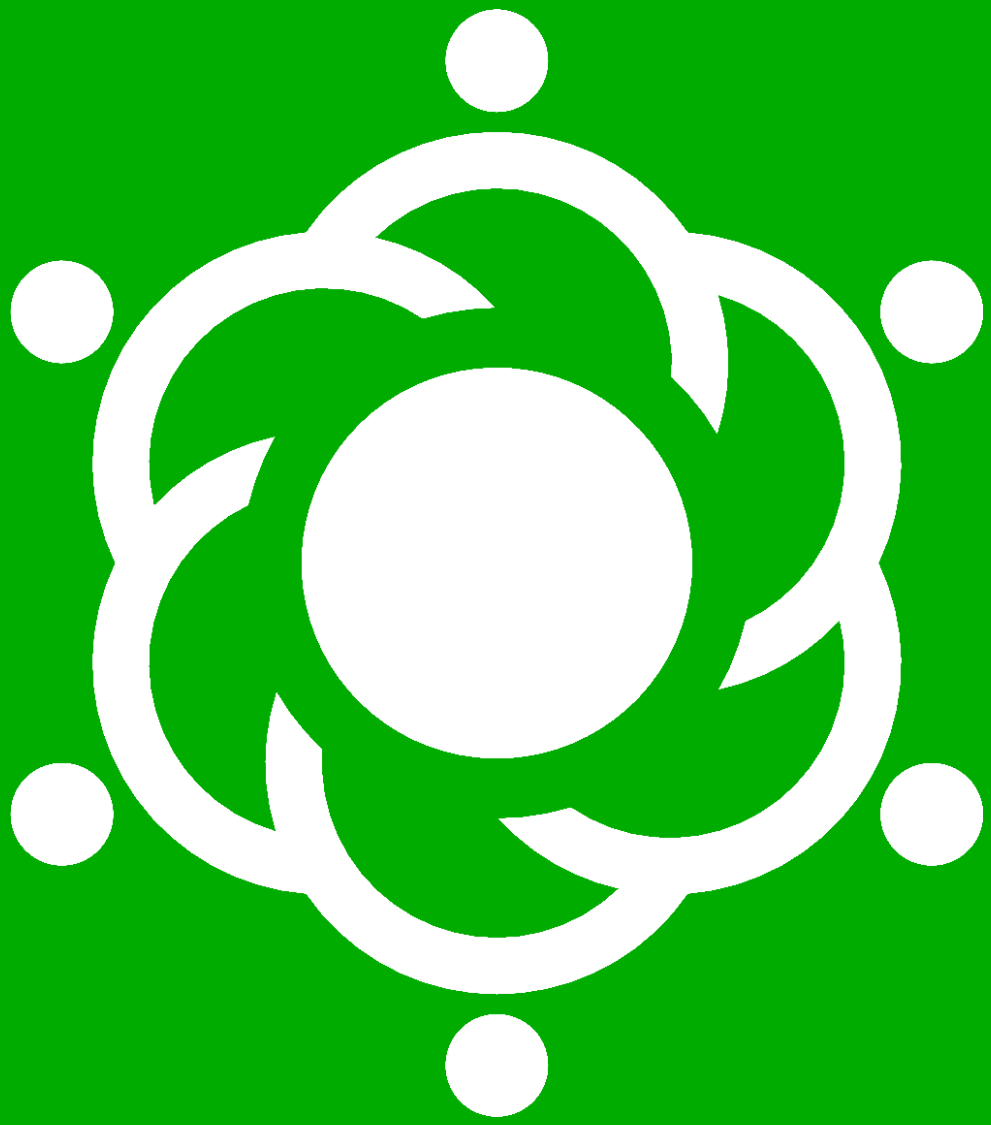
SOCIAL CIRCULAR ECONOMY

OPPORTUNITIES FOR PEOPLE, PLANET AND PROFIT



SOCIAL CIRCULAR ECONOMY

WINSTON CHURCHILL MEMORIAL TRUST

THE FRANK JACKSON FOUNDATION

This report is primarily intended for policy-makers, companies looking to engage in a more socially and environmentally responsible economy, and practitioners of circular economy and/or social enterprise. It aims to highlight the significant opportunities, insights and themes garnered from dozens of social circular enterprises and to act as an information tool and showcase of successful models and accelerate progress towards a Social Circular Economy, in line with the UN Sustainable Development Goals.

Acknowledgements

Social Circular Economy aims to inspire people to rethink, redesign and pursue a positive future with the belief that coupling the principles of the circular economy with social enterprise gives the right conditions to foster innovation and creativity, for a world with local solutions to meet societal, environmental and economic needs.

This report would not have been possible without the support of the **Winston Churchill Memorial Trust** and **The Frank Jackson Foundation**.

Thanks also go to an extended group of organisations that provided input and expertise. Only a portion of their contributions can be captured in this report, but further details will be available on www.socialcircularеconomy.com. The organisations included *Azzura Solar, Bali Recycling, Beeconomics, Bio Fair Trade, BV Rio, Corong Galeri, ECHOstore, Eco Farm Asia, Ecotece, Flor de Cabruêra, GK Enchanted Farm, GOMA, Good Food Community, Growbox, Habi Footwear, Jacinto & Lirio, Kawil Tours, Liter of Light, Materia Brasil, Morada da Floresta, Mycotech, New Hope Ecotech, Pelangi Nusantara, Rede Asta, REMBRE, Retalhar, Trama, Triciclos, Upasol, Waste4Change and ZEBU*.

About the author

Seigo Robinson is a consultant supporting organisations in tackling their environmental and social challenges. These are diverse – from circular economy strategy for a European region to scaling small charitable organisations.

Previously he was Head of the Centre for Remanufacturing & Reuse where he was an invited speaker at international conferences on circular economy and remanufacturing. As Senior Consultant, he led the Circular Economy division at Oakdene Hollins, and previously worked in New York and the Middle East with strategy consultancies Marakon and Charles River Associates respectively.

He is a Fellow of the social enterprise leadership programme On Purpose, a member of the BSI[1] Sustainable Resource Management Committee that developed *BS8001: Framework for implementing circular economy principles in organizations*, and provides strategic advice on several boards including a London city farm and Open Source Circular Economy Days. He has a MEng degree in Chemical Engineering from the University of Cambridge.

Seigo was awarded a Winston Churchill Memorial Trust Travel Fellowship in 2016 to explore the social circular economy and disseminate its benefits.

[1] British Standards Institute

Contents

Glossary

B2B	Business to business	GK	Gawad Kalinga
B2C	Business to consumer	KPI	Key performance indicator
BMC	Business model canvas	NGO	Non-governmental organisation
BOP	Bottom of (socio-economic) pyramid	OEM	Original equipment manufacturer
BSI	British Standards Institute	OSCE	Open source circular economy
CEBM	Circular economy business models	PSS	Product service systems
CSA	Community supported agriculture	SCBMC	Social circular business model canvas
CSR	Corporate social responsibility	SDG	Sustainable development goals
EPR	Extended producer responsibility	SROI	Social return on investment
GDP	Gross domestic product	UNESCO	United Nations Educational, Scientific and Cultural Organization

Executive summary

The **social circular economy** unites the **circular economy** and **social enterprise** concepts to deliver benefits for people, planet and profit. It allows a ***fully systemic view*** by drawing on the environmental principles of the circular economy and the societal vision of social enterprise, both of which are underpinned by a pursuit for economic prosperity. It thus aligns well with enhancing wellbeing for people and planet and the UN's Sustainable Development Goals.

The **circular economy** is an industrial economy that is regenerative and restorative by design, keeping resources in use at their highest value for as long as possible.

Social enterprises use business principles to achieve societal good and seek to make a positive change in the world.

To explore this concept further, site visits to 30 organisations across four countries were performed. Emerging nations were selected for the study for their lower labour costs, in theory allowing more human-centred value recovery[2] models to be initiated. They also tend to face more acute and widespread social issues, increasing the chance for different social solutions to appear.

Five key objectives for this study were to:

1. Generate a showcase of organisations to validate the concept's range and viability;
2. Identify key themes;
3. Test and enhance a *social circular business model canvas* (SCBMC) developed to be more fit for purpose than conventional frameworks in order to capture how these organisations generate and deliver value;
4. Understand how organisations unlock the reverse logistics conundrum i.e. how are they retrieving products and materials to recover value from them in a cost-effective manner; and
5. Identify the applicability of the social circular economy to the UK context and recommend how to maximise its implementation and scale.

[2] Reduce, recycle, refurbish, reuse, etc.
[3] Extracting raw materials from the planet e.g. oil, gas, coal, metals, minerals and trees.

Circular economy

The umbrella concept of the *circular economy* has gained traction in recent years, even receiving its own strategy within the EU. It typically refers to an industrial economy that is regenerative and restorative by design, keeping resources in use at their highest value for as long as possible. It is an economy where products, components and materials are designed and made for 'loops' such as reuse, refurbishment and recycling. It replaces the *linear economy* based on ***take***[3]***, make*** **and** ***throw away*** that assumes the earth has ***infinite resources***. Instead the circular economy is one where we:

1. **Put in only renewable and sustainable resources;**
2. **Endlessly cycle technical and biological nutrients; and**
3. **Minimise waste and negative externalities**[4]**.**

At its core, it requires resources, money and informational flows to circulate, something that the linear economy does not do.

Since the circular economy is an operating model that describes the high-level basis for creation of value in an environmentally positive way, there are also a set of business models that describe how an organisation creates and delivers this value. These are termed circular economy business models (CEBMs) and fall into five broad groups:

1. **Dematerialisation:** reducing the amount of resource required to create products through *digitisation*, *on-demand production (made to order)* and a *move to reusable products*. Examples are Netflix streaming content rather than producing and sending DVDs, or each Kindle displacing hundreds of books.
2. **Circular inputs:** using renewable (e.g. solar power), fully biodegradable (e.g. untreated wood), sustainable (e.g. properly sourced palm oil) and/or fully recyclable (e.g. pure high density polyethylene) for production.
3. **Product life extension:** extending the life of products through *design for durability*, *design for modularity*, *maintenance and repair*, *reuse*, *reconditioning*, *refurbishment*, *remanufacture*, *repurpose* and *part harvesting*. Examples are Patagonia that (designs for) repair of their clothing and

[4] Externalities: consequences (costs or benefits) of an activity which affect other parties that do not choose to incur those consequences.

Fairphone that designs phones built with durability and modularity in mind using ethical supply chains.

4. **Resource recovery** through recycling, bio-chemical extraction, anaerobic digestion and composting. Examples are Toast Ale which uses surplus bread to brew beer and the carpet manufacturer Interface, who through their Networks programme collect nylon fishing nets to be recycled into new carpet yarn.
5. **Product as a service or Product Service System** (includes Sharing Economy[5]) comprises *leasing*, *performance based payment (pay for success)*, *sharing resources* and *peer to peer lending*. Examples are AirBNB (accommodation) and Uber (transport).

*The circular economy is an operating model to ensure that the economy does not harm the environment and in fact **benefits the planet** the more of it that occurs.*

Social enterprise

Social enterprises use business principles to achieve social good and seek to make a positive change in the world. There is no universally agreed-upon definition for social enterprise, but key is a focus on making *social impact* as much as making money[6]. Social impact is the *change delivered for people by an organisation's actions*; these can be positive, negative, intended or unintended. Clearly the aim is to have a positive effect by tackling societal problems, improving opportunities for disadvantaged people and strengthening communities.

Social enterprises differentiate themselves from charities and traditional non-profits by building in financial sustainability meaning they are not reliant on grants and continued funding. They typically show the following characteristics:

- **Have a clear social mission**
- **Generate majority of income through trading goods or services**
- **Reinvest majority of their profits into their mission or organisation**
- **Are independent and autonomous from state**
- **Are transparent and accountable**

It should generally be clear what groups of people social enterprises support, and these stakeholders are often called *beneficiaries*. They typically fall into the following groups:

- Children and young people
- Disabled
- Ex-offenders
- Homeless
- Living in poverty
- Long-term health conditions
- Long-term unemployed
- Mental health needs
- Older people
- Refugees
- Victims of crime

Some examples of social enterprises include:

- **The Big Issue:** helps homeless and long-term unemployed people to move from begging to working by producing magazines sold by vendors who buy copies for £1.25 and sell them at £2.50.
- **Grameen Bank:** a microfinance organisation and development bank that makes small loans to impoverished people without the need for collateral.
- **Newman's Own:** a food company started by the actor Paul Newman distributes its profits to educational and charitable organisations.

*Social enterprise is an operating model to ensure that the economy does not harm society and in fact **benefits society** the more of it that occurs.*

Social Circular Economy

The **social circular economy** combines these concepts to deliver benefits for people, planet and profit. It allows a ***fully systemic view*** by drawing on the environmental principles of circular economy and the societal vision of social enterprise, both of which are underpinned by a pursuit for economic prosperity.

To articulate why *social circular economy* is needed, it is best to highlight the potential shortfalls, from a whole systems perspective, that the *circular economy* and *social enterprise* concepts can present when pursued in isolation.

[5] Sharing economy or collaborative consumption is an ecosystem based on sharing of physical, human and intellectual resources.

[6] Some consider purely environmentally conscious ventures as 'social enterprises'. Here they are considered 'impact ventures' or 'mission-driven enterprises' but do not fit within the 'social enterprise' category since they do not focus on a specific *social* cause. Rather, they focus on leaving a better planet and are laudable examples of circular enterprises.

Potential shortfalls

Circular economy

Circular economy protagonists have looked to governments and corporations to support the transition. This has meant a focus on the economic benefits, with the implication that circular economy is still expected to play within the current economic paradigm and match or improve upon profitability, risk or growth metrics. It has thus focused on maximising material resources and labour productivity to generate highly efficient answers, but not always highly effective ones, once a system greater than just the economic domain is considered.

What this means is that societal challenges can still be overlooked, or to be precise, **the negative social externalities created by a capitalistic model are not (necessarily) internalised by moving to the circular economy**.

As an example, the circular economy would be a proponent for a business model using a robot that could repair mobile phones slightly cheaper than the current business model where they are sent to landfill or partial recycling. However, it would still be a proponent for this robot if it was 1% more economical than hiring five refugee women doing the repairs. They would have livelihoods to support themselves, their families and spend the money in the local economy. We can see in this example that the circular economy has significant benefits over the current linear model but far less than the social circular economy approach. Put another way, using the UN Sustainable Development Goals[7] perspective, the circular economy would primarily meet one goal (12: Responsible Consumption and Production) while the social circular economy approach would meet three more (5: Gender Equality, 8: Decent Work and Economic Growth and 10: Reduced Inequalities).

It can be concluded that the system redesign using the purely circular economy approach comes to a different solution due to different constraints when compared to the social circular economy. The latter allows a slight decrease in profitability[8] to seed social progress for a truly whole system optimisation.

Social enterprise

Social enterprises on the other hand focus on delivering social impact and therefore understand these types of social trade-offs i.e. the construct is a dual focus of maximising social impact and profits. However, based on these ideals the environment can *potentially* suffer i.e. **the negative environmental externalities created by a capitalistic model are not (necessarily) internalised by moving to social enterprise.**

For example, a social enterprise supporting those with mental health issues gain work by manufacturing soap and cleaning products would always continue to increase production if there is market demand to scale its social impact and make more profits. However, manufacture of these products may use toxic chemicals, create harmful by-products and/or produce difficult to deal with waste. Even so, **the social enterprise better meets its internal objectives by harming the planet more.** Social circular economy would instead use Cradle to Cradle concepts to formulate products, likely with higher initial investment costs. However it ensures a sound ecological supply chain and the product would enrich rather than contaminate the environment.

