

An Initiative of



The Circulars 2016 Yearbook

Profiling the winners and best entries
from the awards

In collaboration with
Accenture Strategy

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Thank You

On behalf of the Young Global Leaders (YGL) Circular Economy Taskforce, we would like to extend our sincerest thanks to all those who participated in the second annual Circular Economy Awards, "The Circulars." The initiative was a huge success, with a fantastic array of over 200 entrants from across the globe showcasing their groundbreaking circular economy work. Entries ranged from innovative entrepreneurs to pioneering multinationals, and from cities pushing the boundaries in sustainability, to digitally disruptive enterprises and dedicated circular economy investors, not to mention a host of inspiring individuals from commerce and civil society, who have all made notable contributions to driving circular economy principles.

This Circulars 2016 Yearbook includes short case studies on all of The Circulars 2016 Winners, Runners Up, Finalists and Highly Commended entries. We hope you find the stories within encouraging, and that they signify we are well on our way to making the circular economy a reality.

Thank you to all who played a part in The Circulars 2016. You have truly set the standards high for The Circulars 2017.

Sincerely,

David, Ida, Peter & Rain
The YGL Circular Economy Taskforce Co-Chairs



A handwritten signature in black ink that reads "David Rosenberg".

David Rosenberg

CEO & Co-Founder
AeroFarms



A handwritten signature in black ink that reads "Ida Auken".

Ida Auken

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A handwritten signature in black ink that reads "Peter Lacy".

Peter Lacy

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A handwritten signature in black ink that reads "Rain Newton-Smith".

Rain Newton-Smith

Chief
Economist CBI

Award Categories

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The Fortune Award for Circular Economy Leadership

Award to honor an individual in business or the public sector who has demonstrated inspiration leadership in the journey towards a circular economy.

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The Accenture Award for Circular Economy Multinational

Award for an established organization, with global reach and over \$100 million in turnover, which is demonstrating innovation in its existing business.

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The Ecolab Award for Circular Economy Enterprise

Award for a small-to-medium sized organization, with between \$10 – 100 million in turnover, which is transforming its business towards the circular economy.

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The Young Global Leaders Award for Circular Economy Entrepreneur

Award for an early-stage organization, with under \$10 million in turnover, which is at the vanguard of the circular economy demonstrating innovation and market disruption. Entrants must demonstrate concrete proof of business model and scale/ability to expand.

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The Award for Circular Economy Governments, Cities & Regions

Award for the city/region, local or national government body/program, public procurement program, or public policy initiative which best enables an environment for the circular economy to develop and flourish.

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The Alliance Trust Award for Circular Economy Investor

Award for the investment body which is providing financial backing for the circular economy to become mainstream. Open to venture capital and private equity firms, sovereign wealth funds, pension plans, investment banks, and other entity or individuals who has invested at least \$15 million into circular businesses or businesses which are investing in the circular economy.

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The BT Award for Circular Economy Digital Disruptor

Award which recognizes an organization or public sector program that is disrupting business as usual by using digital technologies to enable the circular economy to flourish.

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The People's Choice Award

Award which recognizes the individual, public sector program or organization with the most inspiring circular economy story, as voted by the public.

onomy Multinational

Winners:

Ver

Laurent

Senior Executive President

Innovation





Laurent Auguste, Senior Executive Vice-President, Innovation and Markets, Veolia, accepts The Circulars Multinational Award, from Pierre Nanterme, Chairman & CEO, Accenture



The Fortune Award for Circular Economy Leadership

For individuals who have demonstrated inspirational leadership in the journey towards the circular economy



Feike Sijbesma

Feike Sijbesma is the CEO of Royal DSM, the Life Sciences and Materials Sciences company. He is actively and globally involved within health, nutrition and materials.

What was the circular economy challenge?

The challenge is actually not scarcity of resources itself. Given that there are (almost) no atoms/molecules leaving this planet, but they end up "as waste", mixed with other molecules and in different places. This is the problem, if we – however – can re-design the supply chain of our economy to re-use all those molecules then we have fewer scarce resources and we can all benefit. Therefore Feike's main aim is to position the circular economy in a broader context, redesigning our value chains, including, materials, agriculture and nutrition.

What was the circular economy solution?

To re-design the value chains of our economy to re-use our raw materials so that all, including next generations can all continue to benefit. This needs new alliances, cooperation and often new business models in which we switch from consumption to re-use. This is reflected in the way Royal DSM works. The company creates value in three dimensions simultaneously: societally, environmentally and economically. Or, in other words: People, Planet, Profit.

What was the impact?

Royal DSM is re-inventing itself over and over again. What started as a coal mining company in 1902 has transformed itself via a (bulk) chemical company, into the global science-focused organization it is today. There are many examples within Royal DSM of how Circular Thinking can lead to new products and new business models. One example, under Feike's leadership, Royal DSM opened the first-ever commercial scale factory converting agricultural residue into energy. Additionally, Royal DSM has launched groundbreaking technology that enables the creation of fully recyclable carpets, as well as new re-usable anti-reflective coatings for solar cells.

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Professor Dajian Zhu

Dajian Zhu is a distinguished Professor at the School of Economics and Management at Tongji University in Shanghai, China, where he is also the Vice Chairman of the University Academic Committee, and Director of the Institute of Governance for Sustainable Development.

winner

What was the circular economy challenge?

In the past thirty years, China experienced a high rate of economic growth with a high rate of resource consumption and waste generation. The challenge for China to enter the 21 century is how to decouple economic growth from environmental impact.

What was the circular economy solution?

Professor Zhu identified a gap in the environmental protection norms which solely focused on waste treatment at end-of-pipe. He introduced circular economy principles to China in 1998 and since then, Professor Zhu has been a thinker, advocate and speaker of this new economic model. He has been involved in policy consulting of China's circular economy and several key research projects, conducted by international organizations such as the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank.

What was the impact?

Professor Zhu's efforts focus not only on waste treatment but also on how to minimize and change the waste lifecycle, which combines eco-efficiency and eco-design. Thanks to his tireless determination, today the Chinese government is taking the lead in promoting circular economy and combining both top-down and bottom-up approaches with regard to waste improvement. These include the establishment of circular economy promoting law, embedding of circular economy into five years plans, implementation of pilot projects across both national and municipal levels, and the development of indicators for the circular economy. Globally, he is involved in the meta-council of the World Economic Forum and World Resource Forum, pushing the circular economy within the global green agenda through policy consulting and communication. Ultimately, Professor Zhu has effectively implemented this circular economy mentality in China and beyond.

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Estelle Brachlianoff

Estelle Brachlianoff is the current Senior Vice-President of Veolia for the UK and Ireland. Estelle's leadership has driven Veolia to shift from a service supplier to resource producer, taking the circular economy concept to the next level.

What was the circular economy challenge?

Due to the increasing global consumption of resources, Estelle understood the need to revise and reinvent Veolia's business model, while maintaining the core purpose of striving to achieve more.

What was the circular economy solution?

Under Estelle's leadership, Veolia launched its "resourcing the world" mission, and is currently recycling items that were previously hard to process such as street sweepings, old plastic carrier bags, and paper that was deemed un-recyclable. Estelle also led Veolia's circular economy initiative from the front with one of her key goals being to get customers and employees to act as ambassadors for the circular economy.

What was the impact?

Veolia has clearly undergone transformational change by adopting and ingraining the "circular" business model to the effect that 20 percent of its current turnover in the United Kingdom is derived from the circular economy with a plan to double this by 2020. Thanks to Estelle's efforts and vision, Veolia is now one of Britain's clear environmental leaders in helping to resource the world.

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Hermann Erdmann

Hermann Erdmann, an entrepreneur and businessman, is the current CEO of the Recycling and Economic Development Initiative of South Africa (REDISA).

finalist

What is the circular economy challenge?

In South Africa, over 40 percent of waste is dumped into the environment. REDISA estimates there are 60 million waste tyres lying in stockpiles across the country, many of which are illegal and unsafe. At the same time, over 25 percent of South Africa's population is unemployed.

What is the circular economy solution?

Hermann's interest in sustainable leadership and his drive to get senior management to focus more on environmental sustainability as a key part of company strategy, resulted in the establishment of REDISA and the development of the first approved Integrated Industry Waste Management Plan (IIWMP). His ambition to transform and empower disadvantaged individuals means that job creation around the collection, transportation, storage and recycling of waste tyres is a key part of the REDISA initiative.

What was the impact?

At the end of November 2015, 180 860 tons of waste tyres had been collected, 3 044 jobs created, and 114 719 tons of waste tyres had been processed into new products as a result of the REDISA programme. It is estimated that the IIWMP will generate another 10 000 income-generating opportunities for disadvantaged individuals.

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Thomas Rau

Thomas Rau is the Founder of RAU Architects, and circular economy experts Turntoo, two of the first companies dedicated to the circular economy.

What was the circular economy challenge?

Due to its scale the building industry is one of the biggest contributors to resource depletion in our current take-make-waste economy. Green building certifications continue to rise year on year, but they only optimize the current linear systems instead of transforming it to a circular system.

What was the circular economy solution?

From his extensive experience in realizing sustainable real estate, Thomas recognized that not only architecture but also the economy needs to be transformed. In 2010, he decided to form Turntoo and began talks with Royal Philips around a new circular business model: light as a service. By 2013 the first building as a material depot was created and "materials passports" were developed – which ensure developers know exactly how much steel, copper and other materials are used in a building. Thomas realized that combining circular business models and design for reconstruction with a materials passport would allow structures to be rebuilt and materials preserved more efficiently in the future.

What was the impact?

Thomas Rau focuses on transforming rather than optimizing systems. He has just concluded the development of a 25,000 square meter building in which 80 percent of the materials are circular. At the same time, Thomas delivers over 50 lectures across Europe annually to share his knowledge of the circular economy and assists organizations with the transition towards circular business models. In conjunction with Philips, Thomas is currently working to introduce lighting as a service across the world within the next five years.

 Sabine Oberhuber

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Else Bos

Else Bos is the current CEO of PGGM, the leading pension fund service provider in the Netherlands. PGGM has roots in the healthcare and social work sector. Else is also the leader of the Ellen MacArthur FinanCE Taskforce for advancing investment in circular processes.

What was the circular economy challenge?

Else has recognized that the next stage of responsible investment is needed across the world and believes the circular economy is the answer. In order to fully embrace the circular economy, rather than simply re-inventing recycling, she believes that corporate structures need to change and value chains need to be reinvented.

What was the circular economy solution?

To address these challenges, Else is directly influencing her circle of peers, as well as clients and other investors. She has started a working group with 11 partners discussing a joint vision to focus on financial aspects of the circular economy. Additionally, Else is a member of the Advisory Committee for Circular "HotSpot" initiatives in the Netherlands.

What was the impact?

Else is working towards bringing circular economy thinking into the investment management selection process. Under Else's leadership, PGGM has developed partnerships and cooperatives such as the Legal & General Capital (LGC). This partnership aims to address the UK housing crisis by increasing the supply of new homes. The PGGM Cooperative has approximately 700,000 members and is helping businesses to realize a valuable future by adopting principles of the circular economy. Both alone and together with strategic partners, Else has spearheaded the development of innovative solutions at PGGM by bringing together pension, care, housing and work.

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Aron Cramer

Aron Cramer joined Business for Social Responsibility (BSR) in 1995 as Founding Director of its business and human rights program. He opened BSR's Paris office in 2002. Aron has been the President and CEO of BSR since 2004.

highly commended

What was the circular economy challenge?

Aron recognizes that business is needed to achieve genuine sustainability, while acknowledging that business as usual will not do the job. He believes that circular economy thinking can also create a pathway towards solving other global challenges such as climate change, population growth and water scarcity, issues that are widely regarded as more "traditional" agenda items. Just as business as usual will not get the job done, Aron has realized that "sustainability as usual" will not get the job done either.

What was the circular economy solution?

Since he joined BSR, Aron has directed the organization to embed circular economy thinking across all of its activities. He advises senior executives at more than 250 member companies and other global businesses. He is also regularly featured as a speaker at major events and in a range of top-tier media outlets. Aron is co-author of the book Sustainable Excellence: The Future of Business in a Fast-Changing World, which highlights some of the sustainability strategies that drive business success. Additionally, Aron uses public platforms as opportunities to raise awareness of circular economy principles.

What was the impact?

Aron has led BSR's efforts to introduce circular economy principles into the company's core agenda and offerings. He is recognized globally as a preeminent authority on corporate social responsibility and sustainability strategy by businesses, non-governmental organizations and the public sector. Under his leadership, BSR has doubled its staff number and expanded its global presence, which currently includes offices in Copenhagen, Guangzhou, Hong Kong, New York, Paris, San Francisco, Shanghai and Tokyo.

Aron Cramer

President and CEO, Business for Social Responsibility (BSR)

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Douwe Jan Joustra

Douwe Jan Joustra is the Founder of Implement Circular Economy (ICE) and the Chairman of the Coöperatie Amsterdam Resilience Collective (Coop ARC) in the Netherlands.

highly commended

What was the circular economy challenge?

Douwe Jan believes that, in order to move the circular economy forward, personal dialogues are the most powerful instruments of change. His philosophy is that the circular economy needs the I's: Information-Inspiration, Implementation and Innovation.

What was the circular economy solution?

Thanks to an early connection with the Ellen MacArthur Foundation team, Douwe Jan identified the circular economy as the key systems-innovation focus that is needed in the next step towards a more environmentally conscious policy and business. Together with circular architect Thomas Rau, Douwe Jan helped make the One Planet Architecture Institute and now ICE into a leading change agent across the Netherlands and globally.

What was the impact?

Over the course of the last 35 years, Douwe Jan has been a key advocate of systems innovation. He has been, and still is, the manager of different programs, most of which are governmental in relation to private parties. These include Education for Sustainable Development, Cradle-to-Cradle, and the Innovation program Climate Neutral Cities. Throughout these activities he is constantly exploring the capacities of ecology as a learning basis for the circular economy. His persistence brought circular economy thought leaders in the Netherlands together to publish the national report "Ondernemen in de circulaire economie," which was presented to His Majesty King Willem-Alexander. More recent he was one of the initiators of the Dutch Accelerator Circular Economy. He has also created several Trend Analyses on the circular economy.

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Peter Laybourn

Peter Laybourn is the Founder of International Synergies Ltd and the creator of the National Industrial Symbiosis Programme (NISP).

highly commended

What was the circular economy challenge?

To create a programme model that would enable businesses from any sector and of any size to benefit from resource efficient/circular economy actions that would yield economic, environmental and social benefits and that could be adapted for implementation in all types of economy. Peter subsequently devised the globally recognized National Industrial Symbiosis Programme (NISP).

What was the circular economy solution?

Peter promotes the circular economy globally, having introduced NISP to five continents. He also influences policy makers and businesses, helping to overcome inertia and linear thinking on all fronts. Peter leads the Global Green Growth Forum (3GF) industrial symbiosis track, and delivered the keynote speech on the circular economy at the Global Green Business Summit 2015 in Mexico. Peter most recently worked on promoting the circular economy at GLOBE 2016 as part of the organization committee.

What was the impact?

Peter's pioneering strategy to up-skill National Cleaner Production Centres across the world will provide a platform to establish a global industrial symbiosis capability and thereby further develop, at scale, a move towards a circular economy. He has influenced policy around resource efficiency and the circular economy via a Roadmap to a Resource Efficient Europe and recommendations for the inclusion of industrial symbiosis as a tool for the new EU circular economy package. He also provided the evidence base for the G7 to hold an industrial symbiosis workshop in Birmingham.

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Alex Lemille

Alex Lemille is the Co-Founder of the Circular Economy Institute of South Africa (CEISA™) which strives to build a restorative South African economy that generates well-being and prosperity for all people.

highly commended

What was the circular economy challenge?

High rates of unemployment have been a persistent issue in South Africa. Alex has been promoting the circular economy since 2012. However, when trying to apply it within the South African context, he found that the circular economy needed to be adapted to emerging markets.

What was the circular economy solution?

Prior to launch the CEISA Institute, Alex created the concept of a Valued Circular Economy™ (VCE), which follows a circular economy framework but veers away from profit maximization as its objective, rather aims at value optimization. As an accredited Social Return on Investment (SROI) practitioner, measuring impact and value change, Alex linked up the notion of value creation with the circular economy to come up with the concept of the VCE that is stakeholder driven and therefore socially inclusive, and recognizes Value (V) as its new currency. In a VCE, Poverty= Waste™ since both poverty and waste are externalities of our linear system. Both must be eradicated.

What was the impact?

Alex is also founder of Wizeimpact, a for-profit for-purpose company promoting a socially inclusive circular economic model as a business vision. Through Wizeimpact, Alex has conducted workshops and training programs and delivered conference speeches across South Africa to promote the concept of circularity, while also explaining that societal inclusiveness can be advanced in this more responsible model. The framework has the potential to enable millions of South Africans to benefit from products that they were not able to afford before. Alex also teaches at national universities, and speaks at international conferences on the importance of using value as a core reference in a circular economy framework to re-position social norms ahead of economic ones, while also valuing the environment. In this way, Alex has helped move South African thinking from Corporate Social Investment (CSI) and Corporate Social Responsibility (CSR) to a value-full circular economy.

