30 IDEAS TO KICKSTART YOUR CIRCULAR BUSINESS

Knowledge Transfer Network

The Agency of Design

30 IDEAS TO KICKSTART YOUR CIRCULAR BUSINESS

This is a tool to aid business large and small to design, develop and evaluate the business models of the future. Thirty 'what if' questions challenge the status quo and inspire new solutions to today's problems. Each card showcases a successful business profiting by moving towards a circular economy.

As Innovate UK's network partner, the Knowledge Transfer Network links new ideas and opportunities with expertise, markets and finance through our network of businesses, universities, funders and investors.

The Agency of Design is a design and innovation consultancy who help organisations design a better future by re-thinking their physical and digital worlds.

Innovate UK Knowledge Transfer Network

The Agency of Design

The Linear Economy

Our current economy is a one way flow of materials, from extraction, manufacturing, use and ultimately, disposal. This model relies on **cheap flows of energy and materials.**

The linear economy has been extraordinarily successful at bringing affordable products and material prosperity to billions of people.

Whilst there is space for this model to grow and find efficiencies, it is **impossible to have infinite growth** on a finite planet.

The global middle class will double by 2030, with 3 billion more consumers creating an unprecedented demand for resources. Huge increases in resource demand, with limited supplies, creates huge price volatility for business.

Using less, recycling more and being efficient will not solve the problem. A **fundamental rethink** of business structures, finance models and government policy is necessary to find an economy which can work in the long term.



The Circular Economy

The circular economy is a practical framework for creating an economy which is sustainable by design. It aims to keep products, components, and materials at their highest quality and value at all times. Crucially, growth is decoupled from scarce resource use.

Material use is of two types: biological (renewable) materials, for reuse and ultimate return to the earth; and technical (non-renewable) materials, designed to move back and forth between production and consumption with **minimal loss in quality or value**.

New business models question the ownership of products, with services offering access to better products, at lower price points. Businesses retain ownership of valuable products, materials and components, increasing profitability and resilience. These new priorities **design out product obsolescence.**

Systems should ultimately run on **renewable energy**, made possible by the reduced energy required by a restorative, circular economy.

McKinsey estimate a shift to a circular economy could generate \$1 trillion a year for the global economy by 2025.



Instructions

The cards are divided into three categories to help you navigate the deck and generate rounded ideas:



Use the deck in any of the four different methods on the reverse of this card to generate new ideas.

With each method, start by capturing all ideas on Post-it notes, and sharing with the group by sticking them to the wall. Remember to use the brainstorming rules.

Once there are a wide range of ideas, use the worksheet to connect, develop and refine the most promising ideas.

What you will need

Large table A big wall (for Post-it notes sharing) Pens and Post-it notes Worksheets (www.ktn-uk.co.uk/programmes/CEtoolkit)

Methods

Creative warm up

Lay all the cards out, questions facing up. Use the cards to generate ideas for how a fictional business might become more circular, e.g. a vacuum manufacturer, a supermarket or a high-street fashion chain.

Full house

Lay all the cards out, questions facing up. Pick any card which presents an opportunity to your business. Once you have generated some ideas, find a complimentary card from each of the other two categories so you make a full set, including a product innovation, business model and a system change card.

Lead by example

Lay all the cards out, case-studies facing up. Find the most exciting or analogous example to your business and use the 'what if?' statements on the reverse face to stimulate new ideas.

Lucky dip

Fan the deck and let someone pick a card at random. Explore how the card could apply to your business. It may not be obvious at first so make sure you persevere and look for a connection or opportunity for each card.

Brainstorming rules

No judgement

Make everyone feel like they can say the idea that's on their mind. No negativity at the idea generation stage.

Think extraordinary thoughts

No idea is too crazy. Think beyond material or technical constraints.

Use each other's ideas

Re-interpretations are crucial to get to ideas that you couldn't reach on your own.

Keep focused on the task

Try to keep the discussion on target, and in scope.

Listen to the group

Teams work best when everyone is paying attention.

Get drawing

Nothing gets an idea across faster than drawing it.

