

INTRODUZIONE ALL'ECONOMIA CIRCOLARE

...e tutto il resto...

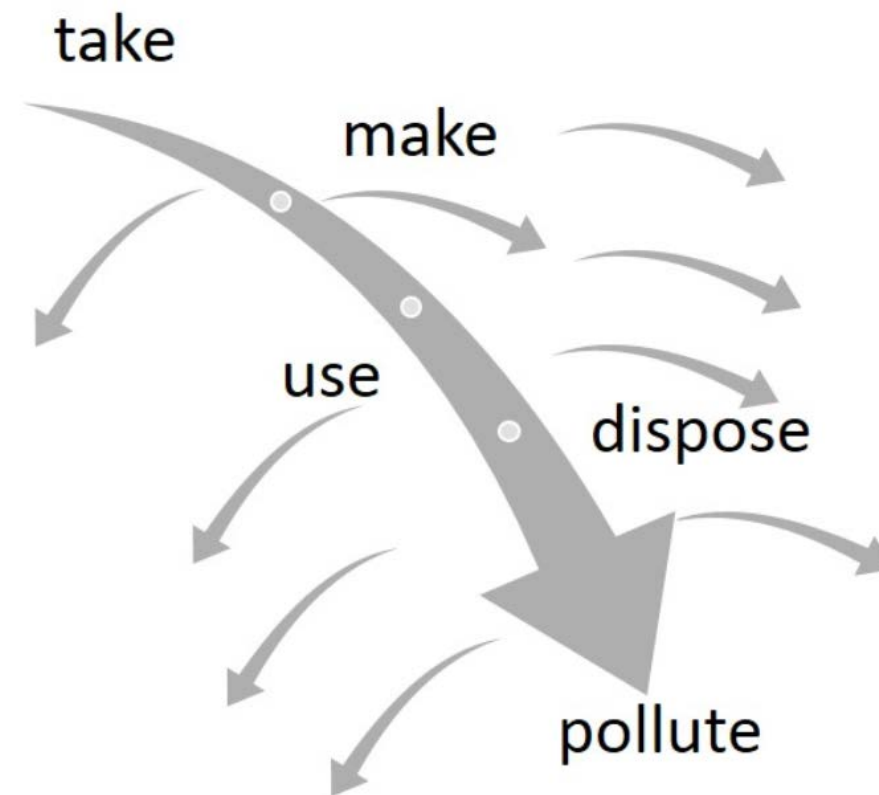
Ilaria Schiavi

Environment Park

ECONOMIA CIRCOLARE VUOL DIRE...

...il contrario di economia lineare.