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Paul Murray

Paul Murray is the Vice President of Sustainability and Environmental Affairs at Shaw Industries Group, Inc. (Shaw). He leads Shaw's comprehensive approach to sustainability, including material health, material reutilization, resource conservation, and renewable and alternative energy use.

highly commended

What was the circular economy challenge?

Key challenges to creating a circular economy include competing with the price of virgin materials, finding solutions for materials already in the market, and looking at the value chain / supply chain in a different way, particularly for commercial interior products in which the initial purchasing customer is not often the customer when it comes time for reclamation.

What was the circular economy solution?

As Director of Sustainability at HMI, Paul played a key role from the beginning in the company's alignment to Cradle-to-Cradle design (C2C). Consequently, HMI products have been developed using the C2C protocol since 2001. In addition, Paul and his team worked directly with William McDonough and Michael Braungart on a project that eventually became known as the Cradle-to-Cradle Protocol. At Shaw, Paul leads the Growth and Sustainability committee, driving innovative product solutions and setting sustainability strategy globally.

What was the impact?

During his time at HMI, Paul's collaboration led to HMI's release of the first product ever to achieve C2C certification. Now, 66 percent of Shaw's manufactured products are C2C and that percentage continues to increase. In 2015, Shaw introduced a new carpet recycling facility that expands the ability to recycle both nylon and polyester carpets, materials for which there have been little to no viable recycling options. In all, Paul's leadership, first at HMI and more recently at Shaw, has supported the industry's continued push for innovation around the circular economy.

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The Accenture Award for Circular Economy Multinational

For established organizations
demonstrating innovation in
their existing business



PHILIPS

Royal Philips is a global diversified health and well-being company, focused on improving people's lives in the areas of health, technology and lighting. Philips' vision is to make the world healthier and more sustainable through meaningful innovation.

What was the circular economy challenge?

Demand for health care and lighting services are rising due to an ever-increasing population and the increasingly widespread availability of electricity. This puts a strain on the world's finite resources, including those utilized in Philip's value chain.

What was the circular economy solution?

Philips realized the need to adopt circular practices across its entire organization while focusing on energy and resource efficiency. The company adopted two approaches to contribute to a circular economy: 1) transitioning from selling products to providing solutions as services and 2) designing and manufacturing high-quality products for multiple lifecycles, including the integration of used components and recycled materials. Additionally, Philips uses its position as a leading global technology enterprise to move standards, infrastructure and international policies towards a circular economy model. Internally, Philips has designed training programs dedicated to the circular economy.

What was the impact?

The circular economy is now at the core of Philips' value proposition to customers to the extent that the company has created a new circular economy sales criteria due to start in 2020. Through Philips' "Lives Improved Model," which measures the social and ecological impact of its products, the organization is currently enhancing the lives of 25 percent of the world's population.

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Veolia is the global leader in environmental solutions. With over 174,000 employees worldwide, the Group designs and provides water, waste and energy management solutions that contribute to the sustainable development of communities and industries. The circular economy is at the core of Veolia's strategy and is regarded as one of the main levers for reducing environmental harms such as CO2 emissions, and also as an extraordinary opportunity to create new sources of wealth.

winner

What was the circular economy challenge?

Veolia is determined to address the problems of pollution, scarce resources, threats to biodiversity and climate change. With pressure on natural, economic and human resources rising, Veolia focuses on carbon reduction and the implementation of innovative solutions to tackle key environmental issues.

What was the circular economy solution?

Building on the expertise of its 174,000 people, Veolia has developed circular models including remanufacturing from waste, prolongation of equipment lifecycles, renewable supplies and wastewater recycling. Today, water, waste and energy can all be recovered. Veolia is transforming what is discarded by some into valuable resources for others. Thanks to technology and eco-design, resources can be used for a variety of purposes. Water and waste can generate heat, cold, steam, energy, bioplastics, biofertilizers and biofuels. In turn, these new materials can be recycled, reprocessed and reused, again and again.

What was the impact?

By overcoming water, waste and energy silos, and by combining digital technologies with advanced industrial processes, Veolia has led circular collaboration across industries, cities and communities. Today, the company manages the energy services of more than 2,000 industrial facilities and has converted over 42.9 million tons of waste into new materials and energy in 2015. Veolia is focused on its mission to resource the world via continued innovation, cooperation and business transformation by building and shaping the circular economy.

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CATERPILLAR®

Caterpillar Inc. is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial turbines and diesel-electric locomotives and has incorporated circular economy principles across its value chain.

What was the circular economy challenge?

In today's global landscape, it is difficult to realize the goal in which all basic needs, such as shelter, clean water, sanitation, food and reliable power, are fulfilled. Caterpillar is committed to making this possible in a sustainable way by adopting circular strategies and providing work environments, products, services and solutions that utilize resources in a more productive and efficient manner.

What was the circular economy solution?

Caterpillar's remanufacturing business took back 154 million pounds of end-of-life material from customers in 2015, and remanufactured it into same-as-when-new condition. The company also adopts digital technologies to drive circular transformation via its alternative energy and customer job site optimization initiatives. An example, its Cat® Connect technology optimizes customer operations. Additionally, Caterpillar offers combined heat and power systems and supports applications that utilize alternative fuels such as landfill gas and biogas.

What was the impact?

Caterpillar has incorporated circular economy and sustainability principles across its value chain including its operations, product development, supply and dealer networks and customer relationships. The products, services and solutions which demonstrate an improved sustainability benefit over existing offerings accounted for 18 percent of the company's total sales and revenues in 2015.

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HP Inc., the US-based global technology company, offers a portfolio of printers, PCs, mobile devices, solutions, and services to consumers, small and medium-sized businesses and large enterprises, including customers in the government, health and education sectors.

What was the circular economy challenge?

The complexity of ink jet cartridges and print equipment makes them difficult to recycle. Mass printing has become the norm for most organizations and individuals across the world. However, it is essential to reduce the pressures on the world's natural resources by limiting the amount of new and avoidable energy and materials that go into product manufacturing.

What was the circular economy solution?

HP adopts new principles across its product range and creates circular economy inspired strategies. It is embracing the circular economy across its value chain by offering service models that deliver alternatives to linear lifecycles. An example of HP's circular approach is its closed-loop recycling program in which plastic from HP ink and toner cartridges, recovered via its Planet Partners program, is combined with other plastics to create new HP ink supplies. Since 2004 HP's collaborative solution has used over 110 million pounds of recycled plastic from over 420 million HP ink cartridges, 3.3 billion bottles and 50 million apparel hangers to manufacture more than 2.7 billion ink cartridges.

What was the impact?

Today, more than 80 percent of HP ink cartridges and more than 38 percent of HP toner cartridges contain recycled plastics. Third-party assessments show that the use of closed loop and up-cycled material significantly reduces environmental impacts. In fact, the recycled PET used in HP ink cartridges has a carbon footprint up to 33 percent smaller than virgin plastics and reduces fossil fuel consumption by 54 percent and water consumption by 75 percent. The company's two primary ink recycling facilities employ dozens of people, providing good-paying, green economy jobs in Nashville, Tennessee and Bavaria, Germany. In addition, HP's programs contribute to the employment of dozens of people in channel, supplier and partner facilities associated with product aggregation, cartridge recycling and resin compounding sites.

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With more than 130 years of history, Tarkett stands today as a worldwide leader of innovative and sustainable flooring and sports surface solutions. Based in Paris, France, Tarkett operates in more than 100 countries and is actively realizing its vision of becoming a leading circular economy company.

What was the circular economy challenge?

To meet major societal challenges, today's concept of sustainability must evolve to create new opportunities for companies and organizations to make proactive and meaningful contributions. To reduce pressures on the environment and respect people's health, Tarkett aims to provide the best-quality flooring solutions while reducing and volatile organic compound (VOC) emissions. The business has realized that innovation shaped by circular economy goals such as turning waste into value, eco-design, and using healthy materials drives profitability and competitive edge as well.

What was the circular economy solution?

Tarkett has deployed a comprehensive circular economy strategy based on its closed-loop circular design model powered by the Cradle to Cradle® principles, and encourages its partners and suppliers to do the same. This is driven by an extensive eco-innovation strategy. As a result, the company has been a pioneer in developing a healthy alternative to the phthalate plasticizers in its vinyl flooring. In addition, Tarkett has developed a wide range of flooring solutions that contribute to better indoor air quality, including low VOCs, anti-allergens and technology that reduces the amount of fine dust in the indoor air, while also designing its products with high levels of recycled content from flooring and other industries, and implementing take-back and recycling programs (ReStart).

What was the impact?

With the circular economy and Cradle to Cradle® principles incorporated in Tarkett's strategy, the organization is achieving its vision to positively contribute to the health and wellbeing of people and the environment at every step of a product's life (design, production, use and recycling). Tarkett has realized several major eco-innovations: lowering the VOC level of its vinyl range to 10 to 100 times below the strictest standards in the world, as well as developing new vinyl ranges that are based on phthalate free plasticizers. The company has set a target to roll this new technology out to all of its vinyl production sites worldwide by 2020. Designing flooring with healthy materials combined with a take-back program is also a way to build "good" secondary resources, thus developing virtuous circular models.

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Unilever is one of the world's leading suppliers of Food, Home and Personal Care products with sales in over 190 countries and reaching 2 billion consumers a day. Unilever's Sustainable Living Plan (USLP) commits to: Decouple growth from environmental impact; help more than a billion people take action to improve their health and well-being; and enhance the livelihoods of millions of people by 2020.

What was the circular economy challenge?

In today's competitive environment, many businesses face the challenge of wanting to grow in size while also attaining ambitious sustainability goals. In 2008, Unilever sent 140 thousand tons of manufacturing waste to landfill. Acknowledging that economic growth and environmental responsibility must be compatible, Unilever embarked on its Zero-Non-Hazardous-Waste-to-Landfill (ZNHWTl) journey to dramatically reduce its waste output as part of the Unilever Sustainable Living Plan commitment.

What was the circular economy solution?

Unilever set a target for 2020 to keep waste to landfill at the 2008 level. By the end of 2014, 100 percent of their manufacturing sites (more than 240 sites in 67 countries across 6 continents) had achieved ZNHWTl, six years ahead of the intended commitment and at the beginning of 2016, Unilever announced that nearly 400 additional sites including factories, warehouses, distribution centers and offices had also eliminated waste to landfill. Employing reuse programs across packaging as well as a reverse logistics program, Unilever managed to achieve a 15 percent reduction in waste production from 2008 to 2014, and created socially beneficial employment opportunities along its new and improved supply chain. Shredded and compressed waste is now transformed into value by producing items such as coat hangers, low-cost building materials and even school desks.

What was the impact?

The environmental benefits of ZNHWTl included 140,000 tons of waste diverted from landfill and the creation of hundreds of jobs, as well as economic benefits of more than €200 million. Unilever's focus now is to continue to reduce waste at source whilst further adopting circular models whereby waste becomes a resource.

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Coca-Cola Enterprises Ltd

Coca-Cola Enterprises is a global business that operates at a local scale, bringing the global operations of The Coca-Cola Company, which owns the brands and manufactures syrups and concentrates, with local bottling partners who manufacture, package, merchandise and distribute the final product to retailers and wholesalers. Coca-Cola Enterprises (CCE) is one of the largest independent bottlers operating across seven countries in Europe.

What was the circular economy challenge?

Climate change is likely to mean scarcer supplies and more volatile prices for steel, aluminum, cardboard and plastics. Packaging is essential to safeguard the quality of products and ensure their safe delivery to customers and consumers; however, packaging is often thrown away and ends up in landfills after use. As a major user of disposable packaging, stakeholders expect CCE to take a leadership position by using recycled and renewable materials and innovating on alternative packaging and delivery options. Approximately 50 percent of CCE's value chain carbon footprint comes from its packaging, making the reduction of CCE's packaging footprint critical if the company is to meet its sustainability objectives.

What was the circular economy solution?

To source high-quality recycled plastic (rPET), CCE has invested heavily in the infrastructure for the collection and reprocessing of materials in France and Great Britain. In Great Britain, the company established a long-term supply agreement with ECO Plastics (now Evolve Polymers). In France, Infineo Recycling, their joint venture with APPE (now Plastipak), is now in its second year and is recycling 1.5 billion PET bottles a year, producing enough rPET to cover their packaging requirements in France, the Netherlands, Belgium and Luxembourg. Infineo has an interactive website which hosts a virtual tour of the recycling facility, explaining the principles of the circular economy and outlining the steps in the recycling process. Its launch was an important step in reaching out to the public and providing education and information for their stakeholders. Finally, CCE developed opportunities to tie commercial promotions in with opportunities to promote recycling, for example, in partnerships with major supermarket chains including Tesco, Carrefour, Waitrose and ASDA.

What was the impact?

Coca-Cola Enterprises is committed to supporting the development of the circular economy, using recycled and renewable materials and recycling more packaging than they use. As a result, CCE's strategy has focused on making adjustments at each stage of the packaging's lifecycle. In particular, some of their 2020 targets include: reducing the amount of packaging that is used by 25 percent; ensuring that 40 percent of the PET used is recycled PET or made from renewable material, and ensuring that all of the packaging remains 100 percent recyclable. By 2014, CCE had reduced its packaging use ratio (average total weight of packaging per liter of product) by 20 percent, reducing the carbon impact of its packaging by 19,300 tons of CO₂ emissions through lightweighting and the use of recycled and renewable materials.

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Interface®

Global modular flooring manufacturer, Interface, aims to inspire all areas of its business and other organisations to consider people, processes, products, places and profits against the environment and society. This principle is applied to every aspect of the company's supply chain, from sourcing raw materials, to product design, manufacturing, logistics and end of life, and also to marketing, management and sales.

highly commended

What was the circular economy challenge?

The amount of discarded plastic in the oceans around the world is set to increase tenfold by 2020, in addition to approximately 640,000 tons of abandoned fishing nets in the ocean accounting for one-tenth of all marine litter. This has obvious critical environmental consequences extending centuries into the future due to the length of time it takes for plastics and nets to biodegrade.

What was the circular economy solution?

Together with conservational charity, The Zoological Society London (ZSL) and yarn supplier Aquafil, Interface pioneered Net-Works™, an inclusive circular business model which reintegrates discarded fishing nets into its nylon supply chain. Net-Works provides socio-economic infrastructure in some of the world's poorest fishing communities and gives discarded nets a second life as yarn for Interface's tiles, while also solving a major environmental issue. Profits from the initiative are then reinvested into local communities to improve quality of life.

What was the impact?

To date, the Net-Works project has achieved a number of significant results, including: more than 80,000 kg (177,223lbs) of discarded fishing nets collected; over 80 tons of net that is no longer damaging the natural ecosystem; villagers have earned supplemental income equal to 230,552 additional meals; provided a continuous source of recycled materials for use in Interface's products; and enabled local participants to take an active, ownership roll in re-establishing the beauty and balance of their natural environment. Taking on a pioneering role, Interface made its "Mission Zero" pledge in 1994: an open commitment to eliminate any negative impact on the environment by the year 2020. Now approaching the end of its target, half of Interface's raw materials come from recycled or low-carbon, bio-based sources. The CO2 emissions in its operations in Europe have been reduced by 98 percent thanks to a 54 percent energy reduction and a 95 percent share of renewables. Furthermore, Interface continues to use open innovation platforms to find new, unexpected partners to help create and implement innovative circular ideas.

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highly commended



Jaguar Land Rover (JLR) is the UK's largest automotive manufacturing business, built around two iconic British car brands: Jaguar, one of the world's premier luxury sports saloon and sports car marques and Land Rover, the world's leading manufacturer of premium all-wheel drive vehicles. The company is one of the largest aluminium sheet users in the global automotive market with a long-term strategic aim to reduce the full lifecycle sustainability impact of their vehicles.

What was the circular economy challenge?

Primary aluminum production is energy intensive and traditional alloy chemistry has limited the full exploitation of recycled aluminum sources. Recycling aluminum provides significant environmental benefit (requiring circa 95 percent less energy in production relative to primary aluminum) but has required a transformation to technology and value chain infrastructure to achieve a closed-loop process. Materials innovation to develop the next generation aluminum alloys and advances in manufacturing operations have been needed to return aluminum from waste streams back into the highest quality aluminum sheet for application in vehicle body structures.

What was the circular economy solution?

JLR led project REALCAR (REcycled ALuminium CAR) has challenged the traditional approach to manufacturing waste, applying circular principles to develop and implement a new business model to retain material value and quality. The project has been run in conjunction with a number of stakeholders (such as Novelis) to develop a new aluminium alloy (RC5754) that can accommodate a higher recycled content. In 2015, the associated closed-loop with Novelis captured over 40,000 tons of JLR press shop aluminum scrap, avoiding the generation of 400,000 tons of manufacturing CO2 emissions compared to using primary/virgin aluminum. Supporting investment has required circa £6 million at the Novelis Latchford plant and over £6 million in JLR's manufacturing operations. REALCAR 2, a 2.5 year, £1 million follow-on research project has developed a prototype 75 percent recycled aluminum sheet grade with 25 percent sourced from high-quality post-consumer aluminum.