It can be concluded that the system redesign using the purely social enterprise approach comes to a different solution due to the different boundary conditions when compared to the social circular economy. The latter allows a slight decrease in profitability[8] to preserve or even enhance natural capital and ensure a regenerative environment[9].

How it works up close

A wide variety of social circular enterprises were reviewed at different lifecycle stages from start-up to well established. The following themes were identified as common threads across these organisations:

Combining circular economy business models (CEBMs): While some organisations generate income solely through one CEBM, many organisations use several suggesting there may be synergy effects. In some cases a CEBM is used to generate income (e.g. recycling materials), while another allows it to reduce costs (e.g. reusing equipment no longer wanted by others).

[7] The Sustainable Development Goals is a UN initiative adopted by UN nations in 2015. They represent a set of goals to end poverty, protect the planet, and ensure prosperity for all.

[8] Or slightly higher business risk or lower growth.

[9] Social enterprises are values-led organisations and tend to consider environmental impact more than other enterprises. Thus they often take some mitigating steps for their activities. Understandably however, these tend to be operational fixes rather than designing out issues at start-up.

SOCIAL CIRCULAR ENTERPRISES

Retalhar: São Paulo, Brazil
Retalhar specialises in reverse logistics of used corporate uniforms to refurbish or repurpose them into new products. This is done on a contract basis to return the 'waste' back to the client that produced it. Retalhar employ an ex-offender to triage the delivered uniforms and ensure company logos are destroyed or returned, then uses a third party for laundry. It then works with women's seamstress collectives to perform the refurbishing or repurposing.


Growbox / Mycotech; Bandung, Indonesia
Growbox sells oyster mushrooms to consumers; these are in 'Growbox' format that yield 2-3 harvests on spraying of water. Growbox pays poor local farmers that use agricultural waste to help grow mushrooms Mycotech has a proprietary mycelium method to make a baked alternative building material, used in interior design for tiles or furniture.


UPASOL: Vicuña and La Serena, Chile
UPASOL operates a recycling centre in La Serena, a coastal tourist town with patchy municipal waste collection. The profits run a disabled children's rehabilitation centre in Vicuña, a town an hour inland in the Andes. The centre uses reconditioned / refurbished medical equipment, repurposed carpets for wall insulation, old hospital beds as gates and an entirely reclaimed kitchen. There is even a Museum of Old Objects to highlight the obsolescence of consumer products.


Corong Galeri: Coron, Philippines
Corong Galeri operates an eco-tourism cooperative working together with local indigenous communities to move them into decent work from dynamite fishing and damaging coral reefs to make ends meet. They use former fishing boats with each tour boat representing income for seven families. Corong Galeri provides market access, customer support and training.

Interpretation: Organisations in the UK looking to transition into the circular economy may be best placed not to start with a particular CEBM but rather consider their value proposition and select circular activities that align with its core competencies. For example, a bicycle safety advocacy group could offer to take away abandoned bicycles from its local council to run hands-on training programmes that let people learn proper maintenance and repair skills, after which the repaired bicycles could be sold (Product Life Extension) while unrecoverable metal scraps could be sold to an aggregator (Resource Recovery). This approach empowers people to maintain and repair their own bikes while generating income for further advocacy.

Broker-enabler roles: Most organisations play the broker or enabler role between disadvantaged communities and corporates / clients necessitating two skills sets; one to understand the corporate perspective, delivering consistent quality on time and minimising trouble for the client, and another to understand how to train, empathise with, motivate and support the communities performing the circular economy activities. The role provides value to clients who get access to responsible products via a professional transaction, while the communities receive market access and much needed support. A key support function is **design**; many provide design expertise to ensure products are desirable to consumers while still being cost-effective to manufacture.

Interpretation: many social issues stem from a lack of opportunity often reinforced by prejudices. This is in effect an underutilisation of social resource i.e. a person is seen as a problem to fix rather than an untapped resource. Identifying these people and what activities they could contribute to with the

right support is a critical role. However, to be successful the majority of organisations need to find and develop a market to sell outputs i.e. find demand. UK organisations should thus develop these dual capabilities of supporting beneficiaries while stoking the market in order to be the matchmaker between supply and demand. There is an opportunity for larger corporates to provide this demand by altering their procurement.

Training provision: Most of the organisations in this study empowered disadvantaged people through employment rather than delivering a service or product to a beneficiary. In these instances a significant amount of training is provided, often on-the-job skills but sometimes through a set of distinct courses built in-house.

Interpretation: as many of the organisations are relatively small, there is a significant amount of duplication in basic training across them e.g. business finance fundamentals, business processes, computer skills, quality assurance. Clearly there is an opportunity for a more centralised approach e.g. online repository of training videos that social circular enterprises could access.

Scaling impact: Organisations looking to scale their impact use three approaches:

1. Building a new marketplace, based on an online platform;
2. Automating manual operations to remove themselves as potential bottlenecks to scale; and
3. Social franchising.

Interpretation: UK organisations with an established sustainable model should look to scale using these three approaches.

Cross-subsidy model: Some organisations use a cross-subsidy model by generating income one way to fund social impact in another, rather than delivering social benefit while performing a circular activity. For example, profits from recycling fund a children's rehabilitation centre's operations.

Interpretation: not all CEBMs have to be directly aligned to the core mission; if in delivering this mission there is a circular opportunity and the capacity to deliver, then it is possible to generate profits and support the core mission. However, this was atypical and caution is advised before undertaking this model. Firstly it may take away resources from core into non-core activities. Secondly without proper focus, cost control may be poor. Thirdly, the setup and running costs in the UK may be higher than in emerging markets, while global market pricing often dictates revenues for recycled material i.e. costs may outstrip sales.

Small capital operations: Organisations in the study are typically low capital operations and scale somewhat linearly without need for large jumps in capital spend.

Interpretation: most organisations have few fixed assets. This may be partly to do with the study design but also to do with the more human-scale and thus distributed nature of operations. This suggests that there are low barriers to entry for UK organisations looking to transition. Most operations do not seem to have a minimum scale requirement meaning one person could in theory run the venture. This makes it amenable for pilot testing with scale achieved by adding a human resource – useful for corporates to use an in-house entrepreneur (or 'intrapreneur') approach or pilot a new model with a social circular enterprise partner e.g. to valorise non-continuous waste streams like office furniture.

Ad-hoc volunteer support: Some organisations suffered from the side-effects of temporary volunteer support with inability to maintain website content and business processes due to lack of proper handover.

Interpretation: access to volunteers is likely an enabler for scale, easing the transition from micro to small, and small to medium enterprises. Discretising tasks, ensuring their completion and proper handovers will make roles more rewarding resulting in more committed volunteers and better outcomes.

Emerging markets focus: While the above themes have strong UK applicability, there are areas of differentiation in emerging markets. Waste management is an area where the lack of formalised municipal collection presents more of an opportunity for an informal (social circular) economy to exist.

Also, a significant amount of labour is required in some activities showcased here. This cost structure may be profitable in emerging markets where wages are comparatively low but could be prohibitive at UK living wages. Thus to allow those models to flourish in the UK there would need to be a

reduction in labour per unit (e.g. faster work or automation) and/or price increases.

Interpretation: while UK organisations may be more limited to participate profitably in recycling than in emerging markets, there are still opportunities e.g. schools could ask their students to bring in aluminium cans – this could be aggregated and sent to a processor for close to £1,000 a bale, in turn funding educational activities. Alternatively, an urban farm delivering plant growing programmes could use its agricultural waste or local food waste as a growth medium to run a therapeutic mushroom growing programme for those with mental health issues, then sell the mushrooms for profit.

Social Circular Business Model Canvas: The Social Circular Business Model Canvas (SCBMC) proved to be a useful tool[10] in guiding conversation and drawing out information and insights, and concisely capturing how social circular enterprises generate and deliver value. Areas like Unique Advantage and Governance not captured by the traditional Business Model Canvas proved to unearth information that would have otherwise been missed.

Interpretation: social circular enterprises (and those aspiring to be) should use the SCBMC to assess their activities at management meetings and pivot or refocus as necessary. It is also useful as a concise visual communication aid to portray the purpose, aims and approach of an organisation.

Reverse logistics: A key hypothesis tested was that for reverse logistics to work, it requires user-powered collection i.e. the previous product user delivers it. The **five themes** identified did not corroborate this hypothesis in that return of an item by the previous user is in fact seldom seen in emerging markets. Instead organisations 'price in' the added logistics costs into their product/service price or push the risk back to their suppliers. The organisations in this study mostly stick to collecting lower value highly distributed materials e.g. recyclable waste. Therefore mechanisms dealing with complex and/or high residual value products (e.g. medical imaging equipment) are not seen, likely as assets are retained within commercial service contracts.

The five return mechanisms identified:

- **Collection as a service:** generally used for continuously generated mixed waste; occasionally done on a free basis for items with significant residual value e.g. pick-up of donated furniture for reuse.
- **Product price includes collection:** Collection represents a significant activity of the business but differs to the above as revenue is generated **only from product sales not collection**. The material is often homogeneous e.g. water hyacinth leaves, and generally has value added to it rather than just being triaged for recycling and processing. It is predicated on the value per mass ($/kg) being high enough to incorporate logistics costs as a small part of the cost structure of the product.
- **Part of a contract:** typically for single type end-of-life products produced in a batch manner e.g. corporate uniforms every three years. The homogeneous nature of the material within each batch is of high value as it does not incur triage and separation costs i.e. a purer and higher quality feedstock that justifies extra design work to repurpose the feedstock and add further value. This and the mitigation of waste disposal costs means that reverse logistics costs can be recovered in the contract price.
- **Push to supplier:** brokers push the risk and cost of reverse logistics back up the value chain to suppliers who are typically productive groups and artisans. These groups live close to the origin of the 'waste' (or 'nutrient') and therefore can source it for low or no cost.
- **Push to user or 'waste producer':** not prevalent in emerging markets. However, it is widespread in developed nations, where users who have no further need for a product often drop off the item e.g. charity shops.

Interpretation: the five mechanisms are directly applicable to UK organisations to develop their own reverse logistics systems and enable circular economy business models to thrive.

[10] https://www.socialcirculareconomy.com/social-circular-bmc.html

Recommendations

An expanded version of these recommendations can be found on page 38.

Government

1. Government to support more research to quantify and evidence the potential benefit of a social circular economy.
2. Government to take an active role in encouraging and supporting social circular enterprises.
3. Government to encourage the development of an online platform to connect and support these organisations.
4. Government to recognise this report's definition of the social circular economy.
5. Government to improve consumer awareness of social circular economy.
6. Government to procure products and services from social circular enterprises.
7. Government to pursue enabling legislation such as a tax breaks to encourage the growth of social circular enterprises.
8. Government to work with schools, universities, training providers and other stakeholders to create an educational programme to ensure circular economy and social enterprise knowledge is embedded at a young age.

Communities

9. Circular economy and social enterprise proponents to network with each other.
10. Community champions to develop local communication and assets.

Circular social enterprises

11. Currently operating social circular economy organisations strive to become more relevant through scale and professionalisation.
12. Start-ups should be encouraged to utilise the framework to support the transition to a social circular economy.

How everybody wins

Society, Environment and Economy (or People Planet Profit)

Circular economy strategies capture and generate value while preserving the planet; combining it with the social enterprise archetype transforms this value into social value (or impact) as well as economic profit.

- Society wins with a reduction in inequalities and support for the disadvantaged with commensurate reduction in costs for governments.
- Environment wins with far fewer emissions and raw materials extracted.
- Economy wins with large net material savings, price risk mitigation, employment and reduced externalities.

Companies

There are benefits from transitioning to a social circular enterprise or at least engaging with and procuring from these organisations:

Social circular enterprises

- **Deliver social impact while making profit.**
- **Ensure positive environmental impact**.
- **All of the benefits from going circular** such as reduced material and waste management costs, mitigated risk of raw material price volatility, less product complexity and increased customer interaction.
- **Reputation enhancement** from delivering socially and environmentally responsible products and services.
- **Helps to attract consumers and employees** that are increasingly conscious of the social and environmental impacts caused by their purchasing choices and also who they work for. Consumers look for the story behind their products and services and are willing to pay a premium for those that align best with their values, while employees share a similar sentiment for their employers and are more motivated if they feel what they are doing is making a positive difference.

Collaboration with social circular enterprises

- **Some of the of the benefits of going circular** such as reduced costs e.g. landfill costs
- **Some reputation enhancement** from supporting socially and environmentally responsible products and services.
- **Can start with small steps:** most companies have a waste management solution for continual waste, but may not have an economically satisfactory solution to batch wastes e.g. corporate uniforms, carpets, furniture. In these cases, utilising a social enterprise to collect, repurpose, repair, refurbish and/or recycle this ‘waste’ is a great first step. This provides a better waste management solution than landfill or waste to energy. Further, ‘waste’ can be repurposed into corporate gifts with a great story that can reinforce company marketing efforts.
- **Attract new loyal customers and employees:** stakeholders and beneficiaries engaged with social circular enterprises are likely to be attracted to brands they see supporting these organisations, meaning brands could develop a new base of loyal customers with low customer acquisition costs, and act as a differentiator for potential employees.
- **Public procurement should engage more with the social circular economy** particularly in the UK, where it perfectly aligns to the aims of the Social Value Act 2012 to bring about wider system benefits.

Users and Consumers

- **Innovative and unique products:** many of the products in the social circular economy need innovation and design as they often work with non-homogeneous ‘waste’.
- **Products and services aligned to values:** consumers increasingly want to make a positive choice with their wallets; products and services delivered under this archetype seamlessly matches the impacts ethical consumers seek.

The Concept

The **social circular economy** unites the **circular economy** and **social enterprise** concepts to draw on their individual strengths while counteracting their potential weaknesses when viewed independently, in order to deliver benefits for people, planet and profit. An overview of each of these concepts is provided in the following sections.

The limits and drawbacks of the current linear economy and the social issues caused by existing business-as-usual are not covered in detail here; plenty of literature exists providing a rich evidence base on these issues. This study seeks only to highlight the clear case for change and propose an updated archetype, the *social circular economy*, to guide the system change.

Circular Economy

The circular economy is typically defined as an industrial economy that is regenerative and restorative by design, keeping resources in use at their highest value for as long as possible. It is an economy where products, components and materials are designed and made for 'loops' such as reuse, refurbishment and recycling.

It replaces the *linear economy* based on ***take***[11]***, make*** **and** ***throw away*** that assumes the earth has ***infinite resources***. Instead the circular economy is one where we:

1. **Put in only renewable and sustainable resources;**
2. **Endlessly cycle technical and biological nutrients; and**
3. **Minimise waste and negative externalities**[12]**.**

The famous 'butterfly diagram' below by the Ellen MacArthur Foundation encapsulates the principles of a circular economy and the key 'loops' that comprise it. The key tenet of keeping resources at their highest value at all times means focusing on *tighter loops* where **reuse** (whole) is better than **refurbishment** (parts) which is favoured over **recycling** (molecules). Therefore, while **recycling** is the most well-known 'loop' of the circular economy, it is in fact the least beneficial in terms of preserving embedded resource.