**«Economia Circolare» =
> 100 diverse definizioni!!!!**



ALCUNI NOTEVOLI ESEMPI

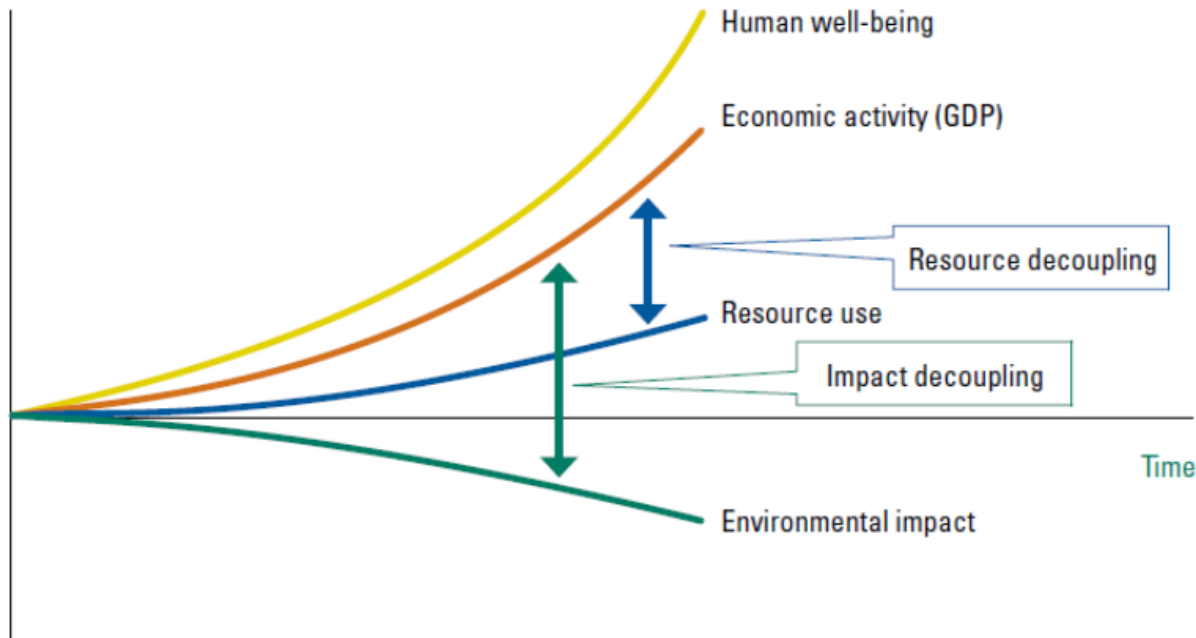
<p>Ellen MacArthur Foundation (2013a; 2013b; 2015a)</p>	<p>Circular economy is “an industrial system that is restorative or regenerative by intention and design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models”. The overall objective is to “enable effective flows of materials, energy, labour and information so that natural and social capital can be rebuilt”.</p>
<p>European Commission (2015a)</p>	<p>The circular economy is an economy “where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised”. The transition to a more circular economy would make “an essential contribution to the EU's efforts to develop a sustainable, low-carbon, resource-efficient and competitive economy”.</p>

CONCETTI COMUNI, PICCOLE DIFFERENZE & CRITICHE

- ❖ Fare lo stesso (o di più) ma con meno
- ❖ Non esiste «rifiuto»
- ❖ Solo materiali OPPURE materiali, acqua, energia
- ❖ Product centered OPPURE restoration of the ecosystem
- ❖ ...e gli aspetti sociali???
- ❖ ...e l'impatto sull'ecosistema??

FARE LO STESSO (O DI PIÙ) MA CON MENO: LA TEORIA

Figure 1. Two aspects of 'decoupling'



Resource decoupling means reducing the rate of use of resources per unit of economic activity. **Impact decoupling** means maintaining economic output while reducing the negative environmental impact of any economic activities that are undertaken. **Relative decoupling** of resources or impacts means that the growth rate of the resources used or environmental impacts is lower than the economic growth rate, so that resource productivity is rising. Absolute reductions of resource use are a consequence of decoupling when the growth rate of resource productivity exceeds the growth rate of the economy.