What was the impact?

The aluminium closed-loop model goes beyond automotive legislative requirements and contributes to a carbon footprint reduction in the supply chain. The initiative has pushed the boundaries of material, technological and process innovation; developing an alloy that meets the complex requirements for high performance automotive application; and achieving mind-set and technological/process changes with suppliers to operationalise the new model. This also contributes to JLR's future target of 75 percent recycled aluminum in vehicle aluminum body structures by the year 2020.

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Lexmark, a US-based corporation, is a leading provider of Managed Print Services (MPS), embracing the vision of building a circular economy with dematerialization and usage services, and actively helping its customers to reduce unnecessary paper use and energy.

highly commended

What was the circular economy challenge?

In 2014, nearly 50 million tons of e-waste was created, which translates into 7kg for every person on the planet. While the business of third-party remanufacturers could not survive without access to used cartridges, they often have poor, or even no, collection arrangements for return of their empties, securing approximately 20 percent. Facing the challenge of developing the use of more resources and energy-efficient printers with more durable cartridges incorporating components that can be used many times, Lexmark recognized they could play an important role in developing solutions for this expansive waste issue.

What was the circular economy solution?

Lexmark's strategy has been to develop the use of more energy-efficient printers with more durable cartridge components that can be used multiple times. Lexmark's cartridge studies showed that recycling a used Lexmark toner cartridge reduces the carbon footprint of those cartridges by nearly 50 percent over discarding them as landfill. To promote its circular advantage, Lexmark created a social media campaign called "Loop into Circular Economy," featuring Lexmark circular products to educate customers and promoting Lexmark's disruptive tools to enable circular principles.

What was the impact?

Since 1996, Lexmark has reused more than 21,000 tons of recovered cartridge material by converting millions of used toner cartridges into Lexmark-certified reconditioned toner cartridges. This makes Lexmark an industry leader in the use of reclaimed plastic in its cartridges with 12 percent average post-consumer recycled (PCR) plastic content, by weight, across all toner cartridges. Between 2004 and 2014, Lexmark increased the amount of cartridge materials reused by 400 percent through their Lexmark Cartridge Collection Program (LCCP) and closed-loop processes. In 2014, 34 percent of the cartridge materials by weight returned to Lexmark were reused and recycled in Lexmark's own R2 Certified Recycling Center. In addition, Lexmark partnered with its customers to reduce their paper waste, which also contributed to a reduction of its corporate carbon footprint. Lexmark's 2018 goal is to average 25 percent PCR plastic content across the entire toner cartridge product line.

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Tetra Pak, the global food processing and packaging company is committed to enabling safe consumption of food everywhere while minimizing its impact on the environment across the entire value chain and adopting the principles of the circular economy within their business model.

highly commended

What was the circular economy challenge?

More than 70 percent of a Tetra Pak package is paperboard – made from wood, a renewable resource – the rest consists of polymers and a thin layer of aluminium. The packages require a separate recycling process thus the challenge is to improve and facilitate recycling and at the same time limit resource depletion by focusing on renewable materials.

What was the circular economy solution?

Tetra Pak aims to offer packages entirely made from renewable materials and is already making strides towards that goal. The company's packages are primarily made of paperboard obtained from sustainably managed forests which carry the FSC™ label across the world.

Tetra Pak brings environmental innovation to the market and is leading the way in the use of bio-based plastics. It was the first company in the sector to introduce bio-based caps and in 2014, it launched the world's first fully renewable package, the Tetra Rex® bio-based, made entirely from plant-based materials. This packaging solution is made solely of paperboard and plastics derived from sugar cane.

At the same time, Tetra Pak supports recycling infrastructure and promotes used beverage cartons as a valuable source of raw materials.

What was the impact?

Tetra Pak sees its packaging solutions as an asset that helps reduce food waste and, by working to develop recycling solutions, close material loops. The company has significantly reduced its dependency on finite resources by promoting the use of renewable materials. In 2015, 100 percent of the paperboard purchased came from FSC-certified mills. Tetra Pak has also achieved the FSC Chain of Custody certification for all converting plants and market companies, meaning it can supply FSC-labelled packages from anywhere in the world. The company made responsible sourcing one of its three main priorities within supplier operations and initiated a number of activities aimed at strengthening sustainable sourcing across its entire supply chain. Tetra Pak has become a corporate member of the Circular Economy 100 (CE100) program, the Ellen MacArthur Foundation's pre-competitive innovation program.

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The Coca-Cola Company

The Coca-Cola Company is a global multinational beverage corporation and manufacturer, retailer, and marketer of non-alcoholic beverage concentrates and syrups with operations in more than 200 countries worldwide. The Coca-Cola Company is best known for its flagship drinks product Coca-Cola.

highly commended

What was the circular economy challenge?

The challenge the company faced was how to bring together will.i.am's creative mind and enthusiasm for innovation and the world's most recognized brands, Coca-Cola, to create desirable consumer products that will help accelerate the transition to a circular economy.

What was the circular economy solution?

With a program targeted at millennials, The Coca-Cola Company and global music artist and entrepreneur will.i.am launched the EKOCYCLE™ brand adopting a closed-loop recycling approach. The ethos of the approach is that "waste is only waste if we waste it." The project aims to push the boundaries on more sustainable fashion and design and to create desirable consumer products made from recycled materials.

What was the impact?

EKOCYCLE™ has collaborated with global brands such as Adidas and Keds to develop an innovative range of clothes, accessories, design and lifestyle products made, in part, from recycled materials such as PET plastic bottles and aluminum cans. EKOCYCLE™ works with each brand partner to change or improve its supply chain by validating the recycled material supply. The result is an inspiring aspirational collection that challenges preconceived notions of products made from recycled material. Ultimately, the EKOCYCLE™ brand is about helping consumers understand that waste can actually be a valuable resource to create desirable lifestyle products.

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THE CIRCULARS 2016

2016-2017





The Circulars Awards Ceremony took place during the World Economic Forum's annual meeting in Davos, 17th January 2016



The Ecolab Award for Circular Economy Enterprise



For a small-to-medium sized organization, which is transforming its business towards the circular economy





Optoro, founded in 2010, is a technology company that offers an end-to-end reverse logistics solution that helps retailers optimally process, dispose and sell their excess and returned inventory.

winner

What was the circular economy challenge?

Big retailers are facing a growing problem. Every year, 15 percent of all items purchased are returned or deemed excess, and that number continues to grow with the rise of e-commerce sales and more liberal return policies. Traditionally, returned and excess goods are shipped multiple times over the course of several months before reaching an end consumer, and in the process lose value and create unnecessary pollution.

What was the circular economy solution?

Using data analytics, Optoro's software platform determines the best path for returned and excess goods, cutting out the long, wasteful chain of middlemen. Optoro's software, OptiTurn, helps retailers process, sort, and sell those returned items more efficiently in order to maximize recovery costs and reduce waste. Through OptiTurn, inventory is received, processed, tested and graded, and then listed on multiple eCommerce sites, which quickly gets products back to end consumers. Inventory is listed on ten eCommerce sites, including Amazon, eBay, and Optoro's own eCommerce website, BLINQ.com and BULQ.com.

What was the impact?

Optoro works with 20 of the largest 100 retailers in the US, including the largest home and garden retailers, the biggest eCommerce retailers, and major office supply retailers. Going forward, Optoro's goal is to expand that number, growing the company into a global enterprise that leverages best-in-class analytics to connect buyers and sellers worldwide. If Optoro's software was scaled across the US it would reduce waste by up to 73 percent, cut fuel costs by \$850M and lower CO2 emissions by 2+ million metric tons.

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Neptuno Pumps, based in Chile, is an award-winning, world-class designer and manufacturer of energy efficient, innovative and sustainable pumping solutions for the mining and process industries worldwide.

What was the circular economy challenge?

Given the current scarcity and high value of commodities, Neptuno Pumps believes in the need to move towards a circular economy that recycles materials, remanufactures equipment and helps mitigate the effects of climate change. Pumps are the second most used equipment in the world and consume 30 percent of the world's energy. In addition, Chile has the biggest mining industry in Latin America with \$150 billion of remanufactured goods potential. Neptuno Pumps has taken on the challenge to unlock this potential.

What was the circular economy solution?

Neptuno Pumps has been able to implement a circular economy model which enables the company to enhance profit and share value through remanufacturing. Currently, 60 percent of Neptuno's pumps are remanufactured from old materials. This figure is expected to increase to 90 percent within the next five years. Moreover, Neptuno Pumps is moving towards a Product-as-a-Service (PAAS) model and works jointly with Fundación Chile (FCh), a non-profit technological "do-tank," to promote the circular economy nationwide.

What was the impact?

Neptuno Pumps is the world's first pump manufacturer to establish an innovative and sustainable circular economy approach with its customers. Through this work it has reduced its carbon footprint by 70 percent. Furthermore, as a vertically integrated company, Neptuno Pumps has understood the importance of remanufacturing, offering remanufactured products that are energy efficient, 30 percent cheaper, and with a one-year warranty, exactly the same as when purchasing a brand new pump. By creating new alliances with its clients, the company is planning to manufacture 90 percent of its products with recycled and reused materials in the next five years. Neptuno Pumps performed a complete redesign of its system through a complete CFD/FEA analysis and, together with a full material upgrade, the company generated savings of \$650,000 per year.

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Founded in 2004, AeroFarms is the commercial leader in indoor vertical farming, utilizing a totally controlled growing environment without sun or soil while minimizing harmful transportation miles. AeroFarms addresses the world's global food crisis by building, owning and operating farms that grow local, flavorful, safe, healthy food in a sustainable and socially responsible way, setting a new standard for controlled agriculture.

What was the circular economy challenge?

Globally, food prices are soaring due to increased demand from developing economies, rising fuel prices, variable weather ruining harvests and a shift to biofuel production. Because of a growing world population, countries have an urgent need to increase food production. Governments and farmers continue to acquire more land, farm more intensively and utilize toxic fertilizers, all of which harms the environment. With AeroFarms smart technology, the farming process is revolutionized as Horticulture-meets-Engineering-meets-Data Analytics to address our global food crisis.

What was the circular economy solution?

AeroFarms are fundamentally transforming agriculture by disrupting the current food production paradigm and creating a new supply chain based on circular economy principles. This approach enables local farming at commercial scale year-round. AeroFarms has created an optimal technology based on data collection that utilizes fewer inputs and creates better outputs. Within the next 12 months, the company expects to eliminate all waste. In addition, AeroFarms grows non-GMO leafy greens that are more nutrient dense using 95 percent less water, 60 percent less fertilizer, and zero pesticides, herbicides or fungicides. It has also partnered with major retailers and is working with food manufacturers to create products out of its waste stems, thus adopting circular economy thinking into its processes.

What was the impact?

AeroFarms is 70 times more productive than a conventional farm in terms of output per square foot. Within the past four years the company has proven the promise of its technology at scale, having built eight functioning farms. AeroFarms does not contribute to agricultural run-off, soil salinization or pollution of aquatic ecosystems. The company's packaging uses a "peel and reseal" design that uses less plastic for its 100 percent recyclable clamshell packaging that is additionally made from 100 percent recycled plastic. Socially, AeroFarms has the potential to revitalize communities as its farms are typically located within distressed economic zones. A typical AeroFarms farm creates over 40 new jobs in a community, furthering local economic revitalization.

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Drivy is a European market leader for peer-to-peer car-sharing with full insurance for users, offering a proximal, cheaper and friendlier experience. By 2015, Drivy had nearly 700,000 users across France, Germany and Spain.

What was the circular economy challenge?

As well as reducing the amount of pollution in the Earth's atmosphere, car sharing is a reason to manufacture vehicles at a lower rate. With an increasing population and greater levels of wealth, the roads in our towns and cities are becoming more and more congested. Drivy gives individuals the option to rent a car without hassle. This could enable people not to need to buy a car and instead rent cars, thereby reducing the amount of materials used in car production.

What was the circular economy solution?

The transformation of mobility by optimally using existing cars is centered on digital technology. Drivy has developed an app allowing citizens to rent out their own car when they are not using it, or to rent their neighbor's car for weekend getaways. The car owner earns 70 percent of the rental price and 30 percent remains with Drivy, of which the major stake covers the Allianz insurance at the time of the rental (including 24/7 roadside assistance). The insurance is at the core of the new concept of peer-to-peer car-sharing.

What was the impact?

Over the course of three years, Drivy has tripled the scale of its business, with 35,000 private cars that are available to rent via the service. Drivy has inspired and attracted people that want to achieve something with their existing assets, along with those who want to optimize their own mobility and identify with the idea of sharing existing resources in a simple and cost-efficient manner. In the next five years, Drivy aspires to become the leader for sustainable mobility in Europe.

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Miniwiz is an internationally operating and privately owned company dedicated to upcycling consumer trash and industrial waste. Established in 2005, it creates low carbon footprint materials, semi-finished goods and building modules suitable for uses ranging from construction to consumer products.

finalist

What was the circular economy challenge?

The building materials and construction industries face a growing waste problem and have a large environmental footprint. Building waste is often made up of materials such as bricks, concrete and wood that is damaged or unused for various reasons during construction and may contain toxic chemicals that are released once landfilled. Observational research has shown that this can be as high as 10 to 15 percent of the materials that go into a building. Since considerable variability exists between construction sites, there is considerable opportunity for reducing this waste.

What was the circular economy solution?

Miniwiz provides turnkey architectural closed loop economy solutions. The company leverages the ever-accumulating waste as a growing and mineable resource to make building materials and tackle both the waste problem and the huge environmental footprint in the building industry. Miniwiz gained significant recognition in architecture circles in 2010 after building "EcoArk," a museum made completely out of recycled plastic PET (Polyethylene terephthalate) bottles. Miniwiz operates an IT system that allows mechanical properties of wasted resources to be entered into a database. This database delivers information about parts and products made in real time, after which an IOT (Internet of Things) system monitors shipments of materials and products already deployed.

What was the impact?

For ten years, Miniwiz has been serving various industries and enterprises worldwide, advocating a reduction of the carbon footprint through the usage of recycled and fully re-recyclable materials, modularity and re-usage of parts. To date, Miniwiz has solved a whole host of sustainability and circularity problematics in the retail, hospitality, manufacturing and interior design sectors.

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TerraCycle is an international upcycling and recycling company that collects difficult-to-recycle packaging and products and repurposes the material into affordable, innovative products. Founded in 2001, TerraCycle is widely considered the world's leader in the collection and reuse of non-recyclable, post-consumer waste and post-industrial waste out of landfills.

What was the circular economy challenge?

Waste that is thrown out goes to landfills or incinerators, where it will release carbon emissions that have a negative impact on the environment. Landfilled waste also takes up limited space on the earth and produces other side effects like leaching toxins into the soil and groundwater. TerraCycle strongly believes that technically "non-recyclable" materials can be recycled and the lifecycle of several materials and products can be extended.

What was the circular economy solution?

TerraCycle's business model is highly innovative as it disrupts planned obsolescence and traditional linear end-of-life disposal solutions for waste. By working directly with major brands, consumer goods manufacturers, retailers and governments, the company is able to create new applications and recycling methods for waste streams that were previously destined for linear disposal. TerraCycle collects and repurposes hundreds of types of "non-recyclable" waste streams including coffee capsules, cigarette butts, snack wrappers, beverage pouches, oral care waste, and beauty products. In 2012, it opened the world's first consumer-facing recycling program for cigarette waste. To date, with over 7,000 collecting locations across the world, this program has kept over 80 million units of cigarette waste out of landfills and off community and city streets.

What was the impact?

TerraCycle has become an internationally recognized company with many brand partners, including L'Oreal and Colgate-Palmolive. These partners sponsor TerraCycle's innovative waste collection and recycling platforms, allowing individuals, schools, businesses and other organizations to recycle waste in their communities at no cost. Collectively, the company and its partners and participants have raised almost \$15 million for recycling charities. Overall, TerraCycle's recycling programs have kept more than 4 billion units of post-consumer and post-industrial waste out of landfills.

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Apto Solutions is a global IT asset disposition (ITAD) leader offering its clients everything they need to manage the risks and complexities of IT asset disposition with ease and to maximize value recovery. Apto Solutions has been instrumental in the evolution of the ITAD industry from a loosely controlled collection of equipment brokers to a tightly controlled industry based on service, best practices and oversight.

What was the circular economy challenge?

Interchangeable cloud architectures have changed the data center landscape, and the increased use of tablets and proliferation of mobile devices continue to complicate information technology lifecycles and exacerbate the e-waste problem. Yet many companies, including Fortune 500 companies, do not have all of these pieces in place to deliver timely and cost-effective lifecycle turnovers to recapture devices at the end of their useful life and incorporate recycled materials from them into the creation of new equipment.