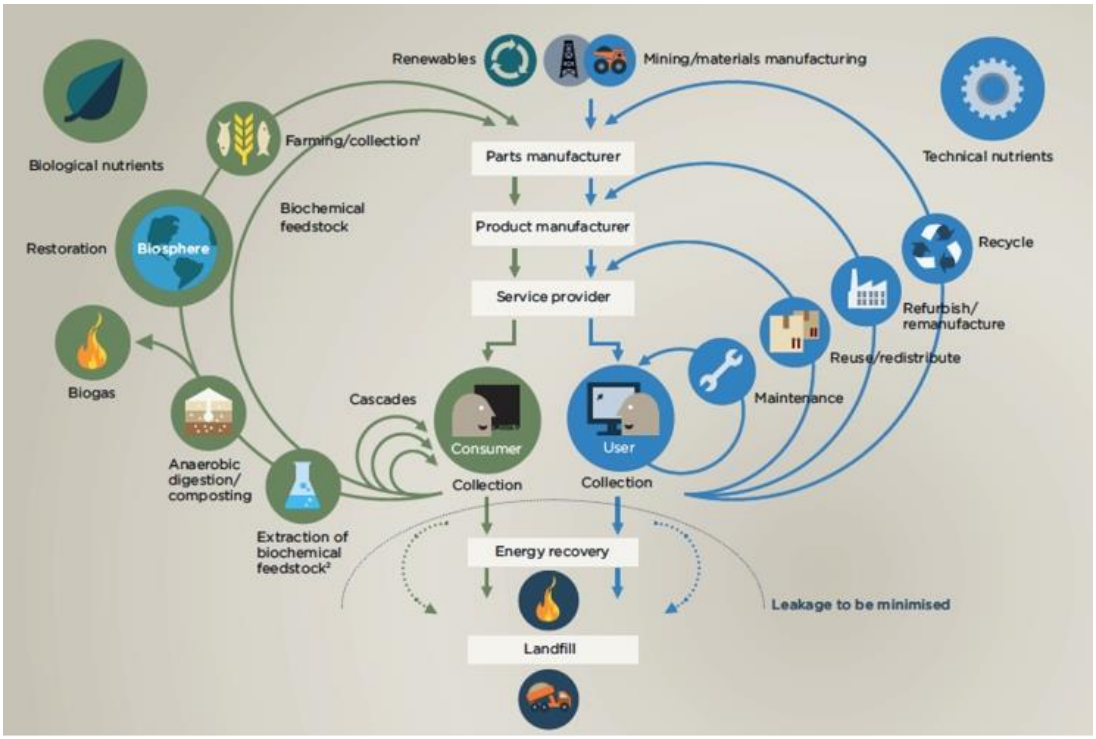


Figure 1: Circular economy system diagram: 'butterfly diagram' (Ellen MacArthur Foundation, 2013)

[11] Extracting raw materials from the planet e.g. oil, gas, coal, metals, minerals and trees.

[12] Externalities: consequences (costs or benefits) of an activity which affect other parties that do not choose to incur those consequences.

Growing popularity

This clear and compelling narrative has become a popular mantra in recent years and has been adopted as a strategy at the EU Commission[13], has made it into G7 Summit Declarations and is making inroads into the US, particularly the Chambers of Commerce. There are many advocates with the most vocal champion being the Ellen MacArthur Foundation[14], its mission being to accelerate the transition to a circular economy.

Circular economy business models (CEBMs)

Since the circular economy is an operating model that describes the high-level basis for creation of value in an environmentally positive way, there are also a set of business models that describe how an organisation creates and delivers this value. These can be termed circular economy business models (CEBMs) and fall into five broad groups:

1. **Dematerialisation:** reducing the amount of resource required to create products through *digitisation*, *on-demand production (made to order)* and a *move to reusable products*. Examples are Netflix streaming shows and films rather than producing and sending DVDs, or the Kindle displacing up to hundreds of books.
2. **Circular inputs:** using renewable (e.g. solar power), fully biodegradable (e.g. untreated wood), sustainable (e.g. properly sourced palm oil) and/or fully recyclable (e.g. pure high density polyethylene) for production.
3. **Product life extension:** extending the life of products through *design for durability*, *design for modularity*, *maintenance and repair*, *reuse*, *reconditioning*, *refurbishment*, *remanufacture*, *repurpose* and *part harvesting*. Examples are Patagonia that (designs for) repair of their clothing and Fairphone that designs phones built with durability and modularity in mind using ethical supply chains.
4. **Resource recovery** through recycling, bio-chemical extraction, anaerobic digestion and composting. Examples are Toast Ale which uses surplus bread to brew beer and the carpet manufacturer Interface, who through their Networks programme collect nylon fishing nets to be recycled into new carpet yarn by its partner Aquafil.
5. **Product as a service or Product Service System** (includes Sharing Economy[15]) comprises *leasing*, *performance based payment (pay for success)*, *sharing resources* and *peer to peer lending*. Examples are AirBNB (accommodation) and Uber (transport).

Benefits

Financial and employment

The financial benefits of a circular economy have been well highlighted and is estimated to have the potential to unlock $630 billion a year in the EU by 2025 (Ellen MacArthur Foundation, 2013) and $4.5 trillion globally by 2030 (Accenture, 2015). From an employment perspective, in the UK alone, half a million people could be working in the circular economy with over 100,000 of those as new jobs created (WRAP, 2015).

Environmental and Social

While an important foundation of the circular economy is that it is an industrial economy that benefits the planet, there is in fact a limited amount of research into its environmental impact; rather, it seems to be taken as a given. This lack of information is partly due to an emphasis on financial and employment metrics to appeal to corporate and policy decision-makers, and partly due to the complex nature of calculating environmental impacts.

From a social perspective, beyond potential employment output metrics, there is again limited research. Similar to the environmental impact, social impact is typically very difficult to measure.

*In essence, the circular economy is an operating model to ensure that the economy does not harm the planet and in fact **benefits the environment** the more of it that takes place.*

[13] http://ec.europa.eu/environment/circular-economy/index_en.htm

[14] Founded by Dame Ellen MacArthur who sailed solo around the world. She realised during her trip that all that she had to live off was in her yacht. This struck her as a nice metaphor for humans travelling on earth through space; our current approach is unsustainable and that a different, circular, system is needed.

[15] Sharing economy or collaborative consumption is an ecosystem based on sharing of physical, human and intellectual resources.

Social Enterprise

Social enterprises use business principles to achieve social good and seek to make a positive change in the world. There is no universally agreed-upon definition for social enterprise, but key is a focus on making *social impact* as much as making money[16]. Social impact is the *change delivered for people by an organisation's actions*; these can be positive, negative, intended or unintended. Clearly the aim is to have a positive effect by tackling societal problems, improving opportunities for disadvantaged people and strengthening communities.

Figure 2: A spectrum of social enterprise forms[1]

Social enterprises differentiate themselves from charities and traditional non-profits by building in financial sustainability meaning they are not reliant on grants and continued funding. However they come in a huge variety of shapes and sizes with some that look like local charities and others like big corporations (*Figure 2*). They operate within a broad spectrum of organisational forms (except pure commercial enterprise), but as a good rule of thumb social enterprises show the following characteristics:

- **Have a clear social mission**
- **Generate majority of income through trading goods or services**
- **Reinvest majority of their profits into their mission or organisation**
- **Are independent and autonomous from state**
- **Are transparent and accountable**

It should generally be clear what groups of people social enterprises support, and these stakeholders are often called *beneficiaries*. They typically fall into the following groups:

- Children and young people
- Disabled
- Ex-offenders
- Homeless
- Living in poverty
- Long-term health conditions
- Long-term unemployed
- Mental health needs
- Older people
- Refugees
- Victims of crime

Some examples of social enterprises include:

- **The Big Issue:** helps homeless and long-term unemployed people to move from begging to working by producing magazines sold by vendors who buy copies for £1.25 and sell them at £2.50.
- **Grameen Bank:** a microfinance organisation and development bank that makes small loans to impoverished people without the need for collateral.
- **Newman's Own:** a food company started by the actor Paul Newman distributes its profits to educational and charitable organisations.

*In essence, social enterprise is an operating model to ensure that the economy does not harm society and in fact **benefits society** the more of it that takes place.*

Social Circular Economy

The *social circular economy* combines the two archetypes described above i.e. where organisations operate commercially within the circular economy **and** also have a social mission. An example might be Organisation A transforming corporate uniform 'waste' to bags made by economically-disadvantaged people and providing them with a decent income in good working conditions.

The social circular economy recognises that the global system should be represented by a thriving economy embedded within a rich society that is in turn part of a wider regenerative environment.

[16] Some consider purely environmentally conscious ventures as 'social enterprises'. In this study, these are considered 'impact ventures' or 'mission-driven enterprises' but would not fit within the 'social enterprise' category since they do not focus on a specific *social* cause. Rather, they focus on leaving a better planet and are laudable examples of circular economy enterprises.

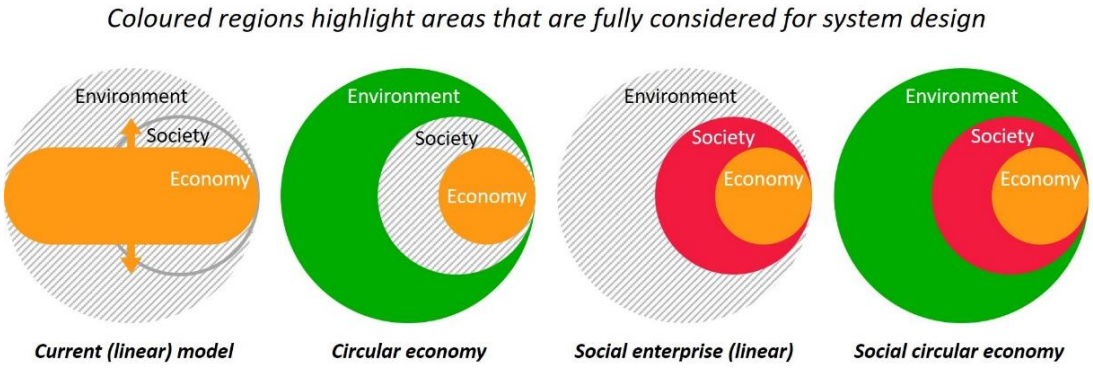


Figure 3: Schematics of systems designed by the different archetypes

It also recognises that more local and distributed solutions, or value creation, are key to achieving sustainability since there are costs to these system domains from exploitation and movement of resources. *Concentration of value creation engenders inequality* economically, socially and environmentally, since fewer people can be involved in that value-creating step. Yet with traditional economies of scale models, production occurs at massive scale in one location with outputs distributed all over the world. While this approach delivers incremental economic benefits for the value creator, it increases the risks of shocks to the system and tends to incur social and environmental costs that are not paid for. It is clear that the economy is encroaching ever more on the domains of environment and society (
Figure 3) with many examples where both are subservient to the economy at huge scale (**Error! Reference source not found.**).

The exact quantitative attribution of impact to industry can be debated, but what is clear is that there are massive environmental and social costs to how the current economy operates. One outlook is to say there are always winners and losers and the planet is here to be exploited and so it is worth harming for the economic benefits accrued.

Social circular economy posits that this is an unsustainable view and that there are ways to enhance personal wellbeing whilst improving society and environment. It is a principles-based approach, marrying circular economy and social enterprise together to 'fill in the gaps' potentially created when they operate on a standalone basis (see Potential Shortfalls below).

In essence, social circular economy is an operating model to ensure that the economy does not harm society or environment and in fact ***benefits both society and environment*** *the more of it that takes place.*

Figure 4: Overview of major environmental and social crises in recent years

A natural fit: the human-scale

Much of the circular economy is about recovering value from products, and products by their nature are widely distributed amongst people. This then poses a challenge to transitioning to the circular economy from the current traditional economic model – in which one giant factory manufacturing products to gain marginal economies of scale would need to be collected at end of use, then sorted and/or transported back to this mega factory to be made new again. Unless products have high inherent value, this added complexity, and thus cost, in reverse logistics may not be recouped by the mitigated raw material costs and labour. If instead the product value was *retained and recovered closer to the consumer* i.e. circular economy at the local human-scale, this could avoid the associated complexity and cost. For example, if consumers dropped off a laptop locally for refurbishment this would incur far less cost than sending a courier to pick it up, bring it to a national refurbishment centre and finally back by courier to the consumer.

Social issues reside by their nature with people and thus need localised and distributed models to support them; for example it is difficult to help an isolated elderly woman without having a local presence.

There is therefore a clear match in scale between products (with people) and social issues (also with people). What if some or all of the collection, value recovery and remarketing of products could therefore be done at this local human-scale level? Could circular economy value creation then also be utilised to deliver in-situ *social value*?

This underpins the need for a local and distributed approach – local solutions for local issues and building in resilience through diversity to system shocks. Consider for example the financial, environmental and social value delivered by a network of automotive component remanufacturing workshops across Europe supporting and training ex-offenders to get back into employment. Then consider how this potential would be undermined if one mega factory in Germany performed all the remanufacturing for Europe. Consider also the resilience the networked approach has to a flood in the vicinity of the factory meaning total EU remanufacturing shutdown.

Not less bad, more good

Social circular economy is not about minimising environmental impact while delivering a social mission, nor is it just providing equitable working conditions while operating in a circular manner. It is indeed an ambitious aim, because it prescribes pursuing both social and environmental goals and thus incurring the cost of business of delivering positive externalities, all the while competing against other traditional economic actors that do not get penalised for the negative ones they create –activities effectively subsidised by society and planet. Consider the difficulty Organisation A mentioned above would have competing on price with Organisation B that makes bags from cheap virgin cotton (consuming huge amounts of water, fossil fuel fertilisers and toxic pesticides) with workers that have few rights (too often underage and under paid).

That said, it is a model that clearly works; thousands of charity shops exist around the world that are the enterprise division of a charity (i.e. social enterprise) collecting unwanted belongings or procuring second hand goods to sell again. Here value is created through the ‘reuse’ loop of the circular economy, with profits being directed toward the charity’s social mission. Later sections of this report will highlight many more examples.

Why is it needed?

Both circular economy and social enterprise sound like worthy approaches to delivering benefits to the world so why is the social circular economy needed? This is because neither framework takes a **full systemic view**; there are instances where each model could produce non-optimal outcomes from a global perspective; these shortfalls are described below. Essentially the social circular economy is a framework where global system benefits are produced (economic, environmental and social), not some benefits at (potential) expense of others.

Potential shortfalls of the circular economy

To ensure continuing momentum for the rise of the circular economy agenda, there is a trend within circular economy proponents to look to governments and large corporations to support the transition. This has meant a focus on the economic benefits of the circular economy, particularly through the lenses of *increased profitability* and *reduced risk*. *Higher growth* (barring new activities) has less prominence as it fits less well with circular economy principles.

The argument goes that since products return to a company, it faces reduced costs of procuring raw materials by using these returned materials to produce new products. This also decouples the company from

volatile pricing in commodity markets e.g. steel, meaning lower financial risk. It also means needing a closer relationship with the customer leading to better follow-on sales opportunities. All these factors appeal to shareholders and thus corporate leaders. The implication of this is that the circular economy is still expected to play within the current economic paradigm and match or improve upon profitability or risk metrics. It focuses on maximising material resources and labour productivity to generate highly efficient answers, but not necessarily highly effective ones once you consider a system bigger than just the economic domain.