FARE LO STESSO (O DI PIÙ) MA CON MENO: ESEMPI

- ❖ Prodotti rigenerabili – riparabili per vita utile estesa

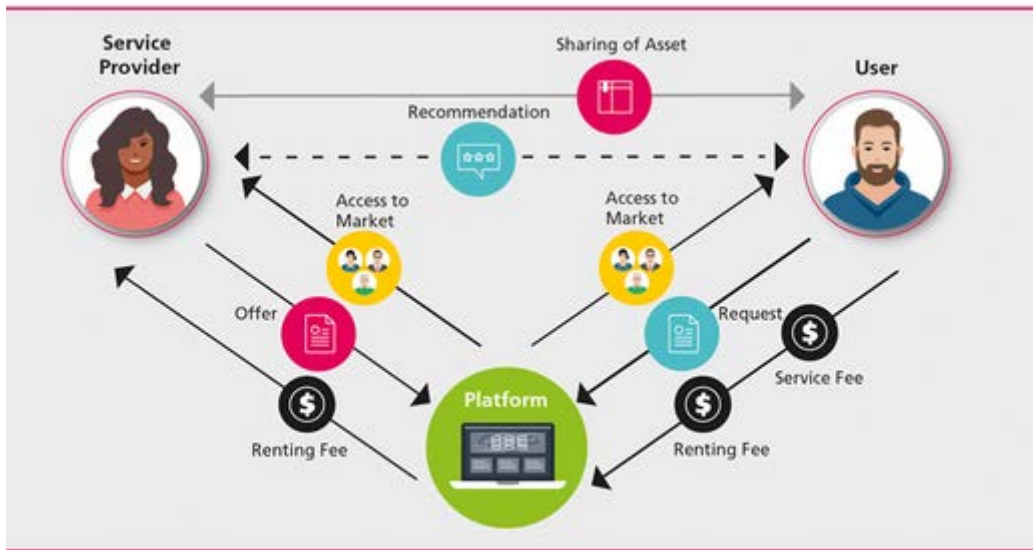