What was the circular economy solution?

Apto Solutions' AptoPulse portal provides a comprehensive view of its customers' asset disposal lifecycle as it refurbishes, resells, or recycles their equipment. Each tab offers real-time insights into a specific area of their business. From one screen they can track the logistics of any associated asset; track shipments on an in-transit map; view and download financial reports; and view and download certificates and logs that verify the safe sanitization of data from all devices. The report tool, Eco Summary, provides a customized analysis of a client's environmental impact. The brand new digital tools eliminate the visibility hole that typically exists in company's circular systems, and makes it easy to verify the efficacy of cyclical reuse and resale programs. In general, Apto Solutions focuses on building industry-leading tools that inject transparency into a traditionally opaque industry.

What was the impact?

Apto Solutions recovers value from its customers' unwanted assets, protects them from costly data breaches, and helps them meet their corporate sustainability goals all in a single, integrated process that prolongs the useful life of their technology before finally recycling it back into the economy. In 2014 alone, companies that Apto Solutions worked with saved over 14,800 metric tons of fossil fuels and 19 million gallons of water, and also prevented 1,315 metric tons of hazardous waste from ending up in land-based disposal areas.

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Founded in 1992, Battery Solutions recycles every chemistry, every type, every volume and every battery ever made. It is a full service, fully certified and compliant battery recycler helping corporations, governments, municipalities, and households across North America safely and effectively recycle batteries.

highly commended

What was the circular economy challenge?

Batteries contain a number of heavy metals and toxic chemicals. Disposing of them in the same way as regular trash can lead to soil contamination and water pollution, thereby affecting the environment and raising health concerns. In 2012, only 32 percent of all household batteries were returned via the appropriate channels. Costs associated with battery recycling is barrier for increasing collection and recycling rates. Increased calls for compliance by regulators – e.g., the EU’s Battery Directive – now force companies and consumers to resort to sustainable ways of recycling their used batteries.

What was the circular economy solution?

Battery Solutions believes the “take, make, toss” (the linear economic model) is not going to carry all of us into a thriving or sustainable future. It collects and recycles or upcycles batteries and repurpose the secondary commodities for reuse in steel manufacturing, agriculture, and new battery manufacturing, among other applications. It is constantly researching new uses in order to cut down on the mining of virgin elements and continue, “circling” materials found in batteries. Battery Solutions is investing in technology to increase efficiency and reduce costs, while also collecting and recording detailed data about the batteries, such as brand, model, size, and age. These advancements improve Battery Solutions overall performance and reduce financial barriers making it more attractive for people to recycle their batteries.

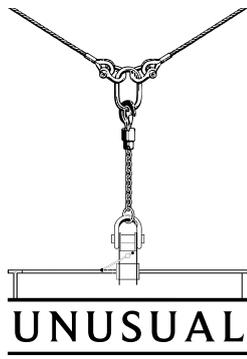
What was the impact?

The environmental impact of Battery Solutions in 2015 translates to 40 million pounds of batteries that were saved from landfill and secondary commodities circulated back into the economy. Over the few next years, the business intends to further streamline its processes by employing a Lean Six Sigma approach. Battery Solutions also aims to upcycle cell phones that are no longer valued in the U.S. to reuse in developing countries where the same phone would be the hottest technology and open its business to the collection and processing of all North American batteries.

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highly commended



Established in 1983, Unusual Rigging is the UK's most experienced provider of rigging and stage engineering solutions. The company operates across Europe, principally in the entertainment, special event, exhibition and presentation industries. By remanufacturing and applying technology it extends the value of all its equipment, ensuring it "loops for longer" using bespoke software to enable better tracking and servicing of all equipment.

What was the circular economy challenge?

Unusual Rigging deals primarily with "technical nutrients" (non-harmful synthetic materials that have no negative effects on the natural environment) and attempts to understand the opportunity to extend the value and durability of its equipment. Conscious of prolonging the product life cycle, the company attempts to recondition, reuse and recycle 100 percent of the nutrients instead of having them go to waste, losing money and potentially harming the environment. Unusual Industries have therefore moved towards offering long-term servicing contracts on all sold equipment with all of their clients, thereby extending the value of their products through servicing and refurbishing.

What was the circular economy solution?

By implementing effective asset tracking software, Unusual Rigging is now in a position to track its equipment more effectively. Each item has a "birth certificate" which includes and updates all servicing details, locality, checks and relevant industry standard certifications. The technology has optimized its operational capabilities so it has a better understanding of capacity issues, a clearer view of inventory levels and an assurance to its customers that the equipment utilized on their projects meets strict regulatory standards. Furthermore, Unusual Industries created a new job role, "Storeman," who is responsible for effective reverse logistics and the reutilization of reusable technical nutrients as well as implementing their 'ecoline' product base.

What was the impact?

Unusual Rigging was able to significantly extend the value of its engineering products, reduce fixed costs through robust streaming and reuse, and offer durability and extended usability to its customers. It ensured longer-lasting servicing contracts with its clients, developing loyalty and lowering embedded CO2 in its service provision and product development through on-site renewable energy generation. Better tracking of equipment, reuse and recycling of 100 percent of all technical nutrients has mitigated the risk of unnecessarily lost value and hidden externalities as well as positively impacting return on capital employed. In sum, 20 percent of the 2014 profits were reinvested into the business to expand the scope of the company's circular approach.

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The Young Global Leaders Award for Circular Economy Entrepreneur

For early stage organizations at the vanguard of the circular economy, demonstrating innovation and market disruption



LanzaTech is a US-based clean-tech company that is revolutionizing the way the world thinks about carbon. By turning waste carbon from a liability into an opportunity, LanzaTech is accelerating the reduction of harmful emissions while creating new economic opportunities for companies, communities and countries around the world.

winner

What was the circular economy challenge?

Energy demand is growing globally as the world's population increases. Carbon dioxide emissions are rising and 1.4 billion people still lack access to energy. LanzaTech is working to meet these challenges through carbon capture solutions which contribute significantly to the transition towards the circular economy.

What was the circular economy solution?

LanzaTech's novel gas-to-liquid technology has opened up opportunities for making low-carbon chemicals and fuels that displace petroleum without the environmental concerns associated with crop and land-based bio-products. The company's proprietary microbes capture and recycle waste gases before they are emitted as greenhouse gases, reducing harmful nitrous oxides by over 85 percent. LanzaTech licenses its technology allowing transferability and ease of implementation across industries and geographies. In 2017, the world's largest steel producer, ArcelorMittal, will use LanzaTech's technology to recycle waste emissions to produce ethanol. LanzaTech's customers benefit environmentally and economically. Economic factors are key when adopting a circular business model. At a steel mill, the LanzaTech process is twice as efficient as producing power from combusting gases. It also reduces emissions while generating revenue for the mill which can now sell products rather than use gases to make electricity for internal use.

What was the impact?

This circular and carbon smart technology has allowed LanzaTech to enable companies around the world to drive revenue from waste streams and work across sectors that previously would have been closed to them. LanzaTech estimates it can apply its process to 65 percent of the world's steel mills, with the potential to make 30 billion gallons of ethanol, or 19 percent of today's current jet fuel demand. Third-party calculations show that up to 70 percent of greenhouse gas emission reduction can be achieved compared to petroleum-derived gasoline. LanzaTech is independent of the food chain and avoids the impact of collecting, transporting and processing traditional feedstocks. As waste gases are unequally distributed in under-developed regions, their conversion to valuable products will create a more distributed fuels network, decoupled from commodity price fluctuations and accelerating energy democratization. LanzaTech also enables sustainable manufacturing in these countries and contributes to employment and industrial growth.

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Founded in 2003, Newlight Technologies has developed and commercialized a carbon capture technology that converts greenhouse gas emissions into a material called AirCarbon.

What was the circular economy challenge?

There are several environmental problems related to excessive carbon dioxide in the earth's atmosphere, the key problem being climate change. Facing the challenge, Newlight Technologies intended to turn an environmental problem into a solution by capturing harmful emissions in order to make desired products.

What was the circular economy solution?

Newlight Technologies has developed a transformational technology that converts greenhouse gas emissions into a plastic material that is able to out-compete oil-based plastics on price – a market-driven carbon capture solution. Using a breakthrough biocatalyst that increased yield by over 9 times relative to previous efforts, and fundamentally changed the economics of the conversion process, Newlight Technologies is now innovating with companies throughout its supply chain, from minor carbon emitters to Fortune 500 brands, in order to integrate AirCarbon technology into products and operations, replace oil with captured carbon, and change the way carbon emissions impact the world.

What was the impact?

Prior to Newlight Technologies, the cost to produce plastic materials from carbon emissions was three times higher than the cost to produce oil-based plastics. Therefore AirCarbon incentivizes industries to capture carbon emissions and provides a market-driven advantage to replace oil-based materials with greenhouse gas-based materials. Since 2013, the AirCarbon produced by Newlight Technologies has been adopted by top retailers to make products such as bags, furniture and clothing that would otherwise have been manufactured from oil-based materials. In 2015, Newlight signed a 20-year supply contract with Vinmar International for the supply of 19 billion pounds of AirCarbon – a global-scale purchase agreement for material made by using greenhouse gas emissions as a resource.

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AgriProtein Technologies, a natural protein feed business based in South Africa, is spearheading the new industry of nutrient recycling by mimicking nature via insect-based technologies.

finalist

What was the circular economy challenge?

The world urgently needs new sustainable sources of protein. Industrial farming of chickens, pigs and fish relies on protein from two sources: land-based soya plantations and marine fishmeal. Agricultural protein requires vast amounts of land and water, while the sea-caught alternative has consequences for the viability of marine life. A growing population, scarce water and land resources, as well as declining natural fish stocks, make this situation more critical than ever. Re-purposing and re-using old plastics and glass is commonplace, but little traction has been gained in saving the 33 million tons of waste food from landfill. This is crucial when considering new alternatives for high-protein demand.

What was the circular economy solution?

AgriProtein Technologies has developed a circular business model based on a nutrient recycling technology to utilize organic waste and turn it into multiple valuable resources, including protein for animal feed (MagMeal), organic soil enhancers (MagSoil), and lipids as another animal feed ingredient or for biodiesel (MagOil). AgriProtein Technologies helps divert 35,000 cubic meters per year of waste food from landfill, a saving that is crucial when considering new alternatives for high protein demand. The processes developed by AgriProtein Technologies means that otherwise unwanted waste has now become a valuable part of a nutrient recycling chain.

What was the impact?

AgriProtein Technologies provides an innovative and less expensive method for reducing waste in landfills by 35,000 cubic meters per year and estimates that its model will lead to environmental cost savings of over \$112 million each year. In the surrounding communities, AgriProtein Technologies offers sustainable alternatives for domestic and industrial organic waste producers to dispose of their waste. To date, 36 local companies including universities, food markets, and dairy and pet food companies have been able to utilize AgriProtein Technologies as an alternative to landfills. Job creation for local communities has also been a large benefit. The factory currently employs over 50 people and, when at full capacity, will employ 110 people. AgriProtein Technologies is currently present in Chile, South Africa and Australia, with plans to scale to 27 countries.

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New Hope EcoTech, a technology solutions company headquartered in Brazil, leverages informal recycling flows to create a formal pathway for manufacturers to fulfil their government mandates, all in an economic, transparent and inclusive way.

What was the circular economy challenge?

As the population grows and food consumption rises, an increasing amount of waste is directed towards landfills. The World Bank estimates that one to two percent of the global population subsists by waste picking. Most recycling rates in developing countries is due in part to those millions of waste pickers who work independently and entrepreneurially. In recent years, there has been an unprecedented regulatory policy movement to partially place the burden of recycling on the manufacturers who generate the waste. By connecting all of these different parties, there can be highly beneficial outcomes to the handling of waste and regeneration of materials.

What was the circular economy solution?

New Hope EcoTech leverages technology platforms to coordinate a set of spread and independent assets in order to provide a specific service. New Hope EcoTech's social platform connects manufacturers with waste pickers via innovative tradeable environmental securities (similar to carbon credits, but for recyclables). The company thus not only solves manufacturers' recycling obligations, it also increases overall recycling rates and generates additional income for waste pickers. Furthermore, the additional layer of income incentivizes the recycling actors to collect more (as in a "pay for performance" incentives scheme), and therefore increasing recycling rates. Another cloud-based web application tracks recycling flows in the independent waste-pickers' based supply-chain. The flow data is then used to certify recycling by consumer packaging goods manufacturers, thereby attesting to the closing of the circular economy loop within the packaging materials sector.

What was the impact?

New Hope EcoTech leverages the increasing digital penetration at the bottom of the social pyramid to gather data and create social and environmental impacts. In 2015, New Hope EcoTech will affect more than 1,000 actors in the recycling chain, track over 3,600 tons of recycled material and potentially issue over \$500,000 in certificates, sharing the value with the recycling parties. The circular model has allowed New Hope EcoTech to unleash intangible value to different stakeholders in the recycling industry. In addition, the additional stability generated for the certificates' income counterbalances the waste picker's exposure to material price volatility.

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Stuffstr PBC, a technology company based in the USA, has developed a mobile application aiming to make it easy for consumers, retailers and manufacturers to make sustainable choices.

finalist

What was the circular economy challenge?

The amount of municipal solid waste, one of the most important by-products of an urban lifestyle, is growing even faster than the rate of urbanization. Ten years ago there were 2.9 billion urban residents who generated about 0.64 kg of municipal solid waste (MSW) per person per day. It is estimated that today 3 billion urban residents generate 1.2 kg of waste per person per day and by 2025 this will likely increase to 4.3 billion residents and 1.42 kg per person per day. Against this scenario, Stuffstr realized there was huge potential in changing the behaviors of consumers accustomed to disposing of products without thinking about how to prolong their life.

What was the circular economy solution?

Stuffstr's key innovation is its mobile app that captures all purchase and product details directly from retailer databases, and makes it easy for users to repair, resell, give, share or recycle any item. This enables consumers to engage more fully in their possessions and dramatically improves recycling rates. Stuffstr's vision statement is "No Unused Stuff" and the company has developed an award-winning business model designed to accelerate the global shift to a circular economy. Stuffstr is also laying the digital infrastructure for a full range of circular programs including product take-back and buyback, product leasing, and Product-as-a-Service initiatives.

What was the impact?

Stuffstr expects to extend the average useful life of items by 20 percent and will raise awareness of the ways consumers use their items. By providing an app and enhancing ways in which consumers can engage socially over an item, the user can then discuss the product with other users, exchange wants and thoughts, make suggestions, and trace items, all while building engagement.

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Cirkle.be, based in Belgium, is an online shop that uses reverse logistics to combine grocery home deliveries with a free recycling service.

highly commended

What was the circular economy challenge?

The Food and Agriculture Organization (FAO) of the UN estimates that one-third of food produced annually for human consumption worldwide is lost or wasted along the chain, while also wasting the fuel, agricultural chemicals, water, land, and labor required to produce it. Secondly, the challenge of utilizing spare capacity of delivery vehicles, and thirdly the lack of a convenient service for reusing and recycling household waste.

What was the circular economy solution?

Cirkle.be developed software that solves the problem of food waste by matching actual consumption with an auto replenishment system. Along with innovative products that include recipe kits (exact ingredients to make a meal) and loose products sold by weight without packaging, Cirkle.be aims to cut the food waste, packaging waste and shopping time for every consumer. By offering a free recycling service with tangible benefits towards social causes, the company has created a clear value proposition for people to recycle and reuse their household waste. Cirkle.be takes back over 20 items of everyday household waste that may otherwise end up in landfills. To this end, the delivery vehicles of Cirkle.be are always full. By monetizing household waste, Cirkle.be's reverse logistics scheme has already raised €2000 for social causes.

What was the impact?

Though using reverse logistics is not a new concept, Cirkle.be supports its application in everyday situations. It perceives reverse logistics as an opportunity to gain a competitive advantage. The company's business model utilizes spare capacity in a way that benefits society and, at the same time, reduces waste and offers convenience and enrichment to the lives of its customers. Conventional food retailers typically lose around 10 percent to wastage due to unsold produce. In contrast, Cirkle.be's food wastage is less than 0.1 percent. By incentivizing people to sort their household waste instead of penalizing them when they don't, Cirkle.be aims to change the perception of waste in society and to offer services to help implement this paradigm shift. Cirkle.be intends to scale the business throughout Belgium over the next five years, and estimates that the associated circular economy benefits will be the facilitation of 10 tons of household waste to be reused or recycled, with €10,000 donated to social causes as a result.

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ECOALF

UPCYCLING WORLDWIDE

Founded in 2009, the Spanish company Ecoalf aims to create a fashion brand that is truly sustainable, specializing in the recycling of waste material for the creation of textile products.

highly commended

What was the circular economy challenge?

Studies indicate that we are presently using five times more natural resources than the planet is able to provide. Plastics play an important role in almost every aspect of our lives and we are presently using 20 times more plastics than we did 50 years ago. Specifically, textile production requires a huge amount of energy, water and resources input, negatively affecting the environment.