Think quick

The best way to have a good idea is to have lots.

Set time intervals

Keep an eye on the clock for each idea to keep energy up in the group and to make time for idea evaluation.

What if you sold outcomes, rather than products?

Does your customer want lightbulbs or the light that they provide? Could you be better meeting their needs by delivering a service rather than selling a product? Would this change your product's design?



Michelin

In the 1920s, Michelin pioneered leasing tyres under a pay-per-kilometre programme. Michelin Solutions now have over 500,000 vehicles under contract in 23 countries, with tyre management. Upgrading, maintaining, and optimising replacement cycles can vastly improve the performance of large truck fleets.

What if you charged per month for your product?

How could offering customers access to products rather than ownership create a more compelling customer experience? Would a subscription allow you to upgrade your products over time?



Mud Jeans

At Mud Jeans, users can choose to lease a pair of jeans for \$5 / month. After one year, the user can either swap their jeans for a new pair, continue leasing for another year, or purchase the jeans to keep. Mud Jeans are made with 30% recycled content, with free repairs included in the service.

What if hiring was more desirable than buying?

Could hiring your product deliver a better outcome for your customer? Could they access better products at a lower price? Would your customers value the flexibility and choice that comes with hiring?



Zipcar

Zipcar has created a huge network of cars parked strategically around city centres that their customers can book instantly via the app. It has removed the hassle of car hire and made the upfront cost and maintenance of a car seem very undesirable. Zipcar was purchased for \$500 million in 2013.

What if you charged per use of your product?

Could you shift to a pay per use model that charges per unit of use e.g. miles driven, hours used? Would this engage new customers at lower price points? Would it change your design priorities?



Bundles

Bundles offer a pay-per-wash model for Miele washing machines. Their model makes a high value machine accessible to a larger market where customers pay for the performance, not the product. Connecting the machines to the internet enables product monitoring and regular maintenance.

What if you didn't have a physical product?

Could you dematerialise your product into a digital service or platform? Think Netflix rather than Blockbuster, or Spotify rather than a CD collection.



Netflix

Netflix is valued at \$25.5 billion, with over 75 million subscribers globally, without manufacturing a single product. Producing and shipping a single DVD uses as much energy as watching video content online non-stop for three days.

What if you could make money from others' unused assets?

Could you maximise the productivity of vehicles, properties, tools, workforces or infrastructure which currently sit idle? How could they be better used, more of the time?



Airbnb

Airbnb is a website for people to list, find, and rent lodging. It has over 1,500,000 listings in 34,000 cities in 190 countries, and is valued at over \$30 billion. It is the world's largest 'hotel chain' – without owning a single hotel.

What if you took back your old products?

Would taking back your old products lead to higher quality material recovery? Could it enable remanufacturing of your products? Would it encourage repeat custom?



HP

HP has offered free cartridge recycling since 1991. Over the last 25 years, 682 million HP ink and toner cartridges have been returned and recycled. HP has produced more than 1 billion cartridges containing between 30-70% recycled plastic from returned cartridges and other post-consumer waste.

What if you facilitated people sharing their products?

Could you make revenue from helping others share? How could digital technologies make this possible? Could products be better designed for sharing?



Peerby

Peerby is a website and app that enables people in cities to borrow products from others in their neighbourhood. The platform offers access to \$1 billion worth of products in over 20 cities globally. Peerby crowdfunded \$2.2 million in just one weekend in 2016, with most funders being Peerby users.

What if your products lasted 50 years?

Could you make your product extremely durable? Could you find new customers looking for quality and longevity? Would this mean you would need to make money in different ways?



Davek Umbrellas

Davek umbrellas are engineered for ultimate durability. Each umbrella is crafted using 96 steps and a 12 point inspection. The result is a product with unparalleled quality and guaranteed durability. If your umbrella should fail to function properly, they will repair or replace it for free.

What if your customer could repair their product?

Could you design your product to be easily repaired by your customer? Would this create greater brand loyalty? Could you generate additional revenue from selling spare parts?



