The Circular Economy Internet

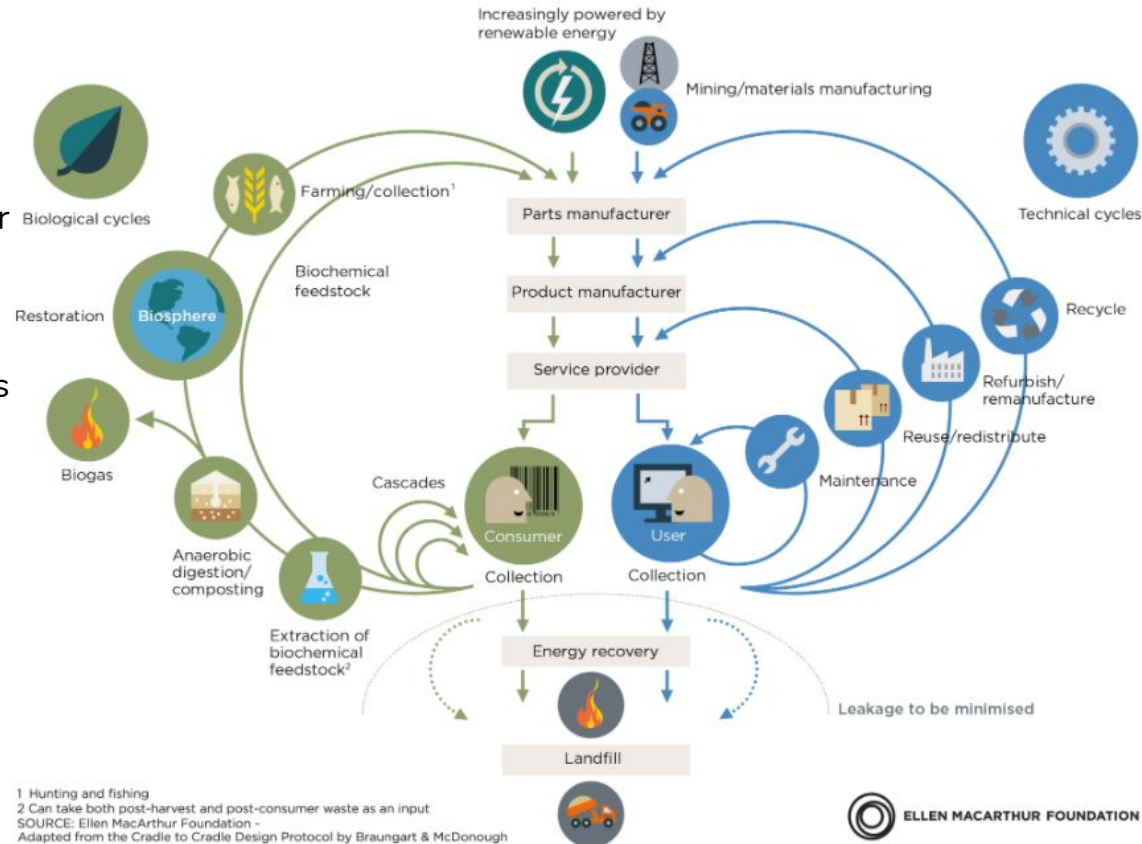One of the potentially most impactful activities towards the Circular Economy

The Circular Economy in one slide

The Circular Economy System Diagram, also known as the 'Butterfly Diagram', represents flows of products and materials in the Circular Economy.

The diagram starts from the current Linear Economy, depicted as the central, downwards flow from materials extraction and manufacturing at the top to incineration and landfill at the bottom.

In the Circular Economy, resources are used, but not used up. By applying suitable strategies to products, components and materials during use and after the end of a lifecycle, resources are kept in the system.

Increasingly powered by renewable energy

Mining/materials manufacturing

Biological cycles

Technical cycles

Farming/collection[1]

Parts manufacturer

Restoration

Biosphere

Biochemical feedstock

Product manufacturer

Recycle

Service provider

Refurbish/remanufacture

Biogas

Cascades

Reuse/redistribute

Maintenance

Anaerobic digestion/composting

Consumer

User

Collection

Collection

Extraction of biochemical feedstock[2]

Energy recovery

Leakage to be minimised

Landfill

1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
SOURCE: Ellen MacArthur Foundation -
Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

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What we will accomplish

Today the linear economy business models are supported by software solutions like ERP-systems, supply chain management solutions, production management solutions, etc.

We will build the Circular Economy Internet as an open software platform that becomes the digital backbone of the circular economy, and will exponentially accelerate the digitisation of the Circular Economy.