What was the circular economy solution?

Ecoalf create textile products and innovative accessories made with discarded fishing nets, post-consumer plastic bottles, worn-out tires, post-industrial cotton post-industrial wool, and even used coffee grinds. Ecoalf founded "Upcycling the Oceans," a revolutionary project to collect the discarded plastic bottles that are harming the Mediterranean Sea and turn it into top-quality thread. Using sophisticated research and design processes to recycle bottles from the ocean floor, the project's main objective is to develop production technologies that will allow the company to create a new generation of textile products and innovative accessories made with marine debris. Discarded fishing nets, post-consumer plastic bottles, worn-out tires, post-industrial cotton, and even used coffee grinds become outerwear, swimsuits, sneakers and accessories.

What was the impact?

Ecoalf aims to use its experience to become a pioneer in the fashion industry and give rise to a viable purpose for plastic waste on the ocean bed. In order to carry out such a complex and pioneering project, Ecoalf aims to surround itself with experts in each of the sectors that affect the project – for example, the ANTEX Spanish Textile group, textile group founded in 1968, the business of which is focused on the broad world of synthetic yarns. In general, Ecoalf estimates that its efforts can result in 20 percent savings in water expenses, a 50 percent reduction in energy consumption and a decrease in gas emissions of 28 percent.

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EcoTech Recycling is an Israeli-based technology company specializing in the recycling of rubber into valuable materials. EcoTech Recycling has its own patented technology based on continuous scientific developments and implementation.

highly commended

What was the circular economy challenge?

Rubber, both natural and synthetic, is a key commodity in markets throughout the world and is utilized in a multitude of industries. The largest consumer of rubber is the automotive industry. Tyres are among the largest sources of waste due to the large volume produced, their durability, and the fact they contain a number of components that are ecologically problematic. It is estimated that 259 million tyres are discarded annually. However, their availability, bulk and resilience, also make them attractive targets for recycling. Nonetheless more than half of used tires are simply burnt for their fuel value.

What was the circular economy solution?

EcoTech Recycling produces "Active Rubber" (AR), a 100 percent recyclable product, using waste as its feedstock and an extremely energy efficient process for a fraction of what synthetic or natural rubber costs to produce. EcoTech Recycling implements mathematical principles and physical and chemical methodologies to enable rejuvenation of waste rubber into AR. The company has been granted numerous patents worldwide. The lower costs enable EcoTech Recycling to market AR at a significant profit, ensuring strong industry impact and demand.

What was the impact?

The huge incentive for the industry is apparent as AR displaces the natural and synthetic rubber used today, fostering tangible savings and supporting environmental responsibility. AR is far less expensive than synthetic or natural rubber, since EcoTech Recycling's feedstock is worthless waste in comparison to oil used in production for synthetic rubber. It also requires 75 percent less energy to produce the same amount of synthetic or natural rubber. EcoTech Recycling's AR displaces significant amounts of natural and synthetic rubber used today in various rubber applications, significantly reducing the amount of rubber waste.

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highly commended



Delta M Incorporated is a Canadian company that recognized the opportunity to establish sustainable innovation leadership in the filtration industry. The company aims to help customers protect their costly heating, ventilation, and air conditioning (HVAC) equipment, protect the health of their building's occupants and reduce negative impacts of filtration on the environment.

What was the circular economy challenge?

The HVAC filtration industry has seen very little innovation in recent years. Historically, the primary role of air filters was to protect HVAC equipment, and most people considered them to be a single-use consumable. Typically air filters are constructed using cardboard frames and fiberglass or synthetic filter media. When the filters have reached the end of their useful life, they are disposed of in landfills. Materials such as polypropylene will never degrade in landfills and contribute to greenhouse gas emissions.

What was the circular economy solution?

Unlike conventional filters that are used once and then sent to landfill, Delta M manufactures purECOgreen™ filters designed to be put through its innovative Delta-Clean regeneration process for reuse for up to 48 months. As its filters reach the three to four-year maturity stage, Delta M cleans them for the last time and then breaks them up so that they can be repurposed into other manufacturing input materials. The business's circular manufacturing system is the cornerstone of its product differentiation and a vital reason for customers to choose Delta M's services. As a further incentive, customers who return Delta M filters are rewarded with a return rebate credit for future purchases.

What was the impact?

Since its inception, Delta M has diverted more than 5,000,000 filters away from landfill with this innovative program. The problem of single use filters is solved by its purECOgreent™ filters since they are manufactured using innovative methods and materials that hold up to a very harsh but effective regeneration process. The industrial design and selection of material is unique and makes them significantly more effective at preventing harmful particles to enter the HVAC air space, duct work and eventually the breathing space of the building tenants.

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alive. again and again.

DSM-Niaga is a joint venture of Royal DSM NV and Niaga BV that joined forces in 2014. Niaga® Technology makes it possible to reuse products again and again. So materials never go to waste and the materials' loop can be fully closed. The first product for which they designed materials and manufacturing technology, is carpet. Niaga® Technology offers a completely new way of making carpet, using pure materials only.

highly commended

What was the circular economy challenge?

Traditional carpets are made with latex which makes it impossible to separate the materials used in these carpets, thereby creating a massive amount of waste that ends up in landfill or incineration. Globally up to 5 billion square meters carpet is produced annually with only single digit percentages being recycled. By creating a technology that allows for re-use of materials, waste can become an economic asset and turned back into new products.

What was the circular economy solution?

Niaga® technology has created the world's first mono-material polyester carpet, which apart from being fully circular also has no volatile organic compound (VOC) emissions, has best-in-class flammability resistance and is easier to install than existing carpets. Niaga® technology can also be used in duo material carpet with polyamide, wool or polypropylene as face fiber. DSM-Niaga developed the necessary machinery, carpet materials, adhesives and recycling technologies to implement this disruptive technology on an industrial scale.

What was the impact?

DSM-Niaga's technology makes it possible to turn billions of kilograms of carpet waste every year into a valuable raw material instead of landfill or incineration feedstock. This creates a significant cost saving versus current raw material costs without compromising quality. DSM-Niaga spearheads a zero-waste carpet industry while also reducing energy use during production up to 95 percent and completely eliminating the use of water in making the carpet backing as well as toxic additives that are currently used in carpets. In addition, DSM-Niaga set-up premium partnerships defining partners, not in the classic customer supplier way of thinking, but as a network to realize disruptive change in a very conservative industry. Current partners include machine manufactures, suppliers of ancillary products, recycling experts, installation companies, brand and communication partners, and material science companies.

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Sustainer Homes, a Dutch start-up, designs and builds houses, holiday homes, and offices that allow you to live and work as comfortably as ever without any grid connections. Working together with the most innovative partners in solar power, wind power and water filtration available, Sustainer Homes close both energy and water cycles. Using only sustainably sourced wood, recycled and recyclable materials; Sustainer Homes are truly sustainable across their entire lifecycle with a carbon footprint significantly smaller than regular construction.

What was the circular economy challenge?

The challenge for Sustainer Homes is to set a new standard in the construction sector designing homes that are sustainable, comfortable and affordable. The current housing stock, mostly built with concrete and steel, is not flexible enough to meet fast changing lifestyles and household-sizes. Moreover, there are still plenty of ways in which the construction sector can reduce its CO2 emission and water usage by changing building materials and methods. Finally, new buildings must not use energy but produce energy and water for the people living and working inside.

What was the circular economy solution?

Sustainer Homes use a lightweight modular timber frame construction that has plenty of advantages over traditional materials such as brick, concrete and steel. With modules, customers are able to design the home that matches their needs without spending thousands of euros on architecture. Modules are easy to build and assemble: an entire house can be built in a matter of weeks. Keeping the end-of-life of our product in mind, we only use sustainable sourced wood, recycled and recyclable materials. Off-grid technology provides people with the opportunity to live without bills and independent from the grid. What's more, off-grid technology opens up new spaces for comfortable living, far away from any grid. Every house comes with a bathroom, kitchen and the most water and energy efficient appliances included. A Sustainer Home Modular starts at €75.000.

What was the impact?

In the past year, Sustainer Homes has been approached by more than 5000 people from over 70 countries, including municipalities, businesses, and building societies. After intensive experimenting in our demo model, we have sold the first Sustainer Homes to enthusiastic and brave pioneers. We will deliver their Sustainer Homes Modular in the summer of 2016. Building the first commercially viable, sustainable, off-grid homes will pave the way for a transition in the construction sector: sustainable and flexible construction; addressing the need of today's and tomorrow's people; and greater independence at an affordable price.

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WiseWaste is a Brazilian company developing recycling solutions and packaging, design thinking and lean methods to develop reverse logistics streams and impactful products made of waste.

highly commended

What was the circular economy challenge?

WiseWaste's various clients, such as P&G, Nestlé, Kimberly Clark, Mondelez that have challenges with their packaging and product waste, are looking for sustainable and innovative solutions to reduce waste to landfill. With WiseWaste's help they can address this challenge with creativity in a low-cost and profitable way, and bring value and scale to circular economy projects.

What was the circular economy solution?

WiseWaste has helped local government manage illegal garbage dumps by creating a free mobile App with that allows any citizen to report illegal dumps in real time with geo-location and image integration. In addition, WiseWaste increased the productivity of waste management companies by developing an automatic waste bin that generates collection routes based on real demand. The company also developed Brazil's first cosmetics packaging caps, made from recycled post-consumer flexible multilayer packaging. WiseWaste also created a corporate-academic integration program, "Adopt a Scientist", so that companies can support materials engineering Masters and PhD students studying and developing waste recycling solutions.

What was the impact?

WiseWaste has had a number of positive impacts including: aiding the reporting of hundreds of illegal garbage dumps to local governments; enhancing the productivity of public waste collection by 30 percent by helping waste companies avoid unnecessary collections; preventing thousands of tons of multilayer flexible packaging from going to landfill and instead are now being used as raw material to create packaging closure and caps; and pioneering a diaper recycling method and technologies via corporate-academic cooperation.

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The Award for Circular Economy Governments, Cities, & Regions

For the public sector programs
which are establishing the enabling
environment for the circular economy
to develop and flourish



TOGETHER WE
MAKE TOMORROW
MORE BEAUTIFUL

OVAM

The Flanders' Materials Programme, a public-private initiative run by OVAM, the public waste and materials agency in the Flanders region of Belgium, combines ambitious long-term vision development, experimental pilot projects, policy-relevant research and concrete priority actions on the basis of an iterative road-mapping process to accelerate the transition to a circular economy.

What was the circular economy challenge?

Governments are aware that, given the world's population increase and steep rise of the global middle class, there is a need for resource security and resource efficiency. Flanders recognized that government, business, civil society, centers of expertise and consumers do not have the knowledge or the instruments to independently achieve the transition to a circular economy.

What was the circular economy solution?

Through the Flanders' Materials Programme (FMP), government, industry, centers of expertise and civil society are joining forces to stimulate technological innovation, social innovation, business model change and digital innovation. Each stakeholder within the FMP takes up a chosen action package for which they carry full responsibility, they invest in and steer those actions in interaction with the other stakeholders. To be able to achieve tangible results and to demonstrate how the circular economy is implemented in practice, the stakeholders of the FMP bring in their network of frontrunners and their specific expertise. The output is then further disseminated to the broader network of FMP stakeholders and communities – for example, by showing businesses cases that activate and engage new partners to the FMP. Another example can be seen in the transdisciplinary workshops where different players in the value chain work together to find solutions for closing the material loop.

What was the impact?

This integrated approach has served as a distinctive market advantage for Flanders. In 1988, average inhabitants of Flanders recycled no more than 10 percent of their waste. Today, about 71 percent of household waste in Flanders is collected separately at the source to be reused, recycled or composted, and less than 1 percent of all household waste is being landfilled. Moreover, Flanders's turnover is around €3.7 billion, which constitutes 0.5 percent of the Flemish employment. Research has indicated the economic benefits of the circular economy for Flanders were from 2 to 3.5 percent of the Flemish GDP due to material cost savings, and the creation of 27,000 additional jobs, ranging from high-tech to low-skilled.

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REDISA is an organisation formed by a unique collaboration between the government and the private sector to improve waste management in South Africa. REDISA's focus is on the development of a new tyre recycling industry.

What is the circular economy challenge?

It is estimated that there are 60 million to 100 million scrap tyres stockpiled in South Africa. The tyres are a fire hazard, pollute the environment, and provide breeding grounds for insects that spread disease, such as mosquitoes. Furthermore, South Africa faces significant challenges around unemployment and the need for empowered small medium and micro enterprises (SMMEs).

What is the circular economy solution?

REDISA's Integrated Industry Waste Management Plan (IIWMP) was legislated in November 2012. Through the IIWMP, tyre manufacturers and importers are charged a waste tyre management fee of R2.30 + VAT on every kilogram of new rubber tyres. The cost of dealing with waste tyres is incorporated into the manufacturing cost of the tyres. REDISA uses the collected fees to fund the development of recycling industries, establish reverse logistics networks, and to carry out research and development. The money is used in an audited and accountable fashion with the funds directly and specifically allocated to dealing with waste tyres. This makes it more effective than a tax-based system where funds sink into the general treasury. Statistics show that, before REDISA existed, South Africa was dealing with only 4 percent of the total tyres being generated as waste. REDISA has increased that to 70 percent within three years, and is well on its way to achieving 100 percent by 2017.

What was the impact?

At the end of November 2015, more than 17 000 tons of tyres had been collected and diverted from landfills in the country. Overall, the plan not only solves issues of pollution, fire, risk and disease, but also replaces the legacy of waste tyres with a new legacy of income-generating opportunities, dignity and hope for thousands of South Africans.

The social impact in terms of job creation has been notable, with more than 3 000 jobs created in less than three years. It is the stories of those who have been directly impacted by REDISA that brings to life the change this new industry has made possible. REDISA has also put 80 percent of its revenue collected into supporting the circular economy, through investment back into industry and creating a market for the handling of waste tyres.

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**CITRUS
HEIGHTS**
CALIFORNIA

Citrus Heights, California signed on for the first-ever Energy Bag Pilot Program, a public-private collaboration with The Dow Chemical Company and other partners to mine fuel from typically non-recycled plastics (NRPs), keeping them from landfills. The program proved that NRPs such as plastic dinnerware can be successfully collected and converted into energy at the U.S. municipal level, and that pyrolysis projects are possible within the U.S. recycling infrastructure.

What was the circular economy challenge?

Despite recycling programs, over half of U.S. trash goes to landfills. The lifecycle cost, performance and sustainability benefits of flexible plastic packaging are well documented. Recycling challenges remain, however, and although these materials have value, that value cannot be realized through traditional mechanical recycling. Major challenges include developing a viable system to move raw materials from residents' garbage bins to recovery plants and changing homeowners' waste management habits.

What was the circular economy solution?

Citrus Heights and The Dow Chemical Company overcame challenges by leveraging their own and their collaborators' technical expertise and broadly communicating the recycling alternatives and benefits that a pyrolysis project can provide. Citrus Heights was therefore introduced as a new way to recycle, requiring virtually no extra effort by its residents. Approximately 26,000 households received "Energy Bags" to collect plastics not currently eligible for mechanical recycling. One of the collaborators, Agilyx, applied thermal pyrolysis technology to convert the NRPs into synthetic crude oil. Approximately 6,000 pounds were diverted from landfills and 512 gallons of synthetic crude oil were produced, which can be refined to make products like gasoline and plastic.

What was the impact?

The Energy Bag pyrolysis process resulted in 58 percent conversion efficiency, an enormous waste reduction, as well as an increased awareness for environmental challenges associated with waste. The Energy Bag Pilot Program is ideal to educate policy makers, companies, associations and the public about the untapped opportunity in plastics-to-energy. Key learnings from the Citrus Heights program are being shared with the public as a potential blueprint to build scaled-up programs in the future by other cities, companies and associations. A second program is being planned by The Dow Chemical Company to validate the findings and assumptions generated by the Citrus Heights program.

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The City of Sydney is committed to transforming environmental performance under its Sustainable Sydney 2030 strategy. Part of delivering on this commitment is the development of the Better Buildings Partnership (BBP), a collaboration between major institutional property owners and funds under management in Australia.

What was the circular economy challenge?

In Sydney, 400,000 square meters of office space every year creates 25,000 tons of waste, the majority of which goes to landfills. The BBP recognized an opportunity for radical market change and commissioned work to understand the volumes of waste materials generated, their current recycling pathways and opportunities for improvement.

What was the circular economy solution?

The BBP engaged industry and government to focus on each waste material, linking tenants, landlords and contractors to develop solutions, re-engineer processes and enable change. By bringing together companies with over \$1 billion of assets across Australia in a long term collaboration with policy makers, peak industry bodies, and local and state governments, the BBP has been able to engage the market. The BBP's design-thinking process brings together a diverse group of 200 stakeholders from across the supply chain, including designers, specifiers, product manufacturers, facility operators, charities, builders and demolition contractors, to hear their challenges and provide greater alignment to unlock the good intentions that exist. The BBP then writes up this emergent best practice into guidelines and toolsets for the industry. Its principles, management toolsets and processes are highly replicable in multiple markets and asset types.