What this means is that societal challenges can still be overlooked – or to be precise, **the negative social externalities created by a capitalistic model are not (necessarily) internalised by moving to the circular economy**.

As an example, the circular economy would be a proponent for a business model using a robot that could repair second hand mobile phones slightly cheaper than the current business model where they are sent to landfill or partial recycling. However, it would still be a proponent for this robot if it was 1% more economical than hiring five refugee women doing the repairs. They would have livelihoods to support themselves, their families and spend the money in the local economy rather than it being sent to a corporate bank account with no linkage to the local context of repair. We can see in this example that the circular economy has significant benefits over the current linear model but far less than the social circular economy approach. Put another way, using the UN Sustainable Development Goals[17] perspective, the circular economy would meet one goal (12: Responsible Consumption and Production) while the social circular economy approach would meet three more (5: Gender Equality, 8: Decent Work and Economic Growth and 10: Reduced Inequalities).

It can be concluded that the system redesign using the purely circular economy approach comes to a different solution due to different constraints when compared to the social circular economy. The latter allows a slight decrease in profitability[18] to seed social progress for a truly whole system optimisation.

Potential shortfalls of social enterprise

Social enterprises on the other hand focus on delivering social impact and therefore understand these types of social trade-offs i.e. the construct is a dual focus of maximising social impact and profits. However, based on these ideals the environment can *potentially* suffer i.e. **the negative environmental externalities created by a capitalistic model are not (necessarily) internalised by moving to social enterprise.**

For example, a social enterprise that supports those with mental health issues gain work by manufacturing soap and cleaning products would always continue to increase production if there is market demand in order to scale its social impact and make higher profits. However, the production of these products may use toxic chemicals, create harmful by-products and/or produce difficult to deal with waste. Even so, **the social enterprise better meets its internal objectives by harming the planet more.** Social circular economy would instead use Cradle to Cradle concepts to formulate products, likely with higher initial investment costs. However it ensures a sound ecological supply chain and the product would enrich rather than contaminate the environment at end of use.

It can be concluded that the system redesign using the purely social enterprise approach comes to a different solution due to the different boundary conditions when compared to the social circular economy. The latter allows a slight decrease in profitability[18] to preserve or even enhance natural capital and ensure a regenerative environment[19].

[17] The Sustainable Development Goals is a UN initiative adopted by UN nations in 2015. They represent a set of goals to end poverty, protect the planet, and ensure prosperity for all.
[18] Or slightly higher business risk or lower growth.
[19] It is noted that social enterprises are values-led organisations and tend to consider environmental impact more than other enterprises. Thus they often take some mitigating steps for their activities. Understandably however, these tend to be operational fixes rather than designing issues out at onset, where typically 70-80% of environmental impact is decided.

How it works up close

Overview

Objectives

This study aims to be an information tool to improve understanding of the social circular economy and to enlist broad support for putting it into wide-scale practice. It aims to highlight the themes, opportunities for, and obstacles to the social circular economy and take the first steps to draw lessons for policy-makers, businesses and practitioners, and drive a more systemic transition towards a social circular economy.

Showcase organisations

There are numerous case studies for circular economy organisations and there are also a large range for social enterprises, but scant systemised information on organisations combining both concepts. Thus a key goal is to showcase social circular enterprises to evidence that they can be successful, scalable, sustainable and socially impactful.

There is a growing desire for forward-thinking organisations to participate within this framework but many are unwilling to invest as first-movers. Consequently, proving the concept with a showcase of a diverse set of organisations is key to 'de-risk' the approach for other organisations.

Themes

A review of the organisations is essential to draw out common themes, such as what models are prevalent, what products, services, causes and beneficiaries do they focus on, and what opportunities and challenges exist for those pursuing the social circular economy. While it is outside the scope of this study to develop a full framework for building organisational roadmaps toward a social circular economy, these themes present a helpful guide for those looking for clues to make the transition.

Social Circular Business Model Canvas

The Business Model Canvas (BMC) has gained significant traction in recent times as a simple yet robust mechanism to demonstrate how a business generates and delivers value. It is a one page template with nine boxes[20] to be filled in to capture an organisation's business model. It has spawned other versions that focus on social enterprise, circular economy and lean start-up. The different versions all have their merits, but when tested have not always fully captured the finer points of a social circular enterprise. Therefore, a new framework was developed to be tested on site visits to see its relevance and use for social circular enterprises. The areas covered within the framework effectively provided the interview guide on site visits, primarily to frame the discussion and ensure that all relevant facets of the organisation were covered in the research phase. Therefore a key aim was to further develop and test this framework for capturing how social circular economy organisations generate and deliver value.

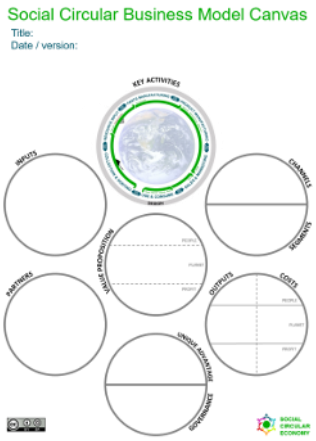


Figure 5: Social Circular Business Model Canvas (SCBMC)

Unlocking the reverse logistics conundrum

A significant hurdle to the implementation of the circular economy is reverse logistics. It is not within the core competencies of most organisations, can require significant investment and typically requires a large strategic shift in the way the enterprise produces and delivers its offer to its customer. Therefore, a major hypothesis to test is that reverse logistics is successful only when costs are kept low by either getting the previous user of a product to deliver it for value recovery, or when performed at local scale so that transport costs are a minimal part of the cost structure. An understanding of working examples and potentially any identifiable mechanisms would facilitate other organisations to become more circular.

[20] Partners, Resources, Activities, Channels, Relationships, Segments, Revenues and Costs

Approach

Candidate Selection

While the social circular economy is present in developed national economies like the UK, a strong focus on labour productivity and higher labour costs mean some previously human powered activities have been phased out. Consequently, the best learnings may well be achieved in emerging markets (or 'Global South') where labour costs are lower, potentially allowing more human centred recovery approaches; concurrently these areas are where social issues are more acute and widespread, presenting a greater opportunity for different models to appear. This sentiment was echoed in discussions with circular economy proponents from these regions who have also noticed a tendency for discourse in Europe and the US to omit wider social implications and to fail to learn from models found elsewhere. Therefore this study aims to plug that gap and focus on organisations operating in these regions.

A global log of social circular enterprises worthy of further study was compiled with a bias toward small and medium enterprises (SMEs) that tend to be more operational than strategic. This was a deliberate decision to focus on 'doing' over 'planning' and also broaden the search to ensure a different perspective to the available circular economy or social enterprise focused case studies.

These organisations were grouped by geography to ascertain which areas had a 'critical mass' i.e. high concentration of candidate nations worth visiting. Further, to maximise the breadth of organisations it would be preferable to pursue a wide diversity of working practices, cultures, languages and religions. Finally, examining a range of income per capita would provide yet more varied breeding grounds for innovative models to be forged. With these criteria, the four countries selected were Brazil, Chile, Philippines and Indonesia, representing a total population of almost 600 million people. They showed a good spread of GDP[21] per capita indicating a range of socio-economic levels ranking 54th (Chile), 76th (Brazil), 99th (Indonesia) and 117th (Philippines) of 185 nations[22].

African nations were not included in this study owing to a lack of critical mass in any given country[23] (perhaps due to limited internet and media presence of organisations), time constraints and logistics; however they do warrant further investigation. It is noted that African nations are found toward the bottom of GDP per capita rankings meaning that low labour costs could produce interesting models not seen elsewhere, but with the corollary that the insights may have less direct applicability to richer nations.

Methods

The log was screened to shortlist social circular enterprises to approach for a site visit with the majority accepting requests. The research was thus principally primary, carried out by interviews with the organisation, combined with general observation and shadowing of day-to-day operations. Typically this involved a tour of the site(s), a discussion about their business model, perceived barriers and opportunities, and the financial and social impacts delivered.

The interview was guided using the social circular business model canvas (see appendix) which was continually adjusted with minor updates during the research phase to better capture the kind of information encountered:

[21] Gross Domestic Product, monetary value of all finished goods / services produced in a country

[22] Based on International Monetary Fund 2015 list of 185 countries. The bottom 20 are all African nations which also make up 31 of the bottom 40.

[23] Except perhaps South Africa.

Showcase of organisations

There are many different ways to group the organisations reviewed, for example based on the 'loop' of the circular economy they participate in, the Sustainable Development Goals (SDGs) they support or the beneficiaries they serve to name just three. This study focuses on business models to highlight that these organisations are sustainable ***enterprises***, specifically using the five groups of circular economy business models (CEBMs) introduced earlier.

Conspicuously many organisations end up straddling multiple groupings whichever 'lens' is used, be it SDGs, CEBMs or other relevant groupings.

Dematerialisation

Dematerialisation is typically a less prevalent CEBM, yet notable examples were found.

On-demand

One approach to dematerialisation is to create items only on-demand – several organisations used this model in conjunction with the refurbishment or repurposing of corporate waste and so could also feature in the **Product life extension** CEBM section.

Retalhar: São Paulo, Brazil

Retalhar specialises in the reverse logistics of corporate uniforms and then refurbishing or repurposing them into new products. This is done on a contract basis to return the waste (or rather 'nutrient') back to the organisation that produced it in the first place. The uniforms are delivered to Retalhar who employ an ex-offender to triage the items and ensure things like company logos are secured (destroyed or returned) and then use a third party for laundry. Retalhar then works with six women's seamstress collectives to perform the refurbishing or repurposing. The collectives are typically enterprising women that have learned sewing skills from a weekend training course run by a local NGO. The women have little access to market so Retalhar provides this, ensuring good regular income for the women. A visit to one of these collectives, *Costurando a Vida*, showed the community nature of the group; on the day of the visit, a mother, two daughters and their aunt greeted us. They related how the open relationship they have with Retalhar means potential issues are headed off early.

The majority of the items are repurposed, as the placement of logos and wear patterns mean that full refurbishment back to the original product format is often not practicable. This presents a challenge in that repurposing means producing items such as bags, smaller pieces of clothing and accessories, which require a level of in-house design expertise and generally more time-consuming and intricate work. Further, it produces more off cuts which could become 'waste'. *Costurando a Vida* in fact takes the offcuts to teach young women in the community how to sew, propagating skills.

Another challenge the bespoke nature of the business presents is it is hard to develop a standard approach to the work, with a significant amount of effort going into each contract. A potential solution is to move toward a more homogeneous product, such as shredded textile material for blankets or potentially carpets. This would potentially help with scaling but has the down-side of producing lower value product as less of the embedded work in the original product is retained and recovered.

Figure 6: Retalhar's operations and products, clockwise from left: Debranded and refurbished high-vis jacket; sewing machines; shredded textile; blanket for homeless in carry bag; bags from repurposed uniforms; women's collective at work.

Table 1: Summary of organisations visited and the circular economy business models they utilise

Organisation	Dematerialisation	Circular inputs	Product life extension	Resource recovery	Product service system (PSS)
Azzura Solar	x	x			
Bali Recycling			x	x	x
Beeconomics		x			
Bio Fair Trade		x	x		
BV Rio				x	x
Corong Galeri					x
ECHOStore		x			
Eco Farm Asia		x			
Ecotece		x			
Flor de Cabruêra			x		
GK Enchanted Farm		x			
GOMA					x
Good Food Community		x			
Growbox		x		x	
Habi Footwear		x	x		
Jacinto & Lirio		x			
Kawil Tours					x
Liter of Light		x			
MateriaBrasil		x			x
Morada de Floresta	x			x	
Mycotech		x		x	
New Hope Ecotech				x	
Pelangi Nusantara			x		
Rede Asta	x	x	x		
REMBRE				x	x
Retalhar	x		x		
Trama					x
Triciclos				x	x
UPASOL			x	x	
Waste4Change				x	x
Zebu		x			x

Rede Asta: Rio de Janeiro

Rede Asta sells artisan products, the vast majority of which are made from secondary materials i.e. repurposed. A lot of its products are sourced direct from artisans but others are made on-demand on a commissioned contract basis by companies looking to repurpose their corporate waste and take a step in 'closing the loop' on their operations, similar to how Retalhar operate.

Both organisations play a broker type role, matching demand from corporates with supply from economically disadvantaged collectives. However, they are much more than brokers in that they must speak the language of corporates and work with them in a multidisciplinary way. For example, the budget may come from the Marketing department while the business waste comes from Operations, all coordinated by the Sustainability Officer. They also need to professionalise the collectives supporting on design, quality assurance, on-time delivery and cost management.

Rede Asta has delivered large orders, for example 30,000 items in three months coordinating 19 productive groups. This required getting groups together and co-producing items while assuring quality and on-time delivery. Rede Asta records key performance indicators (KPIs) for sizable projects like this, including tonnage of waste recovered, how much $R are distributed amongst how many seamstresses – in this case $R300,000 across 150 seamstresses.

Rede Asta has realised that while these contracts are satisfying to deliver, the ability to scale their impact is limited. Thus it has developed an online platform to connect collectives directly with corporates looking for their business waste to be repurposed. This allows larger complex orders to be met by *distributing* production across collectives. This needs a level of internal professionalism and quality assurance from the suppliers which means Rede Asta still has a role in ensuring that they receive proper on-going training. The platform however decouples it from the production process itself and thus allows it to scale the impact of providing meaningful work to women living in poverty while diverting waste to landfill or incineration.

Azzura Solar: Jakarta, Indonesia

Azzura Solar delivers renewable solar lighting[24] to rural communities. The CEO spent time living in rural areas of Indonesia with these communities and understood some of the key challenges faced with solar lighting – particularly around durability, functionality and ease of use. Having a design background, he took to redesigning solar lighting:

- **Durability:** often the solar lighting market is driven by how many lights can be delivered at lowest cost within a grant budget. This sets up the incentive of delivering more units but of cheaper and flimsier construction meaning they only last a short time before breaking and becoming waste. Instead he created a rugged system to increase the life time it could be used.
- **Ease of use:** linked to the above, the system was simplified, designing out complexity so that anyone can be taught how to use it in a few minutes.
- **Functionality:** small design tweaks were made that can have a significant effect on continuing functionality. Typically, Indonesia gets very strong rain showers, therefore water can find its way into the light and ruin the electronics. Azzura's lights have a large lip and a better encased bulb to ensure that water does not get into the system. Another modification is to produce the lights, wires and components in bright colours. Beyond being more fun, it also combats the problem of dirt build up. Typically solar systems are a dark simple colour meaning dirt can accumulate without being noticed. A significant number of systems stop working purely owing to this dirt covering up vital electrical connections or shorting parts of the circuit; bright colours allow this build up to be seen and thus prompt a better level of care. Finally, the solar cell is more powerful than typical solar lamp systems which often tend to perform well below their theoretical / technical specifications – in effect capacity 'redundancy' is built in so that performance is high in all solar conditions.