Figure 1: The Sharing Economy business model; Source: Business Model Toolbox

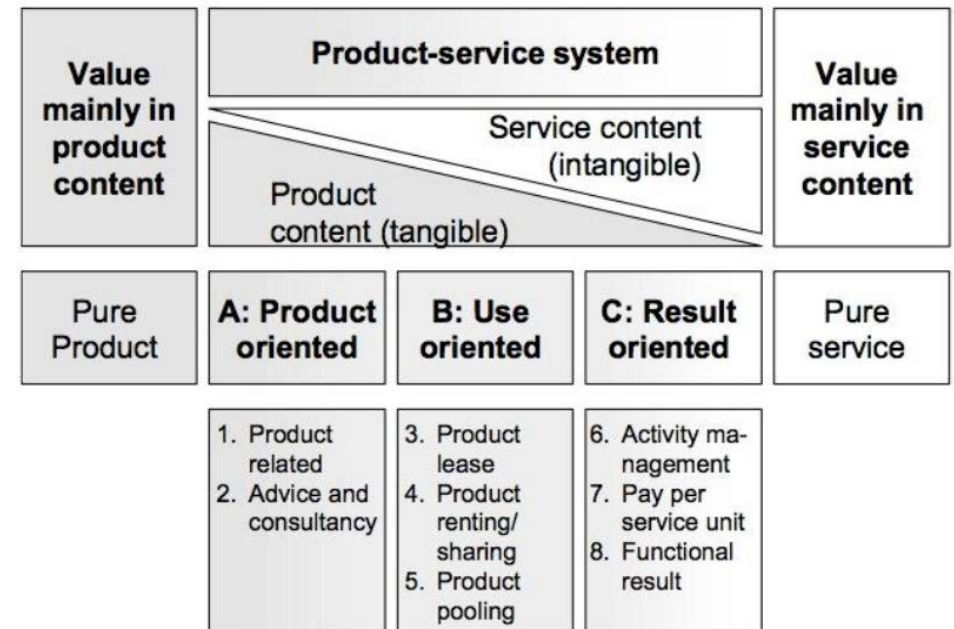
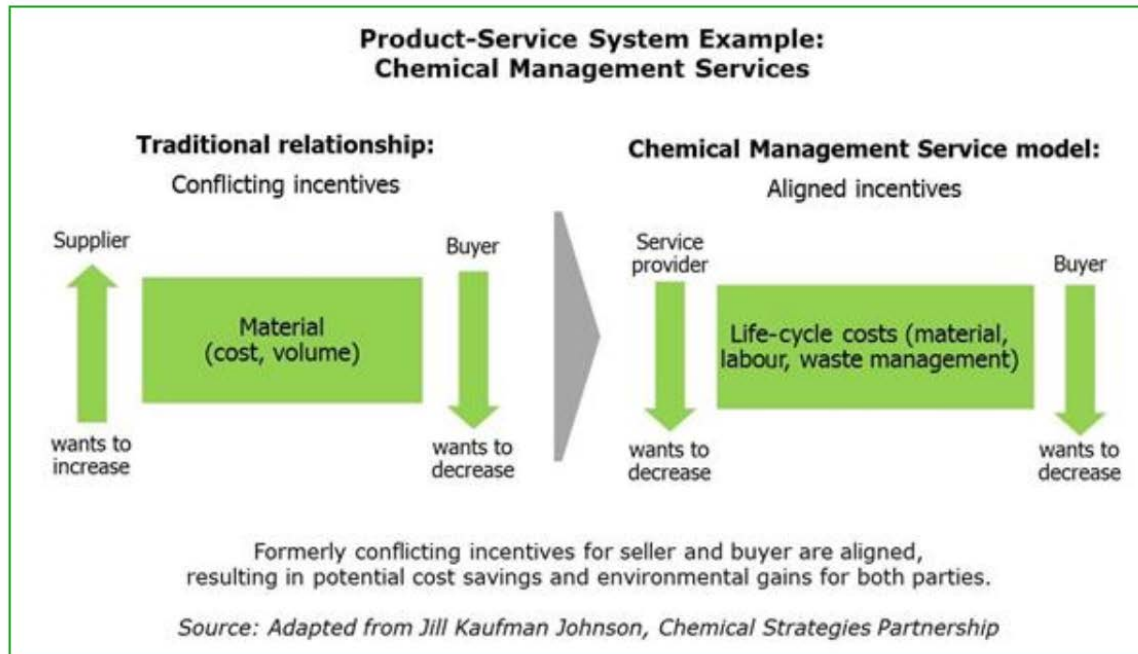
- ❖ Piattaforme di sharing