What was the impact?

Rapid, iterative proof of concept trials run by the BBP confirmed the city's ability to overcome barriers to waste management and resulted in a realistic roadmap for a circular market model that is able to divert 20,000 tons of waste per year in Sydney. BBP members have set 60 percent recovery targets for all future projects and continue to work on systemic and practical ways of raising rates towards 80 percent by 2020.

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The National Zero Waste Council is a leadership initiative bringing together governments, businesses and non-government organizations to advance waste prevention in Canada. Founded in 2013 by Metro Vancouver, in collaboration with the Federation of Canadian Municipalities, the Council has united some of Canada's largest metropolitan regions with key business leaders, other levels of government, and academia and non-profit organizations in a call for national action and systems change to address the problem of waste generation.

What was the circular economy challenge?

A 2013 Conference Board of Canada Report ranked Canada among the highest per capita waste generators of 17 OECD nations. This affirmed the need for a new approach, recognizing that waste is expensive to manage, increases demand for natural resources, and is a missed opportunity to extract more value from what is currently produced and consumed. As the factors that drive waste generation are cross-cutting – public policy, consumer behavior, product design and packaging, etc. – solutions require cross-sector collaboration at a systems level. In Canada, a bilingual nation of 34 million governed by a decentralized federation, this calls for high levels of coordination and collaboration to build partnerships and new solutions.

What was the circular economy solution?

The Council acts as a change agent linking those committed to and leading waste prevention, and aligning Canadian efforts with a global shift towards a circular economy. The Council is leading the national conversation by showcasing the best programs and policies in Canada and internationally that are relevant to Canadian business and all levels of government. By connecting stakeholders and leaders, the Council has linked itself to the global movement to prevent waste and empowers its members to drive change. The latter is accomplished by providing the tools, policies and programs for businesses and governments in Canada to advance their own efforts. This includes, for example, an initiative to incentivise food retailers to donate nutritious food to charitable organizations, preparing case studies demonstrating the business benefits of circular models, and an online portfolio celebrating Canadian products and packaging designed with waste prevention in mind.

What was the impact?

Significant time, resources and money have focused on “end of pipe” waste management and the Council is the only cross-sector organization in Canada devoted to shifting that focus upstream, calling for national action to address waste generation. By reframing the conversation away from waste management, the Council is positioning waste prevention and the circular economy as an opportunity for Canadian businesses and communities to effectively compete in a resource constrained world, offering scope for innovation, job creation, competitiveness and cost savings.

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Relooping Fashion initiative is working to re-invent the fashion industry by giving post-consumer textiles a new life. The program aims to create a closed loop business ecosystem for textiles in accordance with the principles of circular economy and shared value.

What was the circular economy challenge?

70,000 tons of clothing is thrown away in Finland each year, and globally the numbers are overwhelming. Currently there is no technology, nor a supporting ecosystem, available to handle this textile waste. Large amounts of material are either incinerated or dumped into landfills. Undamaged clothing can be re-used and there are options for mechanical recycling, but the resulting quality is not sufficient for producing recycled cloths in larger industrial scale.

What was the circular economy solution?

During the program, post-consumer cotton no longer suitable for reuse, is dissolved to cellulose solution and turned into new fiber. With the new cellulose dissolution technique, the quality of the new fiber is expected to be equal to or even better than virgin cotton. During the program the entire supporting closed loop business ecosystem is being modelled and piloted, and the first commercial clothing line will be produced. The participating companies represent the entire closed loop: Helsinki Metropolitan Area Reuse Centre, SUEZ, Pure Waste Textiles, Seppälä, RePack, Touchpoint and Lindström. The public research is coordinated and carried out by VTT Technical Research Centre of Finland and circular economy consultancy Ethica, and funded by Tekes, the Finnish Funding Agency for Innovation.

What was the impact?

Adopted on a large scale, the new technology will help reduce the huge amount of textile waste currently ending up to landfills or incineration, and the negative environmental and social impacts related to cotton farming. Compared to virgin cotton, the new recycled material reduces water footprint by 70 percent and carbon footprint by 40 to 50 percent. In addition, the new technology and the supporting business ecosystem has huge potential to create new shared value based business opportunities across different sectors.

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highly commended



The Dubai municipality implements programs, strategies and policies in partnership with stakeholders and the community to ensure the sustainable use of natural resources, energy and water efficiency.

What was the circular economy challenge?

With issues of climate change, growing urban populations and increased demand for water and energy from competing sectors, wastewater recycling and use of renewable energy is becoming an important strategy to complement the existing water and energy resources in the United Arab Emirates.

What was the circular economy solution?

In order to optimize the use of water and energy resources, the Drainage and Irrigation Network Department of Dubai municipality has adopted a circular and resource-optimized business model in collaboration with various private sectors, which includes the use of recycled water for landscape irrigation, substituting fossil fuels with renewable energy to power the irrigation networks and the establishment of recycling facilities for grease waste. In addition to clearly defined sustainability policies and practices, the department is striving continuously to reduce its carbon emissions through diverse environment friendly projects and activities. The department monitors the energy consumption and water utilization, strengthens employee training, community awareness, and encourages public private partnerships and stakeholder engagements.

What was the impact?

The city is working to manage its water use through sustainability best practices. For example, in 2014, About 169 million cubic meters of treated (recycled) water was used for greening the city area of about 24 million square meters which has substantially reduced the carbon foot prints and use of fossil fuels. By employing solar energy for landscape irrigation at various traffic roundabouts, their initiatives have eliminated about 6.3 tons of greenhouse gas emissions annually. In addition, about 38 million litres of grease waste has been collected and processed in recycling facilities to produce soil, water and oil and reused for composting, irrigation and cosmetic industries respectively. These positive outcomes has fostered the move towards a more sustainable city management, and also created more job opportunities while encouraging private sector investments in the waste water sector.

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Buenos Aires Ciudad

The City of Buenos Aires is moving towards sustainability through public policies and the increasing use of technology. Buenos Aires founded the Green Economy Centre to foster technological innovation, environmental awareness and responsible consumption.

highly commended

What was the circular economy challenge?

If environmental progress is to achieve a multilevel approach to sustainable development, local governments need to enhance communication on the concept of megacities. Despite the centrality of local governments and actors in dealing with sustainability issues, they also confront fundamental limitations and lack effective mechanisms to impact the systems of production and consumption to ensure circular city management.

What was the circular economy solution?

Buenos Aires established a series of cross-sectoral partnerships, involving actors critical for local and national development, to encourage projects working towards the implementation of circular economy principles. In addition, the city founded the Green Economic Center (GEC) promoted by the Environmental Protection Agency (APRA) of the Government of the City of Buenos Aires, which seeks to foster new economic thinking following environmental parameters. The GEC has begun with the promotion of green jobs, understanding it as the first way to engage people with the circular economy. It also seeks to strengthen the environmental paradigm in business, through the Cleaner production (CP) program and green entrepreneurs of the city, through direct contact with them and relevant government departments. Ultimately, the GEC is harmonizing the key aspects of the circular economy to promote and accelerate them in the local context.

What was the impact?

In their move towards transforming the productive sector into a sustainable economy, the Buenos Aires government received a donation from METROPOLIS, the leading international association of cities and metropolitan regions with more than a million inhabitants. With those funds, the city was able to develop projects assessing the current environmental status of its productive sectors, initiatives to encourage the creation of jobs related to sustainability and the circular economy, and the coordination between the public and private sector to jointly search for circular solutions.

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Warwickshire County Council has competitively franchised the operation of eight recycling center re-use shops in a process won by Age UK Warwickshire. As well as raising millions of pounds for the charity, the ground-breaking partnership is providing a sustainable income stream for the authority and diverting thousands of tons of material from landfill.

highly commended

What was the circular economy challenge?

According to the Local Government Association, nearly 615,000 tons of material that currently finds its way to landfill or incineration could instead be repaired, resold or donated. Diverting this material away from landfill or incineration would save taxpayers more than £60 million each year while the resale value of these goods and materials is approximately £375 million.

What was the circular economy solution?

Warwickshire's recycling centers re-use shops network is diverting 800 tons of material a year from the waste stream. In addition, the funds raised from the stores stay in Warwickshire to support a variety of charitable causes. Both Warwickshire County Council and Age UK Warwickshire are active members of the Coventry, Solihull and Warwickshire Re-use Forum, a cross-sector partnership promoting best practices and helping to increase capacity re-use across the sub-region. Over the past 12 months, more than 200 representatives from UK waste authorities, waste management companies and third-sector organizations have visited Warwickshire recycling center re-use shops on best practice tours. To date Warwickshire has shared its re-use shops' tender packs and contract documents with more than 12 local authorities and waste partnerships.

What was the impact?

Scaling up the Warwickshire re-use shops franchise model to the UK's remaining 1,056 recycling centers would generate an additional £35 million a year for local authorities. The symbiotic relationship between social enterprise and public recycling facilities demonstrates the circular economy in action, underpinning the triple bottom line of social, environmental and economic benefit.

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The Alliance Trust Award for Circular Economy Investor



For an investment body which is
providing financial backing for the
circular economy to become mainstream





DLL is a global provider of asset-based financial solutions working with equipment manufacturers, dealers, and distributors in more than 35 countries and 9 industries. The company is committed to providing integrated financial solutions that support the complete asset life cycle and helping its customers successfully navigate a challenging and evolving market environment. DLL believes in new, sustainable and circular business models that combine profitability with environmental and social benefits.

What was the circular economy challenge?

The global economy is constantly transforming and consequently customer needs are evolving. While working with its manufacturer and distributor partners, DLL observed that the need for second and third life equipment in emerging markets is declining. Used equipment tends to remain in its country of origin while manufacturers continue to push the sale of new assets in those same markets. As such, there is increased pressure to create more sustainable business models that consider the reuse and refurbishment of assets. DLL is committed to providing financial backing for these circular solutions to become mainstream.

What was the circular economy solution?

Through its Life Cycle Asset Management (LCAM) program, DLL encourages its partners (manufacturers & dealers) to consider the full technical life of their equipment. With a focus on usage rather than ownership of assets, the LCAM program embraces the economic management of assets throughout their entire life cycle. DLL works with its partners to highlight the potential business opportunities of managing and trading second and third life equipment, thereby actively pushing for refurbishment and remanufacturing.

What was the impact?

DLL's original business model focused exclusively on financing new equipment at the point of sale. In general, leasing solutions are extremely common for new equipment sales. Financing second hand, refurbished or remanufactured equipment, on the other hand, is less common as it demands a more advanced skillset from a financial institution – price verification, establishing legal ownership, and determining the quality of the equipment is much more difficult. DLL chose to expand its leasing capabilities to cater to the second hand market in order to accelerate the adoption of refurbished equipment. Today, 2 percent of DLL's leasing portfolio is second and third life equipment. DLL expects this percentage to grow to 20 percent by 2025. Finally, DLL has made a concerted effort to work alongside its partners in addressing the challenges of adopting circular economic principles. Believing that circular solutions can only be developed through close collaboration with others, DLL has developed a series of white papers to share their learnings and hopefully inspire other companies.

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The Closed Loop Fund, based in New York City, is an innovative financing mechanism that convenes major stakeholders across consumer goods industries to invest in the infrastructure required to collect and process products and packaging.

What was the circular economy challenge?

Public recycling systems are still facing major bottlenecks, hampering their efficient and widespread rollout. This includes collection in low income and multi-family communities, optimized sorting of materials that are currently difficult to sort, and processing of challenging materials like glass and film plastics. By leveraging private capital to unlock public funds and empowering consumers to recycle, the Closed Loop Fund shines a spotlight on a cause that has thus far been relegated to the backburner of municipal budgets.

What was the circular economy solution?

By providing zero-interest loans to municipalities and below-market interest rate loans to companies, the Closed Loop Fund is committed to providing consumers the opportunity to recycle more easily and efficiently, and to giving municipalities an enhanced ability to recycle material and improve their recycling rates. As investments mature, the Closed Loop Fund will serve as a center of excellence by providing business cases that other municipalities can trust for funding, providing scale beyond the initial capital. The Closed Loop Fund plans to collaborate closely with governments and local economic development corporations to assist execution, advise on strategy and help course-correct when needed to reach the optimal results.

What was the impact?

To date, the fund has raised more than \$60 million. Initial investors include 3M, Coca-Cola, Colgate-Palmolive, Dr Pepper Snapple, Johnson & Johnson Family of Consumer Companies, PepsiCo, Procter & Gamble, Unilever, and Walmart. Thus the Closed Loop Fund ensures buy-in from major consumer goods companies, presenting the case that short-term investment in the development of a more efficient recycling infrastructure will generate long-term value and cost savings. The Fund expects to invest \$100 million, an unprecedented amount, over the next five years.

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ArcTern Ventures is Canada's leading early-stage cleantech investor. Among its key investment criteria is the potential to significantly impact carbon emissions and the sustainable use of resources. Unlike most cleantech venture investors, ArcTern Ventures is willing to invest in pre-commercial companies with breakthrough technologies.

What was the circular economy challenge?

ArcTern Ventures looks for breakthrough ideas in the cleantech sector that can have dramatic impacts on climate change and the sustainable use of resources. The organisation believes greater investment is needed in a vast array of different sectors like renewable energy, waste and recycling, advanced materials, smartgrid, and energy efficiency to address a broad scope of environmental challenges.

What was the circular economy solution?

The Fund has developed a unique early-stage investment model through its partnership with global cleantech incubators, like MaRS Discovery District and the Los Angeles cleantech incubator, two of the largest cleantech innovation hubs in world. With each of its investee companies, ArcTern Ventures takes an active role assisting them with business strategy, fundraising, and corporate development and works closely with partner incubators to help these companies commercialize their products globally. For instance, one of the portfolio companies, Morgan Solar, is selling a concentrated photovoltaic solar panel, with almost twice the efficiency of a traditional PV module, which radically lowers the levelized cost of solar.

What was the impact?

The Fund has invested approximately CAN\$40 million in 10 portfolio companies across the cleantech spectrum and has generated strong investor returns. The investment team is very hands-on, working closely with all portfolio companies to help them accelerate their time-to-market. At least half of ArcTern Ventures' investment portfolio is in renewable energy companies with the potential to dramatically increase the use of renewable energy worldwide. The remaining companies are all indirectly supportive of sustainable use of resources. The general partners plan to raise a second \$100 million fund in 2016, with a broader mandate and a sister office in California.

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Circularity Capital is a specialist investment firm that supports the growth and innovation of small-to-medium sized enterprises within the circular economy. Circularity Capital is based in the UK and targets investment opportunities across Europe.

What was the circular economy challenge?

In a global macroeconomic environment that is driving the transition away from an inefficient linear economy to a circular economy, companies that seize on the growth opportunity can generate premium returns for investors. The challenge is therefore to provide businesses with the right access to talent, market, information and capital to enable them to unlock their full growth potential.

What was the circular economy solution?

Innovative small and medium enterprises (SMEs) are proactively capturing the circular economy growth potential and provide a strong and active market in which to source investment opportunities. Circularity Capital's team combines specialist circular economy expertise and over 40 years of investment experience. The firm's thorough investment process begins with the application of a positive circular economy screen to identify high potential investment opportunities. 100 percent of businesses are required to fit the circular economy screen and thus be operating in or accelerating the circular economy. The company is currently raising £50 million to target equity investments of £1 million to £5 million in European growth SMEs.

What was the impact?

Circularity Capital's focus results in crucial financial and operational support for those businesses that are fostering circular economy principles and in turn is helping to trigger a broader shift of capital towards the circular economy. The investment process ensures alignment of stakeholders and creates an environment where Circularity Capital can work together with the management teams to enhance the capital value, typically over a three- to five-year period. Circularity Capital's long-term mission is to catalyze the large-scale movement of institutional capital towards the circular economy.

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INTESA SANPAOLO

Intesa Sanpaolo, a European banking group headquartered in Italy, seeks to be a responsible financial intermediary by supporting and advancing the transition towards the circular economy.

What was the circular economy challenge?

The financial industry plays a central role in the collective action for change aimed at re-defining the global economy. In order to successfully manage the cultural shift from linear to circular economy principles, strategically well-placed players with the right expertise and innovative mentality are needed to drive that change.

What was the circular economy solution?

Intesa Sanpaolo partners with research and development centers across the globe to scout start-ups, aiding the adoption of new circular economy protocols, and launches joint programs with distinct circular champions. It evaluates possible match-making opportunities to introduce promising start-ups to its medium and large corporate clients, creating win-win solutions. Intesa Sanpaolo disposes over a large domestic network with approximately 4,200 branches, approximately 14 percent market share and 11.1 million clients in Italy enabling them to act as a platform to create new initiatives and relationships to experiment and implement circular business models.

What was the impact?