Fairphone

Fairphone is the world's first modular smartphone available for purchase, with over 100,000 users. The modular design, and readily available spare parts allow users to repair their own phone or replace the parts that most frequently break. The phone has been awarded a 10/10 score by iFixit for repairability.

What if you could keep selling the same product again and again?

Could you take back your product and restore it to a like new state? Could refurbished products allow a lower price point with a larger margin? Could you resell products to a different market?



Disposable camera

Disposable cameras are largely perceived as a single use item. In reality, when they are returned to be developed, the internal components get reused for many lifecycles, with the customer getting the same reliable product. Kodak have recycled over 4.5 billion single use cameras, a recycling rate of 84%.

What if your customer could upgrade or customise their product?

Could you design your product to be modular? How could your product adapt and change with the customer needs? Could you add new features or functions without replacing the whole product?



Vitsoe 606 Shelving System

Vitsoe's design team work with their customers to create bespoke storage solutions with their highly modular, expandable storage system. If a customer moves house, or needs more storage, Vitsoe will reconfigure their items to fit the new space, and send the packaging to protect their shelving in transit.

What if your product was reusable rather than consumable?

Could you make your product or its components reusable? Would this generate more repeat custom? Would this enable your product to be shared?



Splosh

Splosh sells concentrated cleaning products using durable, refillable bottles at home. A sachet of concentrated liquid is added to the bottle with warm tap water to create cleaning products. Bottles can be used repeatedly, with 8 refill sachets delivered in a single box through the post.

What if your product was as easy to disassemble as it was to assemble?

Would this make repair more cost effective? Who would be disassembling your product? Could you update and upgrade your product cost effectively?



Ara by Orangebox

Ara is the first task chair manufactured in Europe to achieve Cradle to Cradle accreditation. Ara is designed for rapid disassembly to facilitate cost effective remanufacturing. The back membrane attaches without fasteners and a single aluminium vertebra simplifies an often complex assembly.

What if your customers never wanted to throw your product away?

Could you foster more attachment and trust in your product? Could you celebrate its age? Would this build a stronger relationship with your customer?



Loake Shoes

There are some customers still wearing Loake shoes they purchased over 25 years ago. With their repair and resole service, customers can have new looking shoes, but keep their comfortable, worn in upper and insole. Their UK repair service will re-sole on the original mould on which the shoe was first made.

What if we stole all our ideas from nature?

Nature has been generating and testing ideas for 3.6 billion years, there's a wealth of solutions and no patent lawyers. Could nature inspire new solutions for your product or service?



High speed train

The beak of a kingfisher allows splashless entry into water due its wedge shaped head. Mimicking this shape at the front of the 500-series train has reduced tunnel entry air pressure by 30% and electricity use by 15%.

What if your product was only made out of renewable materials?

Could you replace non-renewable materials with renewable alternatives? Could you ensure they make it back to natural systems at the end of their life?



Ecovative

Ecovative grow building materials, insulation and packaging using agricultural waste and the mushroom network mycelium. With no heat or water, the mycelium binds the waste together in five days, creating a light and compostable material. Ecovative raised \$4 million in 2016 from their existing investors.

What if your product was only made out of one material?

Could you radically reduce the number of materials in your product? Would this enable high quality recycling when it is thrown away? How could you profit from this?



Aluminium can

Recycling aluminium uses only around 5% of the energy needed to make it from the virgin aluminium ore. A redesign of the opening tab in the 1970's ensured it stayed attached to the can and therefore more widely recycled. 6,700 cans are made every second with 2/3 of all cans recycled globally.

What if there were no toxins in your product?

Could you remove all toxins or use safer materials in your products? Would this make it safer and cheaper to remanufacture or recycle?



Walmart

Walmart's 'Sustainable Chemistry Policy' aims to reduce, restrict and eliminate the use of 'High Priority Chemicals' (HPCs) from their products. By working with their suppliers to reformulate products they have successfully removed 95 percent of HPCs by weight from the products they sell in Walmart U.S.

What if you designed your product to go through a letter box?

Could you redesign your product to better fit logistics systems? Would this make it easier to recover at end of life? Could it also mean easier delivery to a second customer?