Figure 7: Azzura Solar's upgraded lighting system: durable, simple and functional

With this more innovative product, Azzura pursues three tranches of business through on-demand manufacture to deliver better lighting for those with little or no access to clean lighting:

1. A proposition to Corporate Social Responsibility departments at large companies that want to engage their employees in giving back to society. Azzura agrees a number of systems to be delivered to a community and sends in an order to their supplier. In the 2-3 weeks that it takes to deliver, it performs a site assessment to ensure a smooth installation process. When the systems arrive, more often than not Azzura will arrange a corporate team-building away day to install the systems. This avoids labour costs and provides the client with a closer connection to the communities they are supporting, building empathy.
2. Similar to the above, but instead working with government entities to roll-out systems on a larger scale.
3. Finally, a new business line is to work with trusted local community champions that sell systems within their own communities. Systems are again manufactured once an order has come through. Since the systems are so

[24] Also fits into the Circular Inputs CEBM.

simple, it is easy to train these champions to perform the installations. This helps scale Azzura's reach and provides installation job opportunities.

Move to reusable products

Morada da Floresta: São Paulo

Morada da Floresta develops products to allow people to move toward more sustainable living. It operates across several CEBMs but one of its main lines is a variety of products based on transitioning consumers from disposable to reusable products and dematerialising that activity. Products include reusable nappies that prevent the need for hundreds of disposable nappies and mooncups for women's menstrual cycles. These products also mean a much lower overall cost for the consumer while vastly reducing the waste to landfill. Mooncups can also make a big social impact, supporting gender equality; in India 23% of girls drop out of school when they start their periods while those that stay miss five days a month (Nielsen, 2011).

Digitisation

BV Rio: Rio de Janeiro, Brazil

BV Rio has been developing digital platforms to enhance the typically peer-to-peer opaque transactions that occur within a variety of environmentally aligned sectors[25]. Without digitisation, there would simply not be enough scale to create a viable liquid market, and coordinating up to date pricing would be far too onerous.

One platform is based on the 2010 Solid Waste National Policy (SWNP) which moved the liability for waste products from municipalities to producers, emulating European Extended Producer Responsibility (EPR) legislation. The SWNP requires producers (or manufacturers i.e. those that create future waste) to arrange for the reverse logistics to ensure consumer waste is recovered back into the production supply chain. The SWNP also recognises waste picker organisations as legitimate jobs and as key stakeholders within the recycling chain and aims to encourage a bottom of the pyramid[26] (BOP) economy. However, SWNP provides a framework but no firm guidance on how infrastructure should be deployed nor clear targets. This has had the unintended consequence of producers providing some consultancy support on governance for waste picker cooperatives or directly hiring cooperative leaders – both relatively low cost options to access the cooperatives' tax certificates for material collection that the producers are obligated to show as proof of compliance. This however does not align with paying for the value, recognised in the SWNP, of the benefits to society and environment produced by the 800,000 waste pickers gathering and sorting 70% of the selectively collected waste in Brazil. Typically a waste picker working in a cooperative would receive around R$400 per month (less than £100). Ideally, a system would be in place to pay for the collection service provided by these waste picker cooperatives in a transparent way.

To address this, BV Rio has developed a Reverse Logistics Credits system. An electronic invoice of a credit is issued by type of material when the collection, sorting and selling of sorted material is recorded. Since waste pickers get paid not just for the material value of the products they sell to a processor but also for the credit (essentially for the service of collection), this has the potential to significantly increase their income. Further, new markets are created for materials that have no real material value e.g. plastic film packaging, which are not currently collected as there is no incentive to do so.

A small pilot program with limited funds was performed in 2015 which worked well, increasing median incomes for waste pickers by 30%. The pilot study also showed that materials reach a 'level playing field' in terms of value to the waste picker, for example the price of aluminium was little affected as it already has high inherent value, but glass price effectively tripled making it much more likely to be collected. The social impact from the pilot was also pleasing; it was assumed that most cooperatives would split the extra money and share it across its members as a windfall but in fact only 30% of the cooperatives did so; 70% put aside a "rainy day" fund and/or purchased new equipment to enhance their operations. This showed a level of latent sophistication with investment decision-making that was previously not available to them.

A significant challenge in recent times has been the downturn in the economy and the

[25] responsible timber exchange, platforms for buying voluntary credits (e.g. forest reserves, tyres) and industrial effluent quota system.

[26] largest, but poorest socio-economic group.

political turbulence in Brazil. For the platform to take off there is still some work to do with policy and corporate decision-makers to roll-out the SWNP infrastructure at scale. This is a good example of how the circular economy has to be founded upon strong collaboration of a wide variety of stakeholders.

Circular inputs

Renewable energy

Liter of Light: Makati, Philippines

Liter of Light started with a frugal innovation to bring clean and safe light into shanty homes using an open source circular economy approach. They took discarded plastic bottles, filled them with water with a drop or two of bleach to keep away mould, and then developed a leak free way of putting that bottle into the corrugated iron ceiling. Sunlight is able to come through the bottle, looking remarkably like a light bulb, and thereby giving people the ability to see properly inside their homes during the day.

Figure 8[27]: The original open source innovation provides safe and clean lighting during the day.

These houses are usually very dark making moving around hard meaning this simple idea has a large social impact. Homes are often where much of the livelihood is earned e.g. making and fixing things. It allows people to see without having to pay for other more costly sources of light, some of which are hazardous, like smoky naked flames.

Liter of Light focuses on scale of impact and therefore developed a train-the-trainer type programme, teaching locals to install these 'Liters of Light' in their community, enabling them to earn an income as installers. This lets the organisation scale much quicker than by doing installations itself.

Liter of Light's focus has now moved on to solar lighting or 'Liter of Light – At Night'. It has several designs including a street lamp that includes a repurposed bottle, but its most recent and iconic design is to take a standard kerosene lamp that most people are familiar with and embed the solar light inside – a repurposing of lamps too. For this it has won international design awards.

Figure 9: Liter of Light's solar systems, clockwise from top left: solar street lamp (including repurposed plastic bottle); home lighting system (including repurposed plastic bottle); train the trainer session on soldering and building solar lanterns; lanterns to be fitted for training day; operating solar lantern.

For this solar lantern, it uses the knowledge gained from the prior phase on train-the-trainer models to teach people how to solder their own solar lighting kits to scale its reach. This allows three revenue-generating models, all focused on scaling quickly:

[27] Courtesy of Liter of Light Facebook page, Album First Bottle Lights in Malabon: Thousands More

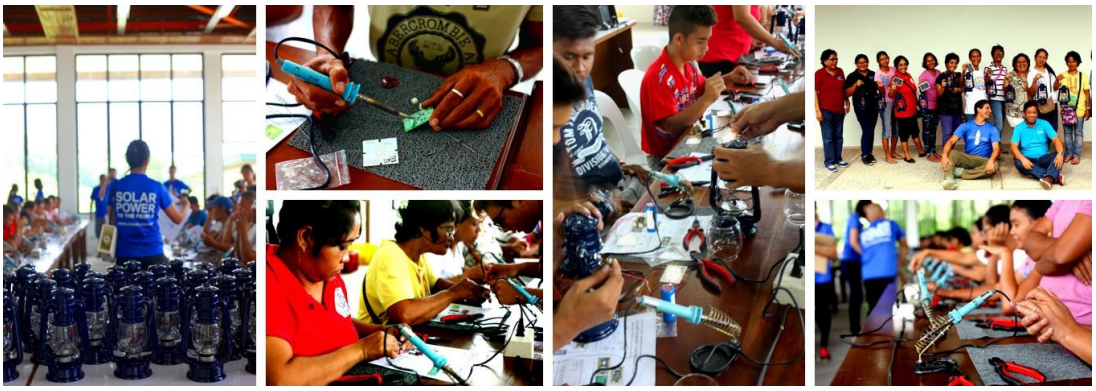


Figure 10: Various images from a training day teaching a community to build solar lanterns

1. Working typically with women's collectives on a credit basis; they are loaned the solar kits which they manufacture into solar lights. They sell these to their local community and pay Liter of Light back within 60-days of the initial kit delivery and keep the profit.
2. An offering to foundations and corporates, selling a certain number of kits. These kits are delivered to a community where they are trained to solder the kits together – some will keep the light and some go on to start their own manufacturing enterprise as per the model above.
3. Selling kits (without lanterns or solar panels) to corporates for team-building events. In a few hours, teams can build dozens of soldered kits, giving a sense of purpose to attendees while Liter of Light outsource labour and build closer relationships with potential future backers.

All three business models allow it to outsource and distribute labour to help scale their impact of getting more clean and affordable lighting and energy into disadvantaged people's hands, and where possible involve them in the income generating process.

Sustainable inputs

Ecotece: São Paulo, Brazil

Ecotece is a group of fashion experts and designers that supports textiles manufacturing collectives, not dissimilar to the broker type model seen with Retalhar and Rede Asta earlier. It provides help on:

- **Access to markets**: particularly brands that can support higher input prices;
- **Cost management:** often collectives move from hobby to trying to sell their wares; thus the products they are used to making are often lovingly and slowly crafted – often too slow to be economical. Thus Ecotece time certain parts of the manufacturing process to highlight what needs to be done quicker or should be less intricate. This is often a big behavioural shift for the collectives and requires patience to work through;
- **Design:** linked to the above, designs often need modification to ensure commercial viability. Maintaining aesthetics / commercial look during this simplification requires deep expertise;
- **Professionalism:** training on stock checks, customer services, keeping electronic cost records and systematising processes; and
- **Quality control and on-time delivery:** consistency in production and on-time delivery is key in the commercial arena to build trust for repeat business - not a forte for collectives that may not have the same priorities or prior training.

Figure 11: Ecotece face-to-face support - Clockwise from top left: Discussing Grupo de Mães que Bordam portfolio with a major Brazilian brand; simplifying designs; highlighting design challenges for Flor de Cabruêra; assessing new design options

All of this support requires significant face-to-face time with the collectives. To service this need Ecotece have developed a student work

experience programme – design students are desperate to support real life problems meaning it is a win-win-win situation (collectives, students and Ecotece). While Ecotece is a capacity-building organisation helping disadvantaged people into decent work, it makes a strong push on both brands and collectives to use sustainable inputs. This includes organic cotton, fully recyclable fibres or secondary materials like disused street banners sourced from a network of suppliers and gives a behavioural nudge on the ecosystem of textiles manufacturers.

In delivering this work, Ecotece has a mix of models it uses to generate income to continue its work: capacity building project work for foundations, consulting work for brands, and taking a percentage on products sold through new business that they have helped generate for collectives. Since there is no ideal legal structure in Brazil for a social enterprise they have a dual legal structure – a limited for-profit company and a non-profit. These allow it to manage the different streams effectively and ensure they can deliver the impact they pursue. This dual or even triple legal structure is something that was not uncommon amongst others in Brazil.

Biodegradable inputs

Eco Farm Asia: various, Philippines

Eco Farm Asia is a sustainable teak farming operation in various locations across the Philippines. Its focuses on regeneration of denuded or idle land either by purchasing small plots or working in partnership with farmers that have unproductive areas of land. The founder has worked extensively with local communities in the developing world and living near teak plantations in various countries and recognised how this beautiful, durable and valuable product could be grown more in the Philippines to produce an ethical product and support rural communities.

Eco Farm Asia has started multi-cropping, putting in coffee plant seedlings in between the teak trees to produce shade-grown organic coffee. The shade-grown coffee does not produce quite as big fruit as those mono-cropped in the sun but tend to have a lot of flavour. This multi-cropping approach has a number of benefits with a quicker cash flow for coffee than for teak (five years versus 11, 15 or 25 year harvests) while maintaining high profitability and building in well-evidenced ecosystem resilience against pests and diseases. Amazingly, bees and owls have returned to previously barren areas in just a couple of years.

Eco Farm Asia has planned three phases of work; first to test and develop the idea (ending at time of writing). Soon it will move to the second phase to develop pathways to scale, working with various stakeholders such as local government, NGOs and setting up a teak farmers' association. Using European standards of farming puts it in a niche high end segment making it more attractive for people to come on board. Phase three aims at full scale up, with three million teak trees across the country within 15 years.

Good Food Community: Quezon City, Philippines

Good Food Community uses a Community Shared (or 'Supported') Agriculture (CSA) model to deliver organic produce in a socially impactful way. CSA is a partnership between farmers and consumers in which the responsibilities, risks and rewards of farming are shared. Good Food Community offers a subscription model for city dwellers in Metro Manila to receive weekly vegetables, either by direct delivery or pick-up from local community hubs dotted across the city. For rural farmers it provides market access, training and seeds.

Good Food Community has invested significant time to build trust with cooperatives of marginalised smallholder farmers and now works closely together on planning, logistics and price-setting. The produce is focused on vegetables rather than rice or sugar cane, as the cash flow is delivered faster back to the cooperatives. This also has the added benefit that produce can be grown in the back garden so that the traditional role of women staying at home can be incorporated, allowing them to participate in being financially productive too – in fact several cooperatives have a majority of women. The farmers grow vegetables without pesticides or synthetic fertilisers and promote biodiversity, polyculture and soil health.

GK Enchanted Farm: Bulacan, Philippines

Tony Meloto or Tito Tony ('Uncle Tony') has developed Gawad Kalinga (GK) a non-profit that focuses on building communities, helping to grow the movement of supporting the poor and mainstreaming social businesses. It has provided a million homes for economically disadvantaged people or those affected by natural disasters across the Philippines. Tito Tony stresses the need for Filipinos to

believe in themselves, and is passionate about building an enabling platform to lift people from poverty. GK was awarded the 2012 Skoll Award in social entrepreneurship for its works.

In recent years, Tito Tony has realised that there is a growing issue with youth heading to urban centres for work. Since the average age of farmers in the Philippines is about 60 years old, there is growing pressure on the food production system with domestic production declining despite the fertile climate; over 70% of chocolate, milk and cheese are imported. With that in mind, Tito Tony has branched out from GK to set up the first GK Enchanted Farm a couple of hours outside Manila, with the plan to open many more farms across the country. Similarly to other GK communities, poor people are supported to build homes for a community village based at the farm. The site is constantly growing in size and includes:

- the School for Experiential and Entrepreneurial Development (SEED) to foster better understanding of farming, community, innovation and social enterprise based on biological outputs from the land.
- a 'Disney Land for social tourism' with tours and accommodation
- a 'Silicon Valley for Social Entrepreneurship' including facilities and farm land to incubate social enterprises, with the prospect of investor funding.

Figure 12: GK Enchanted Farm - clockwise from top left: Map of the farm; farm landscape; chicken farm; growing crops.

The social tourism and grants provide the income to run the farm and university while investors are attracted by the setup and reputation of GK to come and invest in ventures. The local community on the farm is then supported by the jobs created by the social enterprises incubated at the farm.

Some ventures are already successful, such as Bayani Brew that makes agri-based beverages sold in stores across Metro Manila and beyond. Human Nature, a very successful cosmetics and personal care business using raw materials grown in the Philippines, grew in tandem with the farm and employs several residents. The social enterprises all share a common thread of striving to reach financial sustainability quickly to ensure employment for impoverished people. They also seek to use organic products grown on the farm or Filipino land more widely and all share a strong work ethic instilled by Tito Tony.

Product life extension

Repurpose

Pelangi Nusantara: Malang, Indonesia

Pelangi Nusantara is a women's co-operative working in a hub and spoke model, with a Centre leading more informal cooperatives within communities. It started life by taking textile off-cuts from local batik[28] factories and other wastes to make beautiful bags.

