuse. People have been optimising the wrong things. Coca-Cola thinks: 'We don't need to fulfil drinking water legislation, we have FDA [Food and Drug Administration] approval for using the stuff'... Why change the process when it is legal? Heavily optimised wrong systems are the only problem we have," he concludes.

For Braungart, such examples underline the importance of retailers getting a better grip on their supply chains. It is, after all, up to the retailer what is stocked; if more is done, as suggested by Braungart, to promote green products and gradually phase-out bad ones, consumers will have a greater opportunity to make more ethical decisions which in turn should manipulate supply and demand. Greater consumption of "good" products will drive down prices and make green choices more and more competitive, potentially leaving no room for "bad" ones. Braungart and McDonough's dream may well lie within the hands of the retailers.

MBDC works with clients, including retailers, to look at their operational impacts as measured by greenhouse gas emissions, water quality and water use efficiency, ecosystem health and biodiversity, social responsibility and other indicators. It also assesses how it communicates its activities related to sustainability and how it compares with others in its sector. Another key aspect for the firm is measuring employee satisfaction. "How can an employee's input be collected and shared internally; what incentives, disincentives or training opportunities related to sustainability are available and how can employee involvement be used to achieve business and sustainability objectives commensurately," are all questions asked by the consultants.

Desso in 2008 embarked on a mission to make all of its products according to C2C principles by 2020. One of its suppliers, Aquafil has developed proprietary technology to recycle old Polyamide 6 yarn from used carpets into new material known as ECONYL over and over again. "Refinity" takes back old carpets (provided they don't contain PVC) and separates the yarn and other fibres from the backing. This creates two main material streams: the yarn which is sent back to its suppliers for recycling and the bitumen, which is sold to the road and roofing industry. All non-recyclable fractions are used as secondary fuel in the cement industry.