BT router

BT redesigned their home hub to fit through their customers' letterbox. This lowers their delivery costs as they never need to make a second delivery attempt and makes sure their customers get the product on time. It also allows the product to be easily returned when it's time to upgrade.

What if you designed your product to fit recycling systems?

Could you choose materials that maintain their quality through the recycling system? Could you minimise the number of materials in your product?



Flute Office

Each FlutePro desk contains nearly 30 square metres of grade A micro-fluted corrugated paperboard, made from recycled paper and virgin fibre from managed sustainable sources. It arrives partassembled needing no tools, screws or glue for assembly, which can be done in less then 5 minutes.

What if you shifted to renewable energy?

How could investing in your own energy sources save you money in the future? Would powering your business with clean energy appeal to new customers?



Apple

93% of Apple's global operations run on renewables, with 100% of their data centres now running on clean energy. This huge investment in clean energy means every customer's iMessage, app download, or email is carbon neutral.

What if waste was illegal?

What materials in your products would need to change? Could you design out waste in your supply chain, customer use, and end of life? Could you use this waste as a resource?



Desso

Over 60% of Desso's carpet tile range is made with ECONYL yarn. This yarn is made from nylon found in waste carpets, clothing and fishing nets. The waste materials are broken down into their base monomers then repolymerised back into nylon with no loss of quality compared to virgin materials.

What if you could track, locate and update your product remotely?

Could asset tracking enable more circular products and business models? Could updates keep products in use for longer? Would preventative maintenance extend product life?



IBM

IBM servers come equipped with a call home feature so the company is notified of the health and status of their machines, enabling preventative maintenance. Connectivity also allows more effective remote troubleshooting, decreasing time from problem, to resolution.

What if you made your product locally?

Could you manufacture your products near to your customers? Would it enable cost effective remanufacture? Could it allow for more customised, on-demand manufacture?



Opendesk

Opendesk is a global platform offering workspace furniture which can be made locally, on demand, all around the world. Customers can choose from a range of products by international designers and have them produced by a local maker using digital fabrication technologies.

What if you could use your neighbour's waste?

Could someone else's waste become your raw material? Could your waste have value if you found the right customer? Could you change your processes to make your waste more valuable?



Kalundborg symbiosis

At Kalundborg Business Park in Denmark, public and private companies buy and sell waste from each other in a closed cycle of industrial production. Driven by increased costs of materials and energy, exchanges are based on economic gains in saving of resources or money.

What if you could get mutiple lifecycles out of your renewable materials?

Could you cascade renewable materials by using them multiple times in different uses? Could you create energy from anaerobic digestion, or extract biochemicals from organic waste?



Slough water treatment

A sewage plant in Slough is extracting phosphorus from the waste of 140,000 residents in Berkshire. The company expects to make 200,000 a year from the combination of selling 150 tonnes of its fertiliser, and not having to spend as much money on chemicals to unblock pipes. What if recycling a material didn't lose any of its quality?

Could you use new recycling technologies to maintain material quality? Could you make components out of a single material to aid efficient recycling?



Milk bottle recycling

WRAP's large scale HDPE recycling trial with Dairy Crest, Nampak and Marks & Spencer demonstrated that post-consumer milk bottles can be recycled back into food contact milk bottles. This has become a reality through large scale development and investment in new recycling technology.

What if you grew more material than you used?

Would this protect you from future price shocks? Would it guarantee the supply of key raw materials for manufacture?



Kingfisher

Timber is used in up to 40% of Kingfisher's products. They aim to protect their timber supplies and profits by taking a restorative approach, creating more forest than they use by 2050. Projects in China, Poland, Spain and the UK have so far benefited forested areas of over 13,000 hectares.

What if you embraced new digital fabrication methods?

Could you help your customers create more personalised products? Could you distribute your manufacture? Would you be able to improve and update designs more quickly?



Unmade

Unmade is a London fashion technology company working with brands to create and manufacture one-off knitwear on an industrial scale. Their embeddable customisation editor allows consumers to personalise their knitwear in just a few clicks, with nothing produced until the order is placed.