- A tool box to support circular economy business models
- Focus on ecosystem many-to-many interoperability as
  - The circular economy is a value chain challenge not an individual business challenge
  - Citizens, businesses, and governments are part of several value chains. They would face a digital nightmare, if they had to integrate one-to-one,
- Let a thousand flowers bloom - An open platform with ready made tools allows innovators around the globe to realise value adding interoperable applications on top, and industries and regions to extend according to their specific need
- The Circular Economy Internet should have a sustainable business model and be governed as a global public good
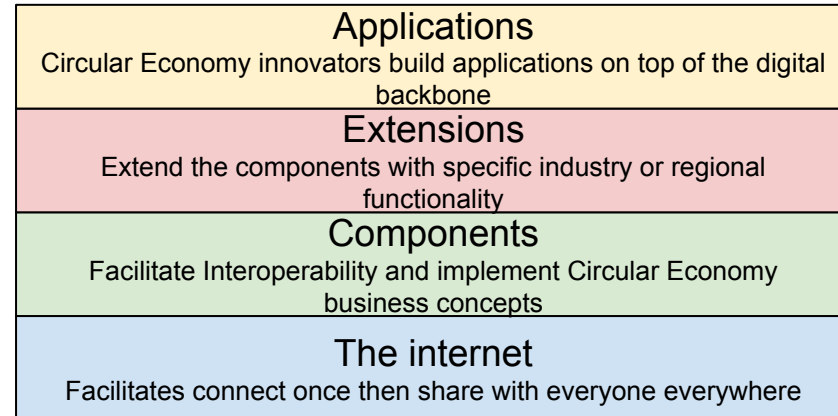
What is the Circular Economy Internet?

The Circular Economy Internet (CEI) **builds upon the Internet** and consists of **generic components** that either facilitate global interoperability or generic circular economy concepts.

Industries, regions, and others create extensions to the components with **specific industry or regional functionality**.

The digital circular economy innovators **develop individual applications** on top of the common components and extensions, thereby making digital circular economy applications immediately available globally.

Applications
Circular Economy innovators build applications on top of the digital backbone
Extensions
Extend the components with specific industry or regional functionality
Components
Facilitate Interoperability and implement Circular Economy business concepts
The internet
Facilitates connect once then share with everyone everywhere

Applications - Circular Economy innovators build applications on top of the digital backbone

Mobile app.for predicting and resolving obligations for fashion sold in NYC	Interface for trading obligations, proofs and rewards for foresting in Sweden	IoT capturing logistic industry's proofs during a container transport	...	A car manufacture's initiative to create a closed-loop upcycling of it's cars

Extensions - Extend the components with specific industry or regional functionality

Predicting and resolving obligations and proofs within the fashion industry	EU specific upcycling extensions	Maritime sectors generic ship-recycling module	...	The logistic industry's requirements for proofs

Components - Facilitate Interoperability and implement Circular Economy business concepts

Proof provider - Proofing resources utilized or waste generated has been recycled, refactored, etc,,	Part tracking - Common engine for tracking parts in a product	Upcycling - How technical parts retain their high quality in closed-loop industrial cycle	Exterior packaging - Aggregated DB with information on how packaging can be reused	Product of Service - Engine supporting buying product functionality as a service
Living system effect - Aggregated DB of chemical substances' and technical mix's effect on living systems	Predicting and resolving obligations and proofs	Hazardous packing lot - Aggregated.DB of location of hazardous material waiting until they can be detaoxified	Repair facilitator - Engine that enables matching need for repair and repair shops	Material substitution - Aggregated DB of materials substitution
Circular Economy Identity - A self managed digital identity for business,citizen and government	Financial flow - The flow of money as well as trading of obligations, proofs, rewards, etc,	Value Chain Flow- Enables distribution of cost/rewards for environmental impacts throughout the value chain	...	...

The internet - Facilitates connect once then share with everyone everywhere

The team

	Henrik Hvid Jensen - Head of Circular Economy Internet. Experienced innovator, architect and thought leader on digitisation of global trade.		Wolfgang Lehmacher - A global thought leader in the world of supply chain and former head of supply chain and transport industries for the world economic forum.
	Attila J. Turos - Experienced leader in Public-Private Partnerships. Former project lead World Economic Forum		Godha Bapuji - Social Entrepreneur. Founder Women in Crisis. Former Assistant Director - Information Security Consulting at EY
	Veronica de la Cerda - CEO TriCiclos		Agustín Correa - Mechanical Industrial Civil Engineer working on engineering-design, circular economy and entrepreneurship projects.
	Ann Dao - Experience in building multiple businesses from the ground up within the manufacturing, healthcare, hospitality and retail industries in unpredictable business environments.		Jon Petur Jonsson - Experienced project management, IT, digital transformations.