Intesa Sanpaolo is among the leading European financial institutions supporting the European Investment Bank's efforts to develop the circular economy in Europe. The circular economy has not only enhanced Intesa Sanpaolo's existing capacity to invest in innovation, it has also resulted in its status as a leading financial institution working with the local Government and cities to promote new forms of circular economic development, growth and employment across Europe.

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Convent Capital is an independent Dutch private equity firm focused on medium-sized companies within the Benelux countries. It invests in companies that have a strong track record and possess strategic and operational opportunities to create sustainable value.

highly commended

What was the circular economy challenge?

Though the importance of circular businesses is becoming increasingly visible, traditional financial institutions sometimes do not fully grasp circular economy models and are not equipped for supporting the working capital impact of a transition. They lack the knowledge and expertise to help management teams and companies with linear models, but possess a willingness to adapt to make the transition towards a circular economy in a responsible way.

What was the circular economy solution?

Convent Capital prepares reports on the circularity performance of its portfolio companies and helps them create a strategy roadmap toward circularity. Its methodology for creating Environment Social Governance (ESG) scans enables Convent Capital to more objectively identify ESG issues and opportunities, more accurately measure and monitor progress of the integration of sustainable value creation in the daily operations, and compare the companies in the portfolio with each other. In short, ESG scans make the concept of a transition from a linear to a circular economy transparent, measurable and provide concrete suggestions for implementation.

What was the impact?

Circularity is at the core of Convent Capital's investment process from identifying investment opportunities to the monitoring process, where it employs its own reporting tool to enhance the quality of discussions with management teams in order to push the move towards circularity. Its investments primarily focus on businesses that intend to embark on a circular transition and support them in doing so rather than boosting already established circulars. Since 2011, the company has looked at more than 125 potential investment propositions, completed six successful acquisitions and realized one exit. Convent Capital has so far invested €18 million in its portfolio companies, all on their way to becoming circular.

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STC
Merade



Carlo Van Kemenade, COO, DLL Group, is presented the Alliance Trust Circular Economy Investor Award by Katherine Garrett-Cox, Former CEO, Alliance Trust



The BT Award for Circular Economy Digital Disruptor

For companies who are disrupting
business as usual by enabling the circular
economy with data driven technologies



United States Business Council
for Sustainable Development

The US Materials Marketplace is a collaboration led by the US Business Council for Sustainable Development (US BCSD), the World Business Council for Sustainable Development (WBCSD) and Corporate Eco Forum to track and exchange undervalued materials via a cloud-based database, establish new circular supply chains, and identify policy changes supportive of the circular economy.

What was the circular economy challenge?

To further embrace circularity, companies from across different locations and industries need to collaborate and innovate, which requires cross-sectoral partnerships to open up new possibilities. Materials Marketplace strives to facilitate company-to-company industrial reuse opportunities, supporting the transition to a circular, closed-loop economy.

What was the circular economy solution?

The US BCSD Materials Marketplace is an online tool that enables By-Product Synergy project participants and practitioners to easily post materials available or desired, identify reuse opportunities and exchange underutilized materials. Materials Marketplace acknowledges the fact that the online tool has already had good success which has opened the door for new activities such as paving the way for smaller solution providers to work with bigger multinational companies. In such a way, Materials Marketplace is bridging socio-economic gaps by bringing together smaller designers and other players to work with big organizations.

What was the impact?

Results from a 2015 three-month pilot in the US include: participation by 22 multinational companies; 67 recommended exchange possibilities (12 actively being pursued); 2.3 million tons of materials uploaded to the database by 78 facilities; and active engagement with city, state and federal governments. The initiative found that, while some companies may have initially joined to address waste reduction objectives, the exposure to innovative and compelling material matches between companies has been inspiring participants to more creatively examine their supply chains and products. Building on the success of the pilot, the Materials Marketplace expects to expand to 100+ participating organizations in the US, and scale to other regions through combined organizational networks.

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Stuffstr PBC, a technology company based in the USA, has developed a mobile application aiming to make it easy for consumers, retailers and manufacturers to make sustainable choices.

What was the circular economy challenge?

The amount of municipal solid waste, one of the most important by-products of an urban lifestyle, is growing even faster than the rate of urbanization. Ten years ago there were 2.9 billion urban residents who generated about 0.64 kg of municipal solid waste (MSW) per person per day. It is estimated that today 3 billion urban residents generate 1.2 kg of waste per person per day and by 2025 this will likely increase to 4.3 billion residents and 1.42 kg per person per day. Against this scenario, Stuffstr realized there was huge potential in changing the behaviors of consumers accustomed to disposing of products without thinking about how to prolong their life.

What was the circular economy solution?

Stuffstr's key innovation is its mobile app that captures all purchase and product details directly from retailer databases, and makes it easy for users to repair, resell, give, share or recycle any item. This enables consumers to engage more fully in their possessions and dramatically improves recycling rates. Stuffstr's vision statement is "No Unused Stuff" and the company has developed an award-winning business model designed to accelerate the global shift to a circular economy. Stuffstr is also laying the digital infrastructure for a full range of circular programs including product take-back and buyback, product leasing, and Product-as-a-Service initiatives.

What was the impact?

Stuffstr expects to extend the average useful life of items by 20 percent and will raise awareness of the ways consumers use their items. By providing an app and enhancing ways in which consumers can engage socially over an item, the user can then discuss the product with other users, exchange wants and thoughts, make suggestions, and trace items, all while building engagement.

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Apto Solutions is a global IT asset disposition (ITAD) leader offering its clients everything they need to manage the risks and complexities of IT asset disposition with ease and to maximize value recovery. Apto Solutions has been instrumental in the evolution of the ITAD industry from a loosely controlled collection of equipment brokers to a tightly controlled industry based on service, best practices and oversight.

finalist

What was the circular economy challenge?

Interchangeable cloud architectures have changed the data center landscape, and the increased use of tablets and proliferation of mobile devices continue to complicate information technology lifecycles and exacerbate the e-waste problem. Yet many companies, including Fortune 500 companies, do not have all of these pieces in place to deliver timely and cost-effective lifecycle turnovers to recapture devices at the end of their useful life and incorporate recycled materials from them into the creation of new equipment.

What was the circular economy solution?

Apto Solutions' AptoPulse portal provides a comprehensive view of its customers' asset disposal lifecycle as it refurbishes, resells, or recycles their equipment. Each tab offers real-time insights into a specific area of their business. From one screen they can track the logistics of any associated asset; track shipments on an in-transit map; view and download financial reports; and view and download certificates and logs that verify the safe sanitization of data from all devices. The report tool, Eco Summary, provides a customized analysis of a client's environmental impact. The brand new digital tools eliminate the visibility hole that typically exists in company's circular systems, and makes it easy to verify the efficacy of cyclical reuse and resale programs. In general, Apto Solutions focuses on building industry-leading tools that inject transparency into a traditionally opaque industry.

What was the impact?

Apto Solutions recovers value from its customers' unwanted assets, protects them from costly data breaches, and helps them meet their corporate sustainability goals all in a single, integrated process that prolongs the useful life of their technology before finally recycling it back into the economy. In 2014 alone, companies that Apto Solutions worked with saved over 14,800 metric tons of fossil fuels and 19 million gallons of water, and also prevented 1,315 metric tons of hazardous waste from ending up in land-based disposal areas.

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AutoGrid Systems, an Energy Internet company based in the USA, aims to organize the exponentially increasing amount of energy data produced from a networked and automated grid and make it useful and actionable by utilities, electricity retailers, energy service providers, energy project developers and their customers.

What was the circular economy challenge?

The expense and complexity of traditional electric grids that use centralized generation to burn fossil fuels has placed access to power out of reach of approximately 1.2 billion people. As regulatory, environmental and market forces decrease the world's reliance on fossil fuels and force it to make more efficient use of its resources, AutoGrid embraced a circular economy business model to improve supply and demand management in the energy sector. With the deployment of smart meters, distributed generation and other building and grid-sensing technologies now reaching critical mass, all participants in the electricity supply chain find themselves having to process and analyze thousands of times more data than they've had to before. Dealing with the deluge of data is a challenging task and most organizations have yet to take advantage of this information.

What was the circular economy solution?

AutoGrid is implementing transformational change in the energy sector by enabling the development of an Energy Internet with big-data analytics and cloud-based applications that make the grid more efficient, power more reliable, and electricity more affordable, disrupting the trillion-dollar energy industry. Unique among solution providers in the energy space, AutoGrid offers predictive analytics that provide utilities with insight into what will happen in the future and enabling them to generate highly accurate forecasts of resource behavior, optimize resource dispatch, and manage resources in real time. AutoGrid's modular design technology also enables a single platform (AutoGrid's Energy Data Platform) to support a variety of resources, including wind, solar, energy storage and more.

What was the impact?

AutoGrid has focused on developing core capabilities that will enable utilities and energy service providers to use big data and the Energy Internet as a new source of power. Overall, AutoGrid increases the value of all of the grid's generation, transmission and demand-side assets, maximizing the affordability and reliability of electricity delivered by the grid while minimizing the resources needed to deliver this electricity. AutoGrid's solutions also allow developing nations to cost-effectively extend the benefits of reliable, affordable energy to more people, reducing energy poverty.

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New Hope EcoTech, a technology solutions company headquartered in Brazil, leverages informal recycling flows to create a formal pathway for manufacturers to fulfil their government mandates, all in an economic, transparent and inclusive way.

What was the circular economy challenge?

As the population grows and food consumption rises, an increasing amount of waste is directed towards landfills. The World Bank estimates that one to two percent of the global population subsists by waste picking. Most recycling rates in developing countries is due in part to those millions of waste pickers who work independently and entrepreneurially. In recent years, there has been an unprecedented regulatory policy movement to partially place the burden of recycling on the manufacturers who generate the waste. By connecting all of these different parties, there can be highly beneficial outcomes to the handling of waste and regeneration of materials.

What was the circular economy solution?

New Hope EcoTech leverages technology platforms to coordinate a set of shared and independent assets in order to provide a specific service. New Hope EcoTech's social platform connects manufacturers with waste pickers via innovative tradeable environmental securities (similar to carbon credits, but for recyclables). The company thus not only solves manufacturers' recycling obligations, it also increases overall recycling rates and generates additional income for waste pickers. Furthermore, the additional layer of income incentivizes the recycling actors to collect more (as in a "pay for performance" incentives scheme), and therefore increasing recycling rates. Another cloud-based web application tracks recycling flows in the independent waste-pickers' based supply-chain. The flow data is then used to certify recycling by consumer packaging goods manufacturers, thereby attesting to the closing of the circular economy loop within the packaging materials sector.

What was the impact?

New Hope EcoTech leverages the increasing digital penetration at the bottom of the social pyramid to gather data and create social and environmental impacts. In 2015, New Hope EcoTech will affect more than 1,000 actors in the recycling chain, track over 3,600 tons of recycled material and potentially issue over \$500,000 in certificates, sharing the value with the recycling parties. The circular model has allowed New Hope EcoTech to unleash intangible value to different stakeholders in the recycling industry. In addition, the additional stability generated for the certificates' income counterbalances the waste picker's exposure to material price volatility.

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Optoro, founded in 2010, is a technology company that offers an end-to-end reverse logistics solution that helps retailers optimally process, dispose and sell their excess and returned inventory.

What was the circular economy challenge?

Big retailers are facing a growing problem. Every year, 15 percent of all items purchased are returned or deemed excess, and that number continues to grow with the rise of e-commerce sales and more liberal return policies. Traditionally, returned and excess goods are shipped multiple times over the course of several months before reaching an end consumer, and in the process lose value and create unnecessary pollution.

What was the circular economy solution?

Using data analytics, Optoro's software platform determines the best path for returned and excess goods, cutting out the long, wasteful chain of middlemen. Optoro's software, OptiTurn, helps retailers process, sort, and sell those returned items more efficiently in order to maximize recovery costs and reduce waste. Through OptiTurn, inventory is received, processed, tested and graded, and then listed on multiple eCommerce sites, which quickly gets products back to end consumers. Inventory is listed on ten eCommerce sites, including Amazon, eBay, and Optoro's own eCommerce website, BLINQ.com and BULQ.com.

What was the impact?

Optoro works with 20 of the largest 100 retailers in the US, including the largest home and garden retailers, the biggest eCommerce retailers, and major office supply retailers. Going forward, Optoro's goal is to expand that number, growing the company into a global enterprise that leverages best-in-class analytics to connect buyers and sellers worldwide. If Optoro's software was scaled across the US it would reduce waste by up to 73 percent, cut fuel costs by \$850M and lower CO2 emissions by 2+ million metric tons.

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highly commended



Bundles is an Amsterdam-based company delivering household appliances as a service.

What was the circular economy challenge?

The team at Bundles believes that real impact within the circular economy comes from established organizations, and there is a need for these organizations to shift their business models. Bundles collaborates with large firms like Miele and P&G to help them create evidence that ecological business is economical business.

What was the circular economy solution?

Bundles makes waste-free laundry accessible to everyone by offering subscriptions (pay per use) to high-quality washing machines. The appliances are currently connected to the Internet using connected energy meters. The power signatures of the appliances are run through big data analysis to filter out the appliance and user behavior and identify the most effective interventions to extend appliance lifetime and lower the cost of consumables. Customers pay for the use of these appliances, utilizing an app that helps them reduce their laundry footprint and save costs. Bundles connects the appliances to the Internet to gather data on the actual use of the appliance and then translates this information into messages for its user, technicians or suppliers.

What was the impact?

Bundles model has been adopted by Miele and to date there are 295 subscriptions, as of 5th April, and the base is currently growing with 40 subscriptions per month. The program attracts other partners to contribute to the transformation towards a circular business model. For example, water companies can promote Bundles to reduce their cleaning costs; consumer goods companies can work towards circular detergents. Bundles is a member of the CE100 program of the Ellen MacArthur Foundation and supported by an increasing number of partners over the last year.

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FLOOW2 is a business-to-business sharing marketplace that, through innovative technology, enables companies and institutions to share, rent out, buy or sell equipment, services, and the skills and knowledge of personnel.

highly commended

What was the circular economy challenge?

Within organizations, and the economy in general, a mind shift has to take place before they can fully commit to becoming more circular. FLOOW2 attempts to develop this core capability by informing the general public about the circular economy, sharing economy and asset sharing and the benefits that these could bring to their businesses, with the aspiration that after increased awareness, adoption will follow.

What was the circular economy solution?

FLOOW2 helps to achieve transformational change by providing organizations with a tool to engage in a more circular way of working. It offers an online service that allows companies to be more sustainable and financially prudent by making more efficient use of assets they already have, thereby reducing the need for unnecessary new goods being manufactured and leading to less consumption of raw materials and less energy wasted.

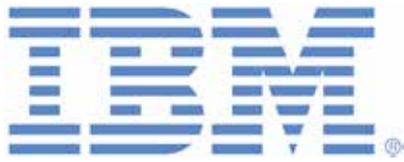
What was the impact?

FLOOW2 helps organizations see that they could optimize their business processes by adding asset sharing as an additional revenue stream to their core business. Furthermore, the use of the FLOOW2 Sharing Marketplace allows businesses to establish new connections and relationships, potentially leading to new market penetration and an increase in sales volume. By using FLOOW2, businesses show that they are willing to make the move towards circularity, thus creating a positive brand identity in terms of their sustainability efforts, an important factor for every modern-day business.

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highly commended



IBM is a global multinational technology and consulting corporation. IBM manufactures and markets computer hardware, middleware and software, and offers infrastructure, hosting and consulting services in areas ranging from mainframe computers to nanotechnology.

What was the circular economy challenge?

The shift in business model to cloud services, including data and analytics, has led to a different engagement with the client and a different operating model. IBM's business unit GARS (Global Asset Recovery Service) is fueling the transition to cloud services through the use of refurbished or upgraded machines. Furthermore, IBM is supplying more reused parts to the hardware being sold as a service thanks to effective design for upgrading criteria and a lease model or pay-as-a-service (per use) model. This leads to a massive reduction in e-waste and offers a tangible approach for other companies seeking to adopt circular economy principles into their business models.

What was the circular economy solution?

IBM Global Business Services is building a digital cloud-based platform that will revolutionize the decision process around the circular economy. The tool, "Circularity Insights as a Service" (CaaS) will optimize the reuse loops selection across various industries, with the starting point being the electronics industry. CaaS is leveraging the power of information technology to integrate all relevant data (real time including product data, IoT data and other external environment data) and analyze it to make informed decisions on the optimal reuse loops, ensuring the right match between supply and demand at product, part and component level. In the context of a thorough business model assessment for circular economy value and in the context of the right maturity of the organization, the CaaS will ensure fact-based, value-driven decision making on reuse loops.

What was the impact?

The differentiation of IBM around the circular economy is a mix of 25 years of operational experience through its business unit GARS that refurbishes or re-manufactures more than 90 percent of the world IT assets processed. The remaining assets are allocated for parts harvesting and recycling coupled with innovative and advanced analytics to provide insights based on factual data and understanding of the business context. Through its extensive engagement with circular economy principles, IBM is pioneering the use of technology to optimize and implement reuse loops.