FARE LO STESSO (O DI PIÙ) MA CON MENO: ESEMPI

❖ Dal prodotto al servizio
(UNEP 2015)



Figure 1: An example of product-service combinations, with an increasing shift away from product ownership towards the provision of services to fulfil mobility needs (Turley, 2013)



NON ESISTE «RIFIUTO»: PRATICHE CONSOLIDATE



Steel raw materials



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Global Steel Scrap Wrap



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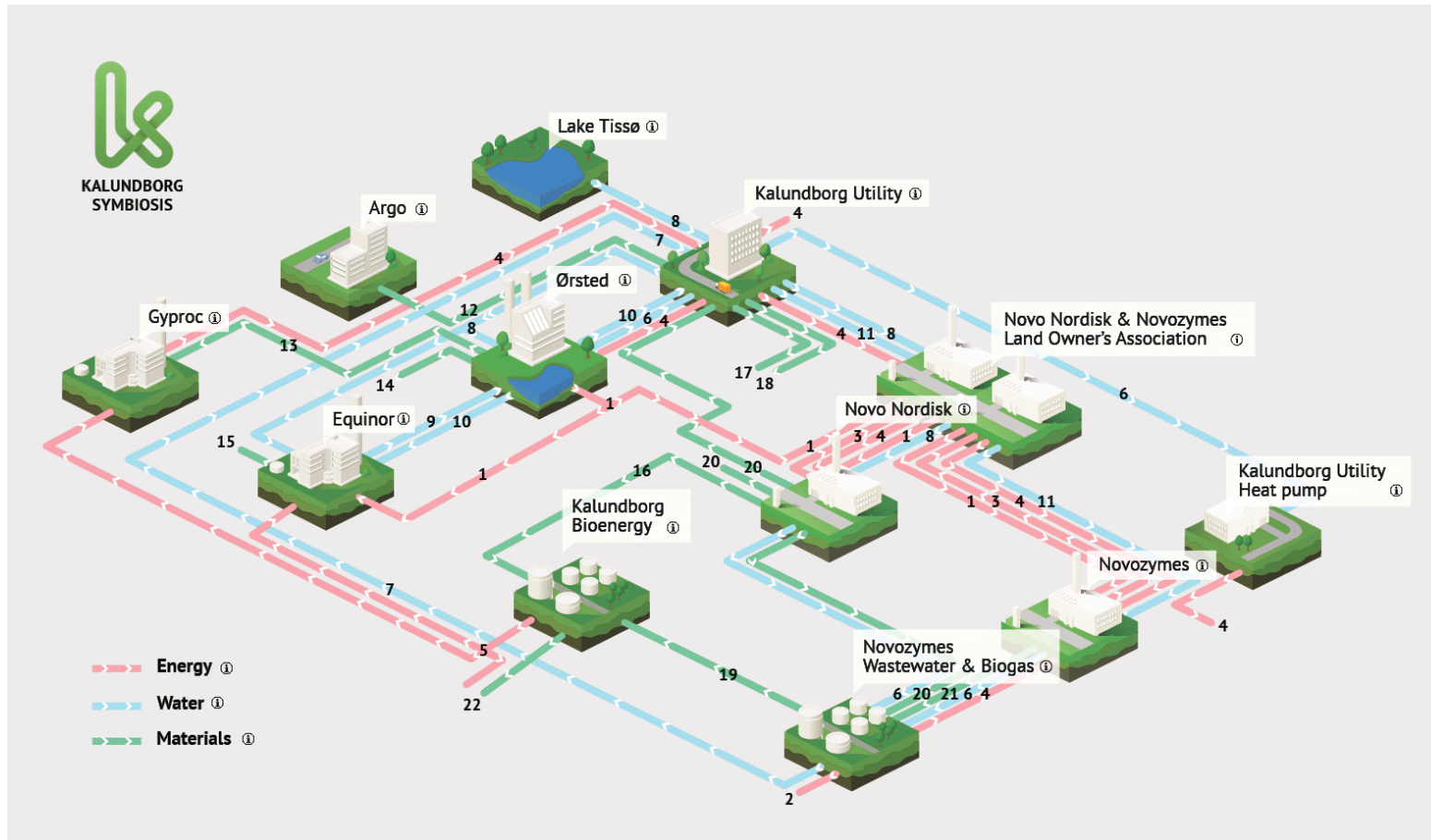
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🕒 Dec 6, 2019 @ 18:25

NON ESISTE «RIFIUTO»: ALTRE DECLINAZIONI

- ❖ Ridisegnare prodotti perché siano facilmente smontabili /separabili per sostituzione di parti
- ❖ Ridisegnare prodotti o pratiche perché generino meno rifiuto
- ❖ E' materiale secondario che qualcun altro può usare come materiale di input

NB: significato normativo del «rifiuto» e dell' «end of waste»

SOLO MATERIALI O INCLUDIAMO ENERGIA E ACQUA ...?



Industrial symbiosis: Industrial symbiosis is the process by which wastes or by-products of an industry or industrial process become the raw materials for another. Application of this concept allows materials to be used in a more sustainable way and contributes to the creation of a circular economy.