Figure 13: Bags and accessories made from repurposed batik

Founder Bu Yanti then moved to train other local women to form a network of collectives able to sell textile products. These are exclusively women, often working from their own living rooms, meeting up weekly to work together as a collective, and creating items from novel waste materials. For example, one of the 'spoke' collectives visited had taken instant coffee sachets collected amongst the women to build bags. These are not luxury

[28] A Javanese method for producing textile of coloured designs by applying wax and dyeing – the wax leaves parts undyed. Intricate patterns can be created and often have distinct local influences e.g. a Malang batik will look different to one from Yogyakarta.

items like those made from batik, but are popular in local markets.

Figure 14: Collected coffee sachets and a bag under construction from the sachets

Figure 15: Bags made from textile off-cuts

The central hub also supports the other collectives by procuring particularly high quality items to sell on, after a level of quality assurance. The central hub creates and/or sells higher value fashion items like handbags, while the collectives are less professionalised and tend to have a range of products for local consumption – bags for markets to uniforms and accessories for community groups.

Through its model Pelangi Nusantara has a reach of over 20 cooperatives, providing more than 300 women with income in their local area. It has a strong focus on training women with not only skills in making textile products but computer literacy and foundations in finance. It has several levels of internal training to accommodate the range of prior experience – some women do not have a chance to finish high school so require different support to those that have.

Habi Footwear: Metro Manila, Philippines

Habi works with women in poor areas of Metro Manila to recover textile off-cuts from local factories. It uses a simple business model innovation to ensure quality and more easily allow local women to participate.

Essentially, Habi treat the women as micro-entrepreneur suppliers; the women live near the factories get hold of very cheap or donated textile off-cuts and weave standard sized commoditised square tiles. Habi promises to buy these at a fair price and in turn makes shoes and accessories from them through in-house manufacturing. The shoes combine this weave with organic cotton trimming and waste aircraft tyres as soles.

This outsourcing model allows Habi to vastly reduce quality control and on-time delivery issues as the intricate and difficult part of the manufacture is kept in-house while a significant part of the time-consuming and value-adding step is democratised.

Figure 16: Habi Footwear - made from weaved textile off cuts, repurposed airplane tyres and organic cotton.

Habi then reinvests some of the profits into the infrastructure to train the women and grow the business. For example, one of the benefits of the model means women can weave in their spare time at home; however some women are so prolific that their living rooms start to run out of space before the regular pick-ups by Habi. To combat this affecting their living standards, Habi are opening up a local space in which inventory can be stored and to act as a more communal co-working environment.

Resource recovery

Recycling

UPASOL: Vicuña and La Serena, Chile

Vicuña is a rural town in the Andes which does not receive much support from central government for health services. UPASOL formed from this lack of provision, with several parents starting a rehabilitation centre

for disabled children. It quickly became apparent that it required funding and equipment so a recycling centre was started in the seaside tourist town of La Serena about an hour's drive away to raise funds.

The recycling centre is embedded within a community where no alternative municipal waste collection service is available. The community come and drop their non-organic waste off in a holding area which UPASOL triages within a very compact facility. The approach is that nothing is thrown away. Even the tiny spoonful of washing powder left in an 'empty' box is collected, and over the course of a couple of months, a bag is filled to donate to poor people in the area. Loose screws and metal brackets are stored in various drawers on-site; over time enough similar items are aggregated to be useful.

Once the materials have been triaged, they are sold on to processors. UPASOL are adept at knowing the best market prices available so take the trouble to sell materials like aluminium in Santiago where the arbitrage opportunity is high versus local prices while other materials like cardboard fetch a similar price locally. The recycling operation is so successful that it can employ eight people to work there and another six at the rehabilitation centre.

Figure 17: UPASOL recycling - clockwise top left: baled plastic bottles; filing system for reusable items; triaging; glass to be recycled.

The principles of circular economy are embedded throughout UPASOL with the rehabilitation centre kitted out with donated medical equipment - much of it was broken and has been refurbished to be made use of again. The on-site kitchen also uses reclaimed equipment. At the time of visit, the centre was being refurbished so second hand carpet to insulate walls and lights from a recently closed-down business were being made ready to be installed. UPASOL makes use of broken hospital trolleys by repurposing them as a gate, maintains an old ambulance from the UK (even though the driving position is on the wrong side for Chile), and reuses donated crushing and baling machines from Japan for its recycling activities.

Practically everything in the centre is recovered and when these recovered goods are not of direct relevance to the centre, they are put into the on-site Museum of Old Objects to teach people about the transience and obsolescence of consumer products and the importance of reuse and reduction.

Figure 18: scenes from the rehabilitation centre clockwise from top left: view of surrounding Andes; donated hospital beds to be refurbished; donated shredder for recycling; refurbished wheelchair; rehabilitation equipment; rehabilitation session in background.

Waste4Change: Padurenan, Indonesia

Waste4Change is a waste management social enterprise that pursues four core activities: campaigning for better waste management, timely waste collection, maximising potential value of waste through proper sorting, and consulting services like waste audits and waste management advice.

There is limited municipal collection of waste in Indonesia so significant amounts go through informal waste collectors and then often end up being fly tipped. Waste4Change

compete with these collection services, serving residential blocks, restaurants and offices. The majority of clients in fact only want professional timely pick up of waste and are not necessarily driven by the recycling offer. This can make it difficult to compete at price parity with other collectors who may just dump the waste in the nearest river. Thus, Waste4Change takes a different approach, providing a premium service that ensures timely pick up and reports of the composition and masses of waste streams.

Waste4Change provides coloured refuse bags to its customers to sort their waste; blue for paper, cardboard, duplex and Tetra Pak, and orange for glass, metal and all plastics. These are exchanged for clean empty bags on collection, which is done using owned trucks. It hires former waste pickers to work as drivers and refuse sorters at its Materials Recovery Facility giving them a higher and assured income. The triaged materials are sold to recycling aggregators and processors.

Figure 19: Materials Recycling Facility (MRF) – clockwise from top left: filled refuse bags; scales for reporting; triaging.

Waste4Change process 3 tonnes per day of waste, around half of which is organic. The organic waste is composted either under plastic sheeting or through vermiculture and the resultant compost is either sold in bags or used to grow mangoes which are also sold.

Figure 20: Waste4Change bio-cycle - clockwise from top left: composting under sheets; bagged compost; mango grove; mangoes on sale.

Bio-cascades

Growbox and Mycotech: Bandung, Indonesia

Growbox and Mycotech are separate entities but are both run by the same people and utilise fungi to generate value from agricultural waste.

Growbox sells oyster mushrooms to consumers while supporting local farmers who provide agricultural waste and help grow the mushrooms. The mushrooms come in a variety of colours and associated health benefits. Growbox sells ‘Growboxes’ online; these are mushrooms in stasis that sprout when the consumer sprays water on it; producing three harvests.

Growbox has popularised mushroom eating in Indonesia, helping to spread the message of their health benefits. A nice touch is the development of an augmented reality app that allows consumers to view a virtual mushroom growing out of the box to see what it should look like at harvest – a question that cropped up frequently from consumers prior to the introduction of the app.

Figure 21: Clockwise from top left: The ‘Growboxes’, oyster mushroom spores growing in a controlled environment; augmented reality app showing what mushrooms look like on a real-life Growbox

Mycotech focuses on mycelium rather than edible mushrooms. It uses a proprietary method to produce a baked mycelium alternative building material. It can be used in interior design as wall tiles or even furniture.

Figure 22: Mycotech material used in a stool (left); Mycotech tiles ready for processing.

Both Growbox and Mycotech products took years of research and constant adaptation and the process is unlikely to work directly transplanted in other parts of the world. This is because the agricultural waste is relatively specific to a region while the climate is well suited to growing fungi, being warm and wet.

A circular economy definitional aside: Mycotech blurs the line between technical and biological nutrients. This is because *biological nutrients* usually refer to short life time products that get rapidly cascaded back to nature - not a good description of what Mycotech's material does. The *technical nutrient* on the other hand is a material endlessly able to loop within an economy with no loss of quality. Note, it is possible to have a technical nutrient that is bio-derived e.g. some biopolymers. Mycotech does not conform to this rule either as it is not necessarily recyclable, rather it is 100% compostable. Instead it is designed to be used for a long time, potentially being reused over more than one use phase i.e. resembles both technical and biological nutrients.

Product as a Service

Sharing economy

GOMA, Rio de Janeiro, Brazil

GOMA is an association of socially and/or environmentally minded entrepreneurs connected by collaboration and creativity. It is based in a large shared co-working space catering to start-ups in the service industries. The space is designed to allow free-flowing collaboration meaning multidisciplinary teams from different organisations can be assembled quickly to deliver innovative solutions that integrate social and environmental value. The sharing of assets and networks generated allow enterprises to get many of the benefits of being in a larger organisation while still keeping lean as a small firm.

Product as a service

New Hope Ecotech: São Paulo, Brazil

New Hope Ecotech is a start-up that is also trying to utilise Brazil's Solid Waste National Policy (SWNP) requirements for producers to set up appropriate recycling infrastructure and deliver more income for waste pickers. It takes a similar but distinct approach to BV Rio, rather focusing on providing a free service for recyclers and charging producers and institutions with a Software as a Service (SaaS) with which the clients can gather and monitor data on their recycling incentive programs. The software is online and the analysis is generated automatically, reducing the effort that producers and institutions have to spend on non-core monitoring and compliance activities.

In time this system will be expanded so that the data is audited to produce reverse logistics certifications which are sold back to producers. The profits from these are then shared to provide aggregators and waste pickers with increased income.

New Hope Ecotech are working on a trial using a corporate incentive program and analysing the best price points for various materials to incentivise waste pickers to collect different materials that maximises both the social impact (more income) and environmental impact (more varieties of waste collected). Similarly to some of the models seen previously, New Hope Ecotech is effectively a broker for distributed small actors to connect with larger organisations.

Corong Galeri: Coron, Philippines

Corong Galeri started as a gallery showcasing local art and photography in Coron, a beautiful island area. It branched out after a number of years into tours visiting nearby islands for snorkelling and scenery. It quickly became apparent that between trips there was significant damage to marine areas. This turned out to be by indigenous groups that, finding it difficult to get by, were plundering natural resources including dynamite fishing and devastating grouper and wrasse populations. Realising it was a

symptom of the lack of support they had, Corong Galeri decided that rather than reporting them to the authorities, they would meet, talk and get to know the groups. It then proposed to bring them into the tour activities to provide them with income and educated them on the importance and benefits of preserving the environment. Starting with two families, fishing boats were converted into tourist boats and a new tourism package was developed to sell 'Seat In Coach' (SIC) tours i.e. book a seat like a coach, sharing the tour with others. This was unlike the private tour offerings that other operators provided. This has grown now to 15 boats with each boat representing income for 7 families; a boat owner, a captain, some crew, food preparers (generally women) and recipients of entrance fees for access to indigenous areas and marine parks. Corong Galeri operate the market-facing side of the operation, providing access to markets and bringing in bookings.

The model is brought together as a cooperative rather than a company-employee or service provider-supplier approach which helps to empower the communities. The impact has included indigenous children staying in school, graduating college and getting jobs, previously very unlikely to happen. Beyond bringing in stakeholders in a more democratic approach, the structure has a business benefit. It makes operations leaner and more responsive to improving the service as any customer feedback is traceable to exactly the person responsible e.g. boat cleanliness. Corong Galeri can relate this feedback directly to the person in charge of that particular part of the service and help if there are any issues or change protocols to ensure that clients get the right experience. This is distinct from other operators in the area which own boats, rooms, provide food and tour guides meaning staff end up working across a variety of functions making it much harder to trace the causes to issues, and thus find solutions.

Corong Galeri utilises the product of a beautiful destination and sells access to it using an ecotourism service. It works with local indigenous communities to provide them with decent work and therefore preventing the destruction of coral reefs, marine ecosystems and rainforests in the area.

Themes

The following themes were identified as common threads across the social circular enterprises showcased in this report. The majority of these themes have applicability to the UK for organisations looking to transition to the social circular economy.

Combining circular economy business models (CEBMs)

While some organisations generated income solely through one CEBM, it was clear that many organisations used multiple CEBMs to generate income suggesting there may be synergy effects. For example, providing waste collection services allows Resource Recovery (recycling) and Product Life Extension (reuse / repurpose) of waste, and not doing both would in fact represent a loss of potential value.

Some used one CEBM to generate sales and one to reduce costs internally. A good example of this is UPASOL using Resource Recovery (recycling activities) to generate income while it uses Product Life Extension (refurbishment and reuse of medical and rehabilitation equipment) to reduce internal operation costs on social delivery.

Broker-enabler roles

Most organisations play the broker or enabler role between communities and corporates / clients. In effect this means having a dual knowledge/skills base to deliver dual value – usually a customer value proposition and a social one. Firstly, an ability to understand a corporate perspective, delivering consistent quality on time and minimising hassle for the client. Secondly to understand how to train, empathise with, motivate and support communities actually executing the circular economy activities.

One of the key areas of support was in design; many of the broker roles needed to have design expertise to ensure products are desirable to the consumer and cost-effective to manufacture.

An innovative approach taken by a few broker-enablers was to bring in-house the latter stages of the manufacturing process i.e. bring in *product manufacture* while maintaining *component manufacture* with productive groups. This simplifies the manufacturing process for productive groups to making a simpler and more uniform

component, reducing quality assurance issues that can mean costly and time-consuming rework. While some of the value addition steps are taken away from the productive groups, this is offset by the fact that they become more expert and produce those components quicker and better.

Several organisations had corporate clients that bought into the idea of repurposing their own waste into corporate gifts. They saw added value in portraying the closed loop story aligning to company values and sharing that with their own clients, employees and stakeholders through tangible corporate gifts.

Training provision

Most of the organisations in this study empowered disadvantaged people through employment rather than delivering a service or product to a beneficiary. In these instances a significant amount of training is provided, often on the job skills but sometimes through a set of distinct courses built in-house e.g. Pelangi Nusantara, Rede Asta.

Scaling impact

Organisations looking to scale their impact considered three approaches:

1. Building a new marketplace, based on an online platform (BV Rio and New Hope Ecotech)
2. Automating manual operations to remove the organisation as a potential bottleneck to scaling (Bali Recycling, Rede Asta and Trama)
3. Social franchising (Liter of Light, REMBRE)

Cross-subsidy model

Several organisations used a cross-subsidy model by generating income through a circular activity (without beneficiary involvement) to fund social impact, for example UPASOL making money from recycling to fund its rehabilitation centre, or GK Enchanted Farm running a social tourism service to fund the social enterprise incubator and SEED university.

This model is not atypical of social enterprises where some organisations operate a purely commercially division to sustainably fund a socially impactful activity, typically that has some connection to the commercial operation e.g. selling bottled water and providing profits to a water conservation charity.

Small capital operations

The organisations under study are relatively low capital operations and scale somewhat linearly without need for jumps in capital spend. This is often due to the use of underlying assets being on a continuous scale rather than discrete. For example, many organisations focus on textiles and crafts where double the amount of waste material needs double the work to repurpose with very minor asset requirements e.g. a sewing kit. Similarly, bio-based products scale with the amount of bio-material available, typically aligned to the size of land available. There were few organisations that needed access to significant infrastructure, like a factory or processing plant, to allow it to operate. The exceptions were those that had sorting centres for collected waste, but even these were generally just an open-sided warehouse with a sorting table and sometimes donated capital equipment for shredding and baling triaged recyclates.

