

Walking in giant (barefoot) steps: how Professor Michael Braungart is radically redefining sustainability



Professor Michael Braungart is a radical scientist and professor at Leuphana University. Since working for Greenpeace International in the 1980s, Michael has been a leader in eco-effective research and education, notably creating the trademarked Cradle to Cradle concept that revolutionises product creation. Detailed in the 2002 book "Cradle to Cradle: Remaking the Way We Make Things," Michael advocates for a world where waste becomes obsolete and focuses not on minimising but transforming our human impact into a positive giant (shoeless) footprint.



Your pioneering ideas have been used across industries, not-for-profits, academic institutions, and governments. Can you briefly explain your Cradle to Cradle principles with an example?

The easiest way to think about it is that the Cradle to Cradle (C2C) design principles contrast with the current "cradle-to-grave" design model. That approach involves continually making products from limited natural resources, leading to landfill overload, resource depletion, and, eventually, resource extinction. It is the opposite of traditional sustainability. Cradle to Cradle is about making products that are good for this planet, not a little less bad. Traditionally, people think they're protecting the environment if they're destroying a little less.

It focuses on two types of products: those that get consumed and are changed by usage, like shoe soles, brake pads, or washing detergents, and those that are used for services like a TV set. The key is designing materials to remain in a continuous nutritious loop in either the biological or technical cycle, ensuring they're continuously reused and recycled at high quality.

What do you mean by keeping biological and technical nutrients within their own cycles?

It is crucial to segregate biological and technical nutrients to enable effective reusing of materials. Biological cycles involve natural fibres that can be turned into compost or a new product, such as a cardboard box. The technical cycle includes synthetic materials like electronics, metals, or plastics. These must be designed to retain their quality and be endlessly recycled into equally good products every time.

However, the biggest challenge is that most products are made without future cycling in mind, which must change. We must redesign products. Products with biological and

technical constituents can't be recycled in either category; sadly, they often end up as landfill.

What are your biggest concerns regarding certain products within the current industrial system?

Microplastics pose a significant challenge to the population and the environment. Current recycling practices fall short, and we need a substantial shift in business and industrial culture to drive innovation. It's all about how we can use 50 years of technological innovation to make products that are much better and benefit the environment.

In 1986 we coined the word sustainability, and we view that word as positive. But think of it like this: do you want your relationship with your partner to be simply sustainable? If so, I feel sorry for you. We want more than just to be sustainable. Designers play a pivotal role here, moving beyond simply beautifying things to designing differently. Additionally, we must develop the technology to capture CO2 emissions from production and use it to create new products.

How do you see your Cradle to Cradle design concepts evolving in the coming year?

I've been impressed by the Ellen MacArthur Foundation's efforts; it is doing some fantastic work, particularly with its Circular Economy 100 (CE100), a network of multinational businesses including Apple, the Coca-Cola Company, and Microsoft.

Regarding the European Green Deal, governments must focus less on extensive reporting on ESG matters and more on promoting innovation. We must motivate people to embrace shared usage of products, renting for services instead of owning them. To do this, we need to target the younger generation through digital platforms and incentivise and praise positive behaviours.

How do you differentiate Cradle to Cradle from a circular economy, and which industries do you see making progress in adopting these principles?

The circular economy concept, whilst beneficial, actually hinders innovation by continually repeating processes rather than focusing on improvement. Yes, we want to see elephants, tigers, oak trees, and whatever 5,000 years from now, but do we want to see the same office chair? Washing machine? Ownership has been a religion for so long; we need to rethink the whole idea of ownership, and this is a long-term goal. You don't need to own a washing machine; you just need its service – what it does.

Are there any notable companies taking your principles and concepts and doing them well?

There are already 16,000 certified Cradle to Cradle products on the market, and this number is increasing. Companies like NUVI, a German start-up, are merging design with innovation by creating scalable next-generation materials inspired by nature, bio-based, toxicity-free, and sustainable. Their high-quality materials are sourced from plants and minerals and can be used in fashion, footwear, home interiors, and packaging. These are the types of companies we need to be supporting.

With the European Green Deal, ESG has been pushed to the forefront of company and industry strategies. What policy changes would better support Cradle to Cradle practices?

Consumers can support Cradle to Cradle certified companies, with over 16,000 products available. The C2C process assesses five categories: material health, material utilisation, renewable energy and carbon management, water stewardship, and social fairness.

Policymakers should take the market economy seriously. Every regulation is a signal of design failure. We need more action and less reporting. For example, consultants are generating a lot of business to report on ESG matters for the European Commission; this needs to stop. When you spend money on extensive reports and money on people to do those extensive reports, you don't have money left to innovate and save the planet.

Instead of durability, we need defined use periods; for example, tyres now contain 470 highly poisonous chemicals when inhaled. Researchers believe that microplastics in the brain cause neurotoxicity, which can lead to behavioural changes and can cause calcifications in the heart. This is scary because these are everywhere: in all our waterways and the air we breathe. We analysed the river Thames, and 54% of the microplastics we found in it are from tyre abrasion. How can that be good for the biosphere, but it's out of sight, so out of mind? We need new formulas for tyres, but they now last twice as long as they did 30 years ago. Governments need to get involved and take care of the biosphere.

What's next for you and your foundation?

My focus is on education, particularly in engaging designers worldwide on their creations' environmental and health impacts. My new book, "Cradle to Cradle for Designers", will be published this year. It offers a systematic approach to inspire

design change. I envision a future where everything mirrors the cherry tree – which is beneficial in every way, providing oxygen, nutrition, and materials that go back into the biological system.

One of the C2C concepts is that everything needs to become a service, so it's using the best materials, not the cheapest ones and developing business models for that. Can you give an example of how it would work?

For example, an office needs chairs. The conventional method is to extract petroleum and metals from the earth, create, sell, transport, and use them for a few years; they break down and end up in a landfill. The C2C concept would have only five chair manufacturers that aren't selling chairs but are selling healthy sitting insurance, and after X years, you can get back 25% when you bring your chair back, which is then made into a new chair or they can offer 27 tons of a specific aluminium alloy to be used in something else. In this way, the manufacturer keeps control of the materials. There was never a glass window that was recycled back into a window.

What would you like to see happen in the next 12 months?

Firstly, the proposed climate change goals aren't good enough. We need to have the same concentration of greenhouse gases in the atmosphere in 2100 as in 1900. Our 1.5-degree goal for climate change will still kill this planet – but just a little slower. The next step is to decide that the only plastic used in Europe will be made from carbon dioxide from the atmosphere. We aim for zero emissions, but it can only be zero if we don't exist.

Finally, I dream that there will be no shoes in Europe in five years. The soles of shoes leave invisible but harmful footprints everywhere we go. So don't forget to kick off your shoes on June 1st for National Barefoot Day; personally, I wish to discard my toxic soles altogether. ■

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For more information on Professor Michael Braungart and the Cradle to Cradle design concept, contact Bettina Gereth: bgereth@clairfield.com.