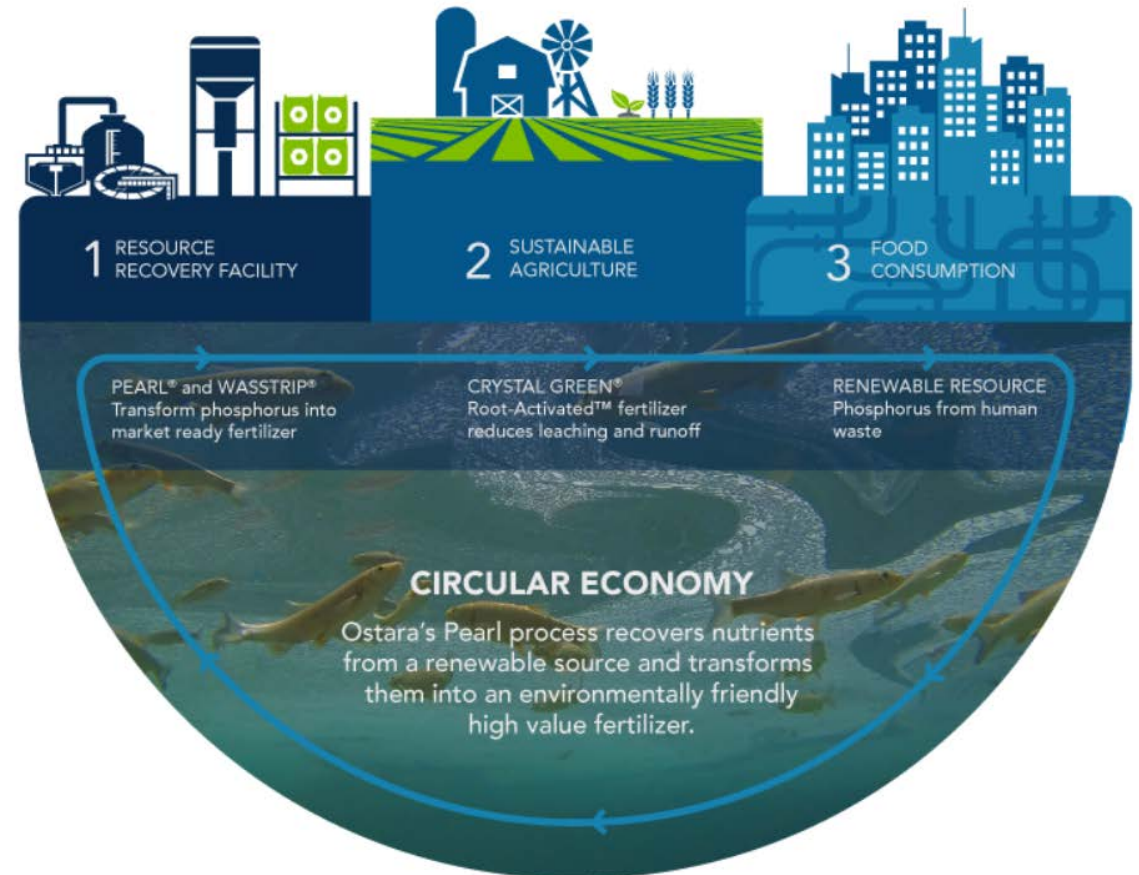
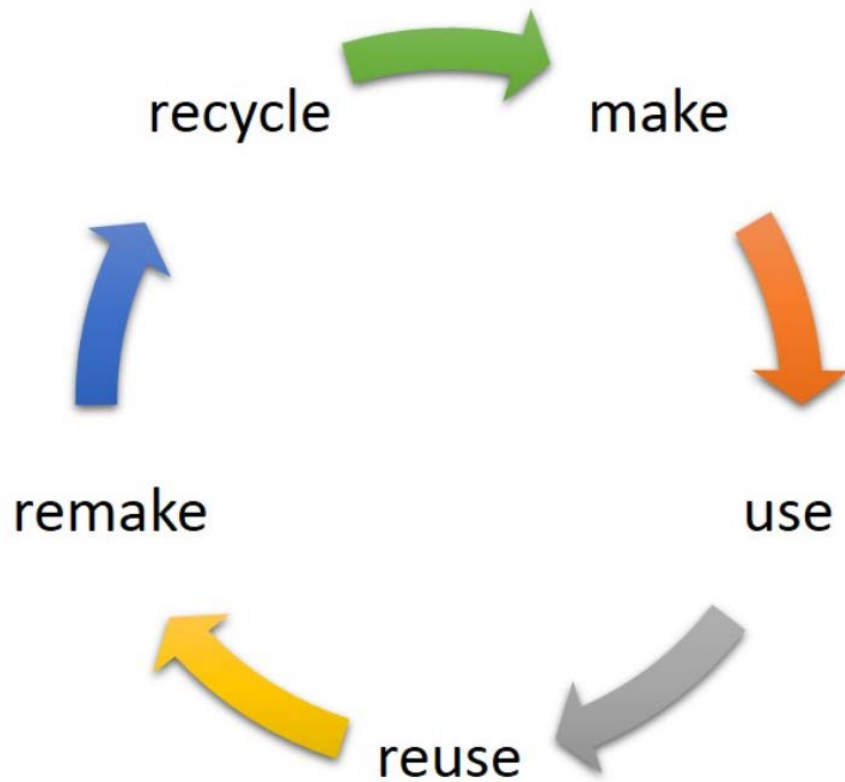
-> brokerage platforms (UK)