This hints that the social circular economy does not benefit significantly from economies of scale as much of the activity is human centred. It means that it does not entail large leaps in capital for incremental increases in activity. This should therefore allow an easier path to scale as access to capital does not pose a significant barrier to entry.

The observation of small capital operations is partly due to the study design with a focus on smaller organisations but also partly down to the nature of the social circular economy which is aligned to grassroots community action that is distributed and not focused around large capital projects. This is unsurprising as large capital projects are often aligned to traditional financing techniques and social financing is still relatively new. Further review of social circular economy models using significant capital is warranted albeit initial review suggests these are indeed less prevalent.

Other models: the emerging markets countries visited have a large scale network of repair stations and metal working shops that maintain and recover value from the economic system. This is unlike many high income nations where maintenance and repair activities are dying out undermined by high labour costs and relative low price of products. That said, the research failed to find organisations in this sector with social missions working with higher capital, heavier duty, metal-based product sectors and thus do not feature here. These microenterprises are typically operated by economically disadvantaged entrepreneurs so do have social impact, but no clear social mission. An

example would be the Kumasi industrial automotive repair cluster in Ghana. This may be an overly literal interpretation of the definition of social enterprise and may also warrant further investigation. Note these microenterprises are almost always operated by men while many of the organisations in this study were driven by women.

Ad-hoc volunteer support

Due to the social missions of social circular enterprises, they often receive volunteering offers, which is often gladly received to relieve capacity issues or increase scale. However, some organisations suffered from brief temporary volunteer support. For example, a website may be setup but is no longer maintained due to the lack of business processes so no proper handover documentation is generated.

Emerging markets focus

The themes highlighted above are all applicable to the UK, however some areas have less applicability. One area is in waste management where the UK has municipal collection and processing programs organised by local councils. This service is patchy at best in the countries featured in this report and thus provides an opportunity for a thriving, yet underpaid, informal economy. It is significant in contributing to high collection rates in certain high value products e.g. 96% of aluminium cans are recycled in Brazil with the help of waste pickers. That said, in general overall national recycling rates are lower without municipal systems.

Another area is the significant level of labour required in some of the models featured – the financial structure may work in emerging markets where wages are comparatively low but the costs could be prohibitive when paying a UK living wage. To allow those models to flourish in the UK, there would need to be a reduction in labour per unit, be it automation or higher skill level, and/or an increase in price.

Not seen

Rigorous social impact measurement

While there was clear social impact being made, in general the knowledge and sophistication in social impact measurement is well below that found in the UK. It is noted that the organisations featured are relatively small so may not have the resource availability. To be fair, similar sized organisations in the UK also cannot afford a dedicated resource for social impact measurement and often fall back on output indicators. While there is awareness that better outcome measurement would be useful, most organisations are candid that if extra resources were available, they would deploy it to pursue more of the core activity rather than outcomes measurement.

Many of the featured organisations do measure outputs as indicators for environmental or social benefit where it is not cost or time prohibitive. Rede Asta was one of very few that had run surveys to ascertain outcomes amongst the women in the collectives it works with.

With the above said, most of the organisations featured are embedded in the communities they operate within and have a more intuitive feel for the impact. Indeed, often the beneficiaries are involved in the circular value-adding activity meaning that there is a vested interest or co-production of the most effective model. In fact, many of the organisations formed to solve an identified problem – finding a ‘waste’ to valorise gave them opportunity to solve it. Implicitly then, the organisations have created a *theory of change* or *logic model*, working back from the impact they wish to create to find a set of (circular) activities to meet the objective.

Bio-derived technical nutrients

No organisations were found producing bio-derived technical nutrients such as bio-polyethylene. One hypothesis is that these require a significant amount of technical innovation (not just business model innovation) with commensurate high capital needs i.e. for large organisations and thus screened out by this report’s focus on smaller organisations. Alternatively social mission organisations may not have access to such significant amounts of capital. This area warrants further investigation.

Missing loops

There were some missing loops of the circular economy e.g. remanufacturing. Considering the breadth of the circular economy it is not surprising that there are missing loops in a limited study. However, remanufacturing in its truest sense is performed with precision and requires significant capital equipment. It also requires a degree of sophistication in taking on the risk of warrantying a product to ‘as good as new’. Both these factors make it less amenable for the social circular economy at

its current maturity – in future, social circular enterprises may have access to the requisite capital and sophistication. This hypothesis was somewhat validated by finding no remanufacturing enterprises with a social mission even after a significant global search.

Social Circular Business Model Canvas

The Social Circular Business Model Canvas (SCBMC) proved to be a useful tool in guiding conversation and drawing out information and insights. Areas like Governance and Unique Advantage not captured by the traditional BMC proved to unearth information that would have otherwise been missed and in some cases proved to be of value to the organisation being interviewed as it opened up uncertain territory and areas that had not previously received much thought.

Figure 23: Part way through the Pelangi Nusantara's SCBMC with founder Bu Yanti

Similar to the traditional BMC the SCBMC aims to keep things simple and maintain an organisational perspective rather than develop a whole market one. Practically this means that the canvas does not try to fully analyse market dynamics including competition. However its inclusion of 'Unique Advantage' as a criterion not captured in the traditional BMC allows comparison with other models in key differentiating aspects.

The tool was generally well received by the organisations in the study and is a concise way of capturing how social circular enterprises generate and deliver value.

Reverse logistics

One of the objectives was to test the hypothesis that reverse logistics requires user-powered collection (i.e. the previous product user would deliver the item) or some other innovative low cost return mechanism for it to work. The examples of reverse logistics observed were generally for lower value distributed materials e.g. packaging waste. In a very limited number of cases, higher value items were collected.

The five themes identified did not corroborate the hypothesis in that very little collection is based on the previous product user delivering the item. Instead organisations find ways to 'price in' the added logistics costs into their product/service or avoid it by pushing it to their suppliers i.e. the risk of reverse logistics was mitigated but suppliers may implicitly charge for collection within contract prices.

Mechanisms dealing with very complex and high residual value resources (e.g. laptops) were not seen. This is partly as there may not be requisite skills to valorise these resources or they are retained within service contracts with the Original Equipment Manufacturer (OEM) e.g. medical imaging equipment.

The five return mechanisms were identified:

- **Collection as a service** (Bali Recycling, Waste4Change, REMBRE, Triciclos): generally used for mixed waste. All organisations work to some degree with clients to foster an understanding for the need to separate waste streams to lower their own costs and increase the purity and volumes that can be recycled. While these waste streams can vary widely in content, they are relatively continuous in supply and there are only a certain number of recyclable material grades. These generally have a liquid[29] market supporting investment into infrastructure to triage and process these materials. Beyond the service, triaged and processed materials are sold but without any addition of value to the materials.
    - The model can be operated on a free basis for items with significant residual value. For example UPASOL picking up a donated hospital bed[30] warranting a bespoke call-out for pick-up.
- **Product price includes collection** (Growbox/Mycotech, Jacinto & Lirio, UPASOL): Collection represents a significant activity of the business but differs to the *Collection as a service* model in that revenue is generated not

[29] One in which there is enough volume traded to ascertain a discernible market price

[30] In Europe, social enterprises like Emmaus operate this model

through collection but only through product sales. Generally the material has value added to it for example growing mushrooms and water hyacinth leather, rather than just being triaged to send to processors. This means that the value per mass (£/kg) is high enough to incorporate logistics costs as a small part of the overall cost structure.

- **Part of a contract** (Retalhar, Flor de Cabruêra, Rede Asta, ZEBU): typically as part of a valorisation service for single type end-of-life waste produced by the client e.g. uniforms, seat belts and banners. These are generally produced in a batch manner e.g. annually, rather than continuously. Since clients are often the producer of the waste in the first place, it is understood that the cost of waste disposal and reverse logistics are recouped within the overall service cost.

  As the material is relatively homogeneous within each batch, it justifies a level of design work to repurpose into higher value items e.g. bags. This added value also helps towards covering the reverse logistics costs. Where 'wastes' are donated, it does not present a prohibitive cost for the donor to drop-off since it is likely one-off and avoids waste disposal costs.

- **Push to supplier** (Bio Fair Trade, Ecotece, Good Food Community, Habi Footwear, Pelangi Nusantara, Rede Asta): these broker type organisations push the risk and cost of reverse logistics back to the supplier who are generally productive groups and artisans. These groups typically live close to the origin of the 'waste' (i.e. nutrient) and therefore can source it for minimal or low cost. This nutrient is then used to produce goods aggregated into a large batch and sent in bulk to the broker social enterprise. The broker then pays the supplier, taking a cut for the access to markets, training and support.

- **Push to user** or 'waste producer' (Flor de Cabruêra): not too prevalent a model in emerging markets. However, particularly in developed nations, users who have no further need for a product often drop off the item e.g. charity shops (social enterprise divisions of charities).

Conclusion

The study met its five main objectives:

- It showcased a wide variety of organisations from four different countries operating within a diverse set of sectors that all tackle social issues while generating value from the circular economy archetype.
- It identified social circular economy themes providing insight into how these organisations operate and how.
- The SCBMC tested during site visits required minimal change and proved to be robust in its ability to adapt and capture the models pursued by the variety of organisations showcased.
- Captured insights into how reverse logistics is handled with five distinct mechanisms identified.
- Identified applicability of social circular economy to the UK and recommend how to scale its implementation.

Interpretation:

Combining circular economy business models: this was an often observed model potentially highlighting synergy effects in some areas. Therefore organisations in the UK looking to transition into the circular economy may be best placed not to start with a particular CEBM but rather consider the value proposition they are trying to deliver and enabling activities that align with its core competencies, say a bicycle safety advocacy group offering to take away abandoned bicycles from the local council it partners with. Applying CEBMs to this may lead to running hands-on training programmes that let people learn repair and refurbishment skills in the workshop after which the upgraded bicycles could be sold (Product Life Extension) while unrecoverable metal scraps could be sold to an aggregator (Resource Recovery) and having empowered people to repair and refurbish their own bikes in the future.

Broker-enabler roles: many social issues stem from a lack of opportunity often reinforced by prejudices. This is in effect an underutilisation of social resource i.e. a person is seen as a problem to fix rather than an untapped resource. Identifying these people and what activities they could contribute to with the right support is a critical role. However, to be successful the majority of organisations needed highly capable and educated management to find and develop a market to sell outputs. UK organisations

should therefore develop these dual capabilities of supporting beneficiaries and stoking the market to play the matchmaker role between supply and demand.

Training provision: Since many of these organisations are small, there is a significant amount of duplication in basic training across them e.g. business finance fundamentals, business processes, computer literacy, quality assurance. There is clearly an opportunity for a more centralised approach to delivering this type of training e.g. an online repository of training videos that social circular enterprises could access.

Scaling impact: those looking to scale impact were observed to pursue three approaches. UK organisations with an established sustainable model and looking to scale should consider the same approaches:

1. Building a new marketplace, based on an online platform.
2. Automating manual operations to remove the organisation as a potential bottleneck to scaling.
3. Social franchising.

Cross-subsidy model: not all CEBMs have to be directly aligned to the core mission. If in delivering this mission there is a circular economy opportunity and the capacity to deliver, then it is possible to pursue this to generate profits and support the core mission. However, this was not a typical approach and caution is advised before undertaking this model. Firstly it may take away resources from core into non-core activities. Secondly without proper focus, cost control may be poor. Thirdly, the setup and running costs in the UK may be higher than in emerging markets, while global market pricing often dictates revenues for recycled material i.e. costs may outstrip sales.

Small capital operations: many organisations operated with very little fixed assets. This may be partly to do with the study design but also to do with the more human-scale and thus distributed nature of their operations. This suggests that there are low barriers to entry for UK organisations looking to transition. The majority of operations did not seem to have a minimum scale requirement meaning one person could in theory run the venture. This makes it very amenable for pilot testing with scale achieved by adding another human resource – useful for companies keen to use an ‘intrapreneur’ approach i.e. an in-house entrepreneur or pilot a new model with a social circular enterprise partner e.g. to valorise non-continuous waste streams like office furniture.

Ad-hoc volunteer support: Better internal business processes and access to long-term or continual flow of volunteers is likely an enabler for social circular enterprises to scale, moving from micro to small enterprises, and small to medium. There is therefore an opportunity for an online portal where this type of knowledge could be garnered and connections made. However, several organisations suffered from incomplete support or lack of continuity. Thus, ensuring completion, proper handover and discretising tasks will make roles more rewarding resulting in more committed volunteers and better outcomes from volunteer resources.

Emerging markets focus: some areas like waste collection are much better catered for in rich nations meaning there may be more limited prospects for organisations in the UK to participate in recycling. That said, there is still opportunity for organisations to participate in this loop of the circular economy. For example, schools could ask their students to bring in aluminium cans rather than recycling them at home – this could be aggregated and sent to a processor for close to £1,000 a bale. Alternatively, an urban farm delivering growing programmes could use its agricultural waste or local food waste as a growth medium to run a therapeutic mushroom growing programme for those with mental health issues, then sell the mushrooms for profit.

Reverse logistics: there were five mechanisms identified (see more detail above) that are directly applicable and could provide inspiration for UK organisations to develop their own reverse logistics to enable greater circularity.

Recommendations

Government

Recommendation 1

Government to support more research to quantify and evidence the potential benefit and make decision-makers aware of the positive impact the social circular economy can deliver. Considering the economic benefit of the circular economy is $4.5 trillion by 2030 (Accenture, 2015), there is likely at least that value, potentially much higher, in currently externalised costs that the social circular economy can mitigate or turn into value. This may be valorisation of waste (materials, under employment and underutilisation), or through allayed costs (environmental clean-up, welfare and healthcare). Quantifying these savings provides an attractive prospect for all public bodies to support the transition.

Recommendation 2

Government to take an active role in encouraging and supporting social circular enterprises. These organisations mitigate state environmental management costs and the burden of delivering public services. Providing there is sufficient evidence of positive impact being delivered (see Recommendation 1), supporting these organisations and helping to create enabling conditions would be a win-win scenario.

Increased circularity also supports national interests as it decreases reliance on raw materials from other nations. With Brexit and a need to strike various international trade deals, a more resource efficient nation helps negotiation stances and outlook.

Thus government should support social circular enterprises scale i.e. professionalise, evidence their impact and collaborate with each other. An example would be to leverage current resources like the Knowledge Transfer Network to help engender collaboration or use the Technology Catapult to support a network effect e.g. develop enabling information technology platforms that social circular enterprises can plug into to support real-time monitoring and enable insights from aggregated data.

Recommendation 3

Government to encourage the development of an online platform where social circular enterprises can network, exchange knowledge, learn from case studies and training materials, be sign-posted to other relevant resources and potentially get supply contracts or funding.

Recommendation 4

Government to recognise this report's definition of social circular economy and provide clarity of how it is a synthesis of circular economy and social enterprise concepts that delivers full system benefits, not just partial ones.

Recommendation 5

Government to improve consumer awareness of social circular economy, including national campaigns. Consumers understanding what 'good' looks like is key to stoke demand toward circular products and services that also deliver social benefits.