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The People's Choice Award



In addition to the seven Awards categories decided by The Circulars Judging Panel, there was an opportunity for the public to recognize individuals, public sector programs and organizations that have the most inspiring circular economy stories via the People's Choice Award





Canon

Canon Europe Ltd is the regional sales and marketing operation for Canon Inc., world leader in imaging solutions, represented in 116 countries and employing 18,000 people across Europe, the Middle East and Africa (EMEA).

What was the circular economy challenge?

Until the last couple of decades, recycling was in its infancy in the printer industry, and the notion of producer responsibility was not widespread amongst manufacturers or consumers.

What was the circular economy solution?

Canon was the first company to launch a global recycling program in 1990 and implemented a closed-loop recycling system for printer toner cartridges in 1992. Over that time, the company has expanded its global toner cartridge recycling program to 24 countries, with four dedicated recycling centers located around the world. Between 1990 and 2014, Canon collected and recycled 344,000 tons of cartridges, saving over 502,000 tons of CO₂ and reducing the need for new raw materials by 232,000 tons. Through technological innovation and improved management efficiency, Canon aims to realize a society that promotes both enriched lifestyles and the global environment.

What was the impact?

Since 2003, Canon has achieved no waste to landfill, with all cartridge parts re-used, recycled or energy recovered. Canon's global toner cartridge recycling program celebrated its 25th anniversary in 2015, when it also opened a new recycling plant in Japan. The plant has improved the company's sorting capability and enables 50 percent greater processing capacity. Going beyond traditional remanufacturing processes, Canon's circular process is delivering great value and innovation.

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Based in the Netherlands, Van Hulley turns a consumer's favorite worn-out shirt into personalized boxer shorts.

What was the circular economy challenge?

Every year, millions of tons of clothing are sent to landfills globally. Reusing fabric is becoming more and more popular in the fashion and design industries; however, there are still few recycling solutions available to consumers and even fewer that also generate social benefits in return.

What was the circular economy solution?

Van Hulley has built a strong brand with a personal touch that also makes consumers more aware that there is value in their unwanted clothing items, not just to help the environment but also to help disadvantaged women. The company combines sustainability with a both a circular and a social mission. Via upcycling, Van Hulley turns used material into a personal "want to have" item. Production is carried out by women with limited qualifications but who are eager to get a job. Van Hulley supports them through schooling and provides work experience opportunities.

What was the impact?

Van Hulley has generated environmental savings of more than 2.2 million liters of water, 139 kg of pesticides, and almost 2800 kg of CO₂ from reduced material manufacturing. Within the Netherlands, the company grew rapidly in 2015 compared to 2014. The company is now looking to expand the concept across Europe and aims for further growth through mobile workshops, gift vouchers and production of items made from corporate clothing materials.

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Braiform is the global leader in the supply and re-use of garment hangers, packaging and GNFR solutions to the retail industry.

finalist

What was the circular economy challenge?

Over fifteen billion garment hangers are used annually worldwide, the majority only once. Garment hangers are therefore a major contributor to the global issue of waste. The landfill waste generated by garment hangers is not environmentally or economically sustainable in the long term. As well as having a serious environmental impact, the amount of garment hangers reaching landfill will mean that landfill sites in many global locations will be filled by 2018.

What was the circular economy solution?

As an industry leader, Braiform has pioneered the concept of re-use – low-cost, flexible and direct sourcing – and has overlaid this concept with ethical and social compliance. The company's cleverly designed hangers are built to withstand multiple lifecycles so that they continue to appear in top condition in the store. By providing more durable hangers, Braiform has helped retailers reduce costs and improve efficiencies.

What was the impact?

Each year Braiform supplies close to 3 billion garment hangers, re-using more than 1 billion and recycling more than 200 million. In 2015, Braiform launched the first closed-loop re-use of garment security tags in partnership with one of the UK's largest retail partners. In addition, the company is currently launching a brand new range of re-useable polystyrene hangers globally. These hangers are specifically designed to be re-used, are 23 percent lighter than competing products on the market and can drive benefits through the global Braiform re-use programs. Braiform continues to work alongside the Ellen MacArthur Foundation to ensure the company continues to achieve maximum efficiencies within their garment hanger re-use circular business model.

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The Centre for Regenerative Design and Collaboration (CRDC) is a Costa Rican based company that has developed an innovative zero waste packaging process by converting plastic beverage bottles into a high-quality building product.

What was the circular economy challenge?

Globally, over 300 million tons of plastic are thrown away, leading to the growing problem of plastics that are polluting land and marine environments. Plastic pollution is a very recent man made problem, but it is persistent, pervasive and pernicious. Once plastic gets into the environment it causes harm to ecosystems, damaging rural and coastal economies and ultimately affecting human health.

What was the circular economy solution?

CRDC has developed REAP: Recover, Enrich, Appreciate, Prosper, a circular business model looking to convert the waste stream of one industry into the value stream of another. As an example of this model, CRDC has taken to market a patented 100 percent recycled PET plastic water bottle, designed to be regenerated into a high-quality roofing tile to assist in meeting the world's growing shelter needs. Currently CRDC is using the REAP design mandate for a new zero waste approach to the coffee industry to recover nutrient rich coffee by products to produce superfoods.

What was the impact?

Recently, CRDC won the Most Sustainable Bottle Design Award at Beverage Worlds Global Design awards. The organization has also developed strong relationships with communities, learning institutions and the Costa Rican government after adopting circular economy principles. CRDC has designed its packaging with an inspirational "message in the bottle" as a tangible reminder to the consumer that a waste-free solution to important environmental and social issues is in their hands.

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Alex Lemille

Alex Lemille is the Co-Founder of the Circular Economy Institute of South Africa (CEISA™) which strives to build a restorative South African economy that generates well-being and prosperity for all people.

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What was the circular economy challenge?

High rates of unemployment have been a persistent issue in South Africa. Alex has been promoting the circular economy since 2012. However, when trying to apply it within the South African context, he found that the circular economy needed to be adapted to emerging markets.

What was the circular economy solution?

Prior to launch the CEISA Institute, Alex created the concept of a Valued Circular Economy™ (VCE), which follows a circular economy framework but veers away from profit maximization as its objective, rather aims at value optimization. As an accredited Social Return on Investment (SROI) practitioner, measuring impact and value change, Alex linked up the notion of value creation with the circular economy to come up with the concept of the VCE that is stakeholder driven and therefore socially inclusive, and recognizes Value (V) as its new currency. In a VCE, Poverty= Waste™ since both poverty and waste are externalities of our linear system. Both must be eradicated.

What was the impact?

Alex is also founder of Wizeimpact, a for-profit for-purpose company promoting a socially inclusive circular economic model as a business vision. Through Wizeimpact, Alex has conducted workshops and training programs and delivered conference speeches across South Africa to promote the concept of circularity, while also explaining that societal inclusiveness can be advanced in this more responsible model. The framework has the potential to enable millions of South Africans to benefit from products that they were not able to afford before. Alex also teaches at national universities, and speaks at international conferences on the importance of using value as a core reference in a circular economy framework to re-position social norms ahead of economic ones, while also valuing the environment. In this way, Alex has helped move South African thinking from Corporate Social Investment (CSI) and Corporate Social Responsibility (CSR) to a value-full circular economy.

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Miniwiz is an internationally operating and privately owned company dedicated to upcycling consumer trash and industrial waste. Established in 2005, it creates low carbon footprint materials, semi-finished goods and building modules suitable for uses ranging from construction to consumer products.

What was the circular economy challenge?

The building materials and construction industries face a growing waste problem and have a large environmental footprint. Building waste is often made up of materials such as bricks, concrete and wood that is damaged or unused for various reasons during construction and may contain toxic chemicals that are released once landfilled. Observational research has shown that this can be as high as 10 to 15 percent of the materials that go into a building. Since considerable variability exists between construction sites, there is considerable opportunity for reducing this waste.

What was the circular economy solution?

Miniwiz provides turnkey architectural loop economy solutions. The company leverages the ever-accumulating waste as a growing and mineable resource to make building materials and tackle both the waste problem and the huge environmental footprint in the building industry. Miniwiz gained significant recognition in architecture circles in 2010 after building "EcoArk," a museum made completely out of recycled plastic PET (Polyethylene terephthalate) bottles. Miniwiz operates an IT system that allows mechanical properties of wasted resources to be entered into a database. This database delivers information about parts and products made in real time, after which an IOT (Internet of Things) system monitors shipments of materials and products already deployed.

What was the impact?

For ten years, Miniwiz has been serving various industries and enterprises worldwide, advocating a reduction of the carbon footprint through the usage of recycled and fully re-recyclable materials, modularity and re-usage of parts. To date, Miniwiz has solved a whole host of sustainability and circularity problematics in the retail, hospitality, manufacturing and interior design sectors.

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Paul Murray

Paul Murray is the Vice President of Sustainability and Environmental Affairs at Shaw Industries Group, Inc. (Shaw). He leads Shaw's comprehensive approach to sustainability, including material health, material reutilization, resource conservation, and renewable and alternative energy use.

What was the circular economy challenge?

Key challenges to creating a circular economy include competing with the price of virgin materials, finding solutions for materials already in the market, and looking at the value chain / supply chain in a different way, particularly for commercial interior products in which the initial purchasing customer is not often the customer when it comes time for reclamation.

What was the circular economy solution?

As Director of Sustainability at HMI, Paul played a key role from the beginning in the company's alignment to Cradle-to-Cradle design (C2C). Consequently, HMI products have been developed using the C2C protocol since 2001. In addition, Paul and his team worked directly with William McDonough and Michael Braungart on a project that eventually became known as the Cradle-to-Cradle Protocol. At Shaw, Paul leads the Growth and Sustainability committee, driving innovative product solutions and setting sustainability strategy globally.

What was the impact?

During his time at HMI, Paul's collaboration led to HMI's release of the first product ever to achieve C2C certification. Now, 66 percent of Shaw's manufactured products are C2C and that percentage continues to increase. In 2015, Shaw introduced a new carpet recycling facility that expands the ability to recycle both nylon and polyester carpets, materials for which there have been little to no viable recycling options. In all, Paul's leadership, first at HMI and more recently at Shaw, has supported the industry's continued push for innovation around the circular economy.

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Neptuno Pumps, based in Chile, is an award winning, world class designer and manufacturer of energy efficient, innovative and sustainable pumping solutions for the mining and process industries worldwide.

finalist

What was the circular economy challenge?

Given the current scarcity and high value of commodities, Neptuno Pumps believes in the need to move towards a circular economy that recycles materials, remanufactures equipment and helps mitigate the effects of climate change. Pumps are the second most used equipment in the world and consume 30 percent of the world's energy. In addition, Chile has the biggest mining industry in Latin America with \$150 billion dollars' worth of remanufactured goods potential. Neptuno Pumps has taken on the challenge to unlock this potential.

What was the circular economy solution?

Neptuno Pumps has been able to implement a circular economy model which enables the company to increase profit and share value through remanufacturing. Currently, 60 percent of Neptuno's pumps are remanufactured from old material. This figure is expected to increase to 90 percent within the next five years. Moreover, Neptuno Pumps is moving towards a Product-as-a-service (PAAS) model and works jointly with Fundación Chile (FCh), a non-profit technological 'do-tank', to promote the circular economy nationwide.

What was the impact?

Neptuno Pumps is the world's first pump manufacturer to establish an innovative and sustainable circular economy approach with its customers, and in so doing has reduced its carbon footprint by 70 percent. Furthermore, as a vertically integrated company, Neptuno Pumps has understood the importance of remanufacturing, offering remanufactured products that are energy efficient, 30 percent cheaper, and with a one-year warranty, exactly the same as when purchasing a brand new pump. By creating new alliances with its clients, the company is planning to manufacture 90 percent of its products with recycled and reused materials in the next five years. Neptuno Pumps performed a complete redesign of its system through a complete CFD/FEA analysis and, together with a full material upgrade, the company generated savings of US\$650,000 per year.

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Operating in Europe and the USA, Positive Luxury awards The Butterfly Mark, a unique trust mark, to luxury lifestyle brands, recognizing them for their positive circular actions with the aim of changing society's "throw away" culture.

What was the circular economy challenge?

Until recently, luxury brands have had very little association with the circular economy, or doing good for both people and the planet. Traditionally, consumers have been provided with very little information about a brand's social and environmental impact, meaning consumers have been unable to make informed choices at the point of sale. In the last few years, however, attitudes are changing and consumers are demanding brands that are transparent and trustworthy with regard to their social and environmental impact.

What was the circular economy solution?

As well as recognizing brands for their positive circular actions, Positive Luxury also aims to revolutionize the way brands engage with consumers. A focus on enhancing environmental reputation while also helping brands create better and more informed consumer experiences, in turn fosters loyalty and generates trust. The company recently launched the world's first interactive trust mark to be displayed alongside a brand's product, on its own website and intermediary channels, in order to visibly commend circular practices. Using pioneering technology, luxury lifestyle brands are given a better understanding of their consumer's behavior online, helping them to assess and manage their reputation in relation to social and environmental welfare.

What was the impact?

To date, Positive Luxury has helped over 250 "best in class" luxury brands manage and reinforce their environmental reputations by assessing their adoption of the circular economy; evaluating, communicating and improving their sustainability reputation; and transforming the way they engage with consumers. Following its recent move into the American market, Positive Luxury is looking to expand into Japan and China.

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Professor Dajian Zhu

Dajian Zhu is a distinguished Professor at the School of Economics and Management at Tongji University in Shanghai, China, where he is also the Vice Chairman of the University Academic Committee, and Director of the Institute of Governance for Sustainable Development.

What was the circular economy challenge?

In the past thirty years, China experienced a high rate of economic growth with a high rate of resource consumption and waste generation. The challenge for China to enter the 21 century is how to decouple economic growth from environmental impact.

What was the circular economy solution?

Professor Zhu identified a gap in the environmental protection norms which solely focused on waste treatment at end-of-pipe. He introduced circular economy principles into China in 1998 and since then, Professor Zhu has been a thinker, advocate and speaker of this new economic model. He has been involved in policy consulting of China's circular economy and several key research projects conducted by international organizations such as the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank.

What was the impact?

Professor Zhu's efforts focus not only on waste treatment but also on how to minimize and change the waste lifecycle, which combines eco-efficiency and eco-design. Thanks to his tireless determination, today the Chinese government is taking the lead in promoting circular economy and combining both top-down and bottom-up approaches with regard to waste improvement. These include the establishment of circular economy promoting law, embedding of circular economy into five years plans, implementation of pilot projects across both national and municipal levels, and the development of indicators for the circular economy. Globally, he is involved in the meta-council of the World Economic Forum and World Resource Forum, pushing the circular economy within the global green agenda through policy consulting and communication. In all, Professor Zhu has effectively implemented this circular economy mentality in China and beyond.

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Sustainer Homes, a Dutch start-up, designs and builds houses, holiday homes, and offices that allow you to live and work as comfortably as ever without any grid connections. Working together with the most innovative partners in solar power, wind power and water filtration available, Sustainer Homes close both energy and water cycles. Using only sustainably sourced wood, recycled and recyclable materials; Sustainer Homes are truly sustainable across their entire lifecycle with a carbon footprint significantly smaller than regular construction.

What was the circular economy challenge?

The challenge for Sustainer Homes is to set a new standard in the construction sector designing homes that are sustainable, comfortable and affordable. The current housing stock, mostly built with concrete and steel, is not flexible enough to meet fast changing lifestyles and household-sizes. Moreover, there are still plenty of ways in which the construction sector can reduce its CO2 emission and water usage by changing building materials and methods. Finally, new buildings must not use energy but produce energy and water for the people living and working inside.

What was the circular economy solution?

Sustainer Homes use a lightweight modular timberframe construction that has plenty of advantages over traditional materials such as brick, concrete and steel. With modules, customers are able to design the home that matches their needs without spending thousands of euros on architecture. Modules are easy to build and assemble: an entire house can be built in a matter of weeks. Keeping the end-of-life of our product in mind, we only use sustainable sourced wood, recycled and recyclable materials. Off-grid technology provides people with the opportunity to live without bills and independent from the grid. What's more, off-grid technology opens up new spaces for comfortable living, far away from any grid. Every house comes with a bathroom, kitchen and the most water and energy efficient appliances included. A Sustainer Home Modular starts at €75.000.

What was the impact?

In the past year, Sustainer Homes has been approached by more than 5000 people from over 70 countries, including municipalities, businesses, and building societies. After intensive experimenting in our demo model, we have sold the first Sustainer Homes to enthusiastic and brave pioneers. We will deliver their Sustainer Homes Modular in the summer of 2016. Building the first commercially viable, sustainable, off-grid homes will pave the way for a transition in the construction sector: sustainable and flexible construction; addressing the need of today's and tomorrow's people; and greater independence at an affordable price.

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David Bateson, Chief of Legal, Intellectual Property & Sustainability, Canon, receives the People's Choice Award for Canon Europe Ltd from Andy Wales, Corporate Affairs Director, SABMiller, at the Awards ceremony in Davos

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