Recommendation 6

Government to procure products and services from social circular enterprises, including office equipment, furnishings, carpet and electrical equipment.

Specifically, government should preferentially sign-post, procure from or fund social circular enterprises. This aligns with the Social Value Act 2012 that requires public service commissioners to consider how to also secure wider social, economic and environmental benefits. However it often receives only a token thought. Specific targets, increased flexibility or penalties for lack of compliance would favour organisations in line with the spirit of the Act i.e. social circular enterprises.

Recommendation 7

Government to pursue enabling legislation such as a tax break for social circular enterprises to encourage their growth. The 5p charge on carrier bags is an example where the proceeds go to support good causes, typically social circular enterprises. However it is only tangential to the aim of building a robust social circular economy. The UK has the opportunity to take the lead in this area and should freely borrow from other jurisdictions; circular economy focused examples include:

- France forces large supermarkets to donate unsold food or have it turned into animal feed, compost or energy.
- France has a law that aims to prevent planned product obsolescence to ensure longer life products.
- Italy introduced a food waste bill to give tax breaks on food to worthy causes.

- Japan requires manufacturers to run disassembly plants with material recovery legally mandated.
- Sweden requires retailers selling electronic goods to accept the same quantity for reuse or recycling.
- Sweden gives tax breaks on repairs through reduced VAT on bicycles, clothes and shoes, or a reduction in income tax for labour costs on white goods repair.

The last one is of particular interest as it aligns well to the human-centred approach of the social circular economy, making repair more cost effective for consumers. This could help repair firms like Timpson's grow - it has given hundreds of ex-offenders employment, comprising an eighth of its employees.

Note, new policy should not be considered in isolation and a systemic view should be taken. For example, the last Swedish example could result in OEMs increasing spare parts prices and reducing build quality without supporting legislation preventing it.

Recommendation 8

Government should work with schools, universities, training providers and other stakeholders to create an educational programme to ensure circular economy and social enterprise concepts are embedded at a young age in order to help foster advocates and practitioners for a full transition.

Current education helps develop knowledge in siloes, for example climate change or poverty, but does not provide an understanding of the interconnections and complexities that arise therein. Further, it does not present specific solution strategies e.g. circular economy and social enterprise.

Resources should be made available to schools and universities so that teaching these concepts is not only made easy for educators but also encouraged. This is best done through ensuring specific concepts are part of curricula. Schools focus on aligning teaching efforts to maximise exam results meaning extra-curricular topics are unlikely to be given attention and reinforced with site visits e.g. to local waste management sites. The Ellen MacArthur Foundation develops circular economy education materials that can be used to support these efforts.

Communities

Recommendation 9

Circular economy and social enterprise proponents should network with each other to foster collaboration, new ideas and innovation in product and service delivery.

Recommendation 10

Community champions should develop local communication and assets so that consumers can more easily access the social circular enterprises nearby and support their success e.g. by buying from or volunteering for them. Community action as the bottom-up grass roots activity is key to complement any top-down policy driven actions.

Assets to be developed could include a directory of local organisations and/or an open source map that would sign-post people to social circular enterprises. Local activities like repair cafes can be run to mitigate items going to landfill while also providing an opportunity for disadvantaged people to save money buying replacement products.

Open Source Circular Economy Days (OSCEdays) and Social Enterprise UK websites are useful resources.

Circular social enterprises

Recommendation 11

Currently operating social circular enterprises strive to become more relevant through scale and professionalisation by forming scaled networks to share best practices, be a common access point for being sign-posted to, present a more significant and attractive proposition for customers to deal with, access funding not available to one organisation alone and/or enable a financial stake to be taken in the network. The Furniture Reuse Network[31] is an example of such a network.

Recommendation 12

Start-ups should be encouraged to utilise the framework to support the transition to a social circular economy. Dissemination of the concepts at entrepreneurial networking events would help inspire entrepreneurs to pursue it. The availability of dedicated funds would facilitate organisations to get through investment phase and put in place the infrastructure for scale.

[31] Only UK-wide body concerned with helping re-use and recycling social enterprises and charities to alleviate material poverty of the most disadvantaged members of society.

Appendix

Learn more

Case studies on featured organisations

Further information on the organisations featured in this report can be found on www.socialcirculareconomy.com/showcase.

Organisation	City	Country	Website URL
Azzura Solar	Jakarta Selatan	Indonesia	http://www.azzura-solar.com/
Bali Recycling	Bali	Indonesia	http://www.balirecycling.com/about-us.html
Beeconomics	Olinda	Brazil	http://beeconomics.org/en/empresa-social/
Bio Fair Trade	Recife	Brazil	http://www.biofairtrade.com.br/
BV Rio	Rio de Janeiro	Brazil	http://www.bvrio.org/
Corong Galeri Lokals	Coron	Philippines	http://corongaleri.com.ph
ECHOstore	Manila	Philippines	http://www.echosi.org.ph/contact.asp
Eco Farm Asia	Antipolo City	Philippines	http://www.ecofarmasia.com
Ecotece	Sao Paolo	Brazil	http://ecotece.org.br/
Flor de Cabruêra	Sao Paolo	Brazil	http://www.flordeCabruêra.com.br/
GK Enchanted Farm	Manila	Philippines	http://www.gk1world.com/visit-enchanted-farm
GOMA	Rio de Janeiro	Brazil	http://goma.org.br/
Good Food Community	Quezon City	Philippines	http://www.goodfoodcommunity.com
Growbox	Bandung	Indonesia	http://halogrowbox.com/en/contact
Habi Footwear	Quezon City	Philippines	www.habifootwear.com
Jacinto & Lirio	Quezon City	Philippines	http://jacintoandlirioph.weebly.com
Kawil Tours	Culion	Philippines	http://www.kawiltours.com
Liter of Light	Makati City	Philippines	http://aliteroflight.org
MateriaBrasil	Rio de Janeiro	Brazil	http://materiabrasil.com.br/
Morada da Floresta	Sao Paolo	Brazil	http://www.moradadafloresta.org.br/
Mycotech	Bandung	Indonesia	http://www.mycote.ch/
New Hope Ecotech	Sao Paolo	Brazil	http://www.nhecotech.com/
Pelangi Nusantara	Malang	Indonesia	http://www.pelanginusantara.org/
Rede Asta	Rio de Janeiro	Brazil	www.redeasta.com.br/
Rembre	Las condes	Chile	http://www.rembre.cl/
Retalhar	Sao Paolo	Brazil	www.retalhar.com.br/
Trama	Rio de Janeiro	Brazil	http://trama.net.br/
TriCiclos	Santiago/Sao Paulo	Chile/Brazil	www.triciclos.cl
Upasol	La Serena, Vicuna	Chile	http://www.upasol.cl/
Waste4change	Bekasi	Indonesia	www.waste4change.com
ZEBU	Rio de Janeiro	Brazil	http://zebumidias.com.br/

About the circular economy

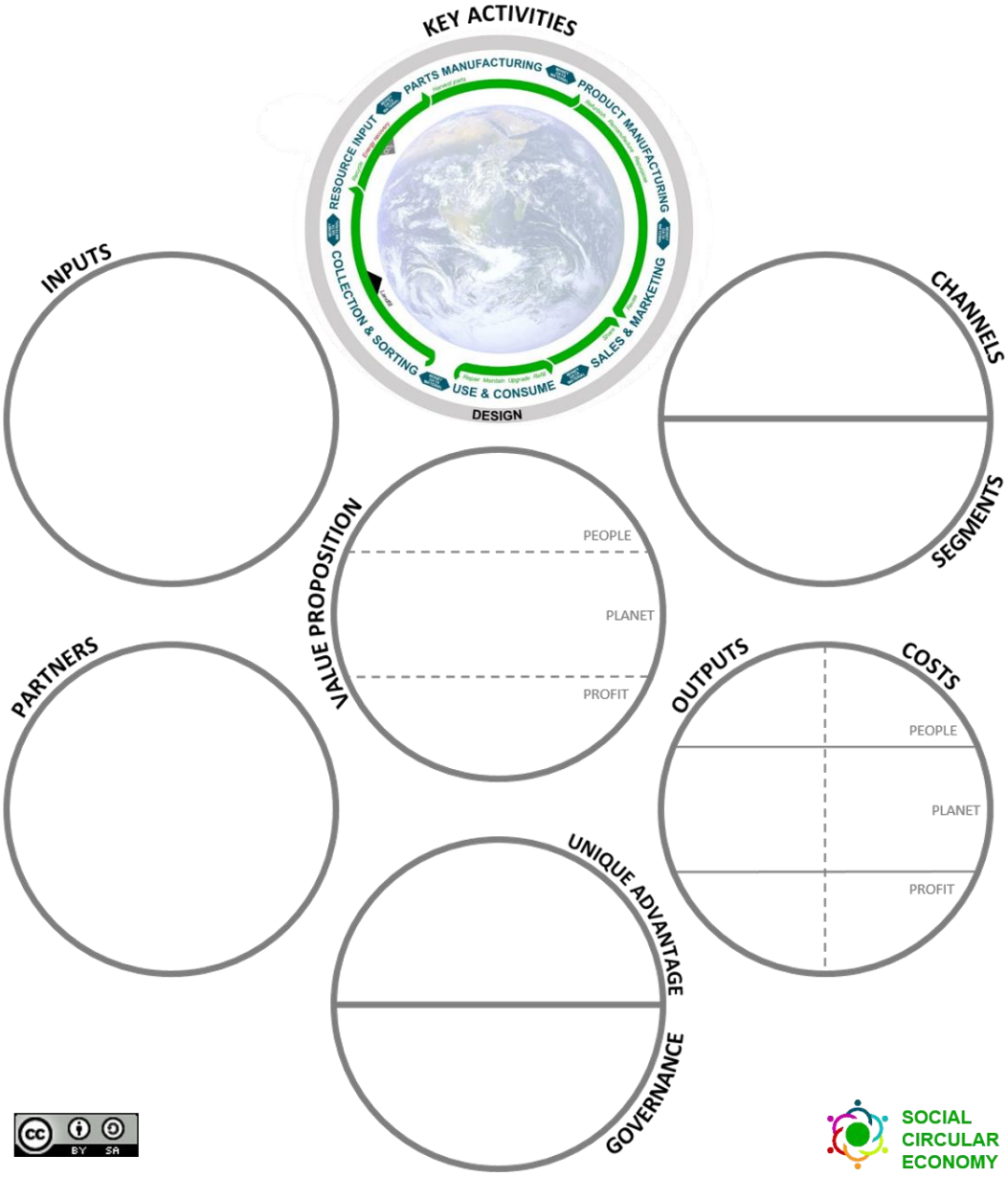
The following resources provide further information about the circular economy:

- Ellen MacArthur Foundation: Circular economy
- Waste and Resources Action Programme (WRAP): Circular economy
- European Commission: Circular Economy Strategy
- Zero Waste Scotland: Circular economy
- Friends of the Earth: Circular economy
- Circular economy portal: Circular economy
- Circular Economy Toolkit: Circular economy

Social Circular Business Model Canvas

Title:

Date / version:



SOCIAL CIRCULAR ECONOMY

Circular Economy Business Models (CEBMs): detailed

1. **Dematerialisation:** reducing the amount of resource required to create products:
   - **Digitisation:** replacing physical products with digital versions e.g. DVDs to online movies.
   - **On-demand production (made to order):** making things only when an order has been made, using resources only when needed and avoiding waste from over supply.
   - **Move to reusable products:** Moving from disposable to reusable products e.g. nappies.
2. **Circular inputs:** ensuring that the inputs to the production process are circular, namely renewable (e.g. solar power), fully biodegradable (e.g. untreated wood), sustainable (e.g. properly sourced palm oil) and/or fully recyclable (e.g. pure high density polyethylene).
3. **Product life extension:** extending the life of products through:
   - **Design for durability:** products are designed to be durable and last a long time.
   - **Design for modularity:** components can be replaced rather than the whole in case of failure or updates.
   - **Maintenance and repair:** maintaining and repairing a product to allow it to be used longer.
   - **Reuse:** redistribution and reuse of a product without any repairs or upgrades.
   - **Recondition**: return of a used product to a satisfactory working condition by rebuilding or repairing major components close to failure, potentially pre-emptively.
   - **Refurbish:** aesthetic improvement, often as-new, with limited functionality improvements.
   - **Remanufacture:** return a used product to as-new or better with a warranty to match (typically done at component level).
   - **Repurpose:** using a product, its components or materials in a role that they were not originally designed for.
   - **Parts harvesting:** recovering components of an end-of-life item prior to disposal/recycling.
4. **Resource recovery:**
   - **Recycling:** action of processing a used product, component or material for use in a future product component or material.
   - **Bio-chemical extraction:** recovering valuable bio-chemicals from biological waste streams
   - **Anaerobic digestion:** biodegrading of biological materials without air, producing methane gas as a renewable fuel.
   - **Compost:** biological materials biodegraded by microorganisms to produce compost.
5. **Product as a service (including Sharing Economy[32]):**
   - **Leasing:** access to a product / service, and not selling ownership.
   - **Performance based (Pay for success):** typically selling units of use e.g. miles on a tyre, or washes in a washing machine
   - **Sharing resources:** shared access of assets amongst users for a fee. Enables higher utilisation of assets while users get the performance they want without ownership.
   - **Peer to peer lending:** lending of products and services on a peer to peer basis with no financial transaction.

About social enterprise

The following resources provide further information about social enterprise:

- Social Circular Economy: Social Enterprise
- European Commission: Social Enterprises
- Social Enterprise UK: FAQs
- Social Enterprise Alliance: Social Enterprise
- British Council: Social Enterprise
- The voluntary code of practice ('The Code') for social enterprises in Scotland
- Grameen Creative Lab: The Social Business Concept & 7 principles of Social Business
- BC Centre for Enterprise: What is social enterprise?
- Social Enterprise Mark: Eligibility Mark
- Yunus Centre: Social Business

[32] Sharing economy or collaborative consumption is an ecosystem based on sharing of physical, human and intellectual resources. Examples include Airbnb (accommodation) and Uber (transport).

Measuring social impact

Social impact measurement is the evaluation of the amount of change an organisation makes on social issues. Measurement allows organisations to demonstrate the impact they make to their stakeholders and shows that the activity they undertake is making a difference. It is also helpful in identifying areas for improvement.

Social impact measurement is notoriously hard to do well; it is often much easier to measure *outputs*, the result of an activity, than *outcomes*, indicators of change. An example of the difference between the two might be ***20 computing lessons delivered at a school*** (an output) versus ***half the children improved computer literacy scores by 50% within a year*** (an outcome). The output *may* lead to a desired outcome but it is far from guaranteed – in this example the lesson content may not be appropriate, teachers may not have had appropriate training on the curriculum to teach it well and/or not enough lesson time could have been allocated for any noticeable change. All of these factors would prevent the desired outcome from being achieved, despite the seemingly appropriate output being successfully delivered. Outputs are helpful intermediate targets that support an outcome being delivered but in themselves not a good indicator of delivering change.

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Disclaimer

This report has been produced by Social Circular Economy who takes responsibility for the report's contents and conclusions. While the project participants consulted and acknowledged on the following pages have provided significant input to the development of this report, their participation does not necessarily imply endorsement of the report's contents or conclusions.

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