OR

-> site specific (DK)

<http://www.symbiosis.dk/en/>

PRODUCT CENTERED VS RESTORATION OF THE ECOSYSTEM



ASPETTI SOCIALI

Responsible Research & Innovation (RRI) - > <https://www.rri-tools.eu/>



What does RRI mean?

Diversity and Inclusion

Define your products and services including a wide range of stakeholders at the early stages of your research

Anticipation and Reflection

Provide better products anticipating clients' needs and concerns, and reflecting on the impacts created by your strategy

Openness and Transparency

Establish open relations with consumers: favouring transparency in your processes of research and innovation can benefit your business

Responsiveness and Adaptive Change

Adapt your organisation's structure and systems attending to changing circumstances, insights and stakeholder values

**FOR BUSINESS
& INDUSTRY**

IMPATTO SULL'ECOSISTEMA

- ❖ Life Cycle Analysis & Life Cycle Cost
- ❖ Carbon Footprint – Water Footprint
- ❖ Environmental Labelling
- ❖ Efficienza energetica – idrica
- ❖ Utilizzo di materiali complementari /servizi a basso impatto ambientale

E VOI CHE COSA POTETE FARE????

- ❖ SUPPORTARE LE AZIENDE AD IDENTIFICARE LA LORO «CIRCULARITA'»
- ❖ ESPLORARE NUOVI BUSINESS MODELS e COSTRUIRE IL BUSINESS CASE
- ❖ SUPPORTARE & CAPITALIZZARE L'INNOVAZIONE di PROCESSO o di PRODOTTO

Assessment di Circolarità: indagare il livello di circolarità di un'azienda lungo la catena del valore

Catena del valore	Input del processo produttivo	Processo produttivo/ di trasformazione	Commercializzazione e post-utilizzo	Organizzazione interna
Aree di valutazione	 Risorse Utilizzo di energia rinnovabile e nutrienti biologici o interamente riciclabili	 Design Sviluppo prodotti facilmente scomponibili post utilizzo (design for disassembly)	 Prodotto Vendita sul mercato di prodotti riciclabili, rigenerabili e con vita utile estesa	 Infrastrutture Adozione di ambienti di lavoro sostenibili e mezzi di trasporto a basso impatto
	 Procurement Ricorso a fornitori che operano in modo circular e accesso a beni tramite forme alternative alla vendita	 Riciclo Recupero/ reimmissione nel ciclo produttivo di risorse materiali ed energia da scarti di lavorazione/ rifiuti	 Distribuzione Erogazione di beni e servizi alla clientela tramite piattaforme di sharing o modelli product as a service	 HR Formazione delle risorse umane su tematiche della CE e incentivi alla condivisione/ collaborazione
	 Equipment Impiego di attrezzature/ macchinari energy safe, a basso impatto ambientale e consumi ridotti di input	 Estensione vita Riparazione/ rigenerazione, rivendita e remanufacturing di prodotti intermedi e finiti	 Logistica Ricorso a reverse logistic per futuro riciclo/ rigenerazione/ remanufacturing e re-immissione su mercato	 Management Prime linee aggiornate sulle tematiche CE e processi decisionali in linea con i principi CE

RIFERIMENTI

Ellen MacArthur Foundation (2013a), "Towards the Circular Economy. Economic and Business Rationale for an Accelerated Transition" (<https://tinyurl.com/hzfrxvb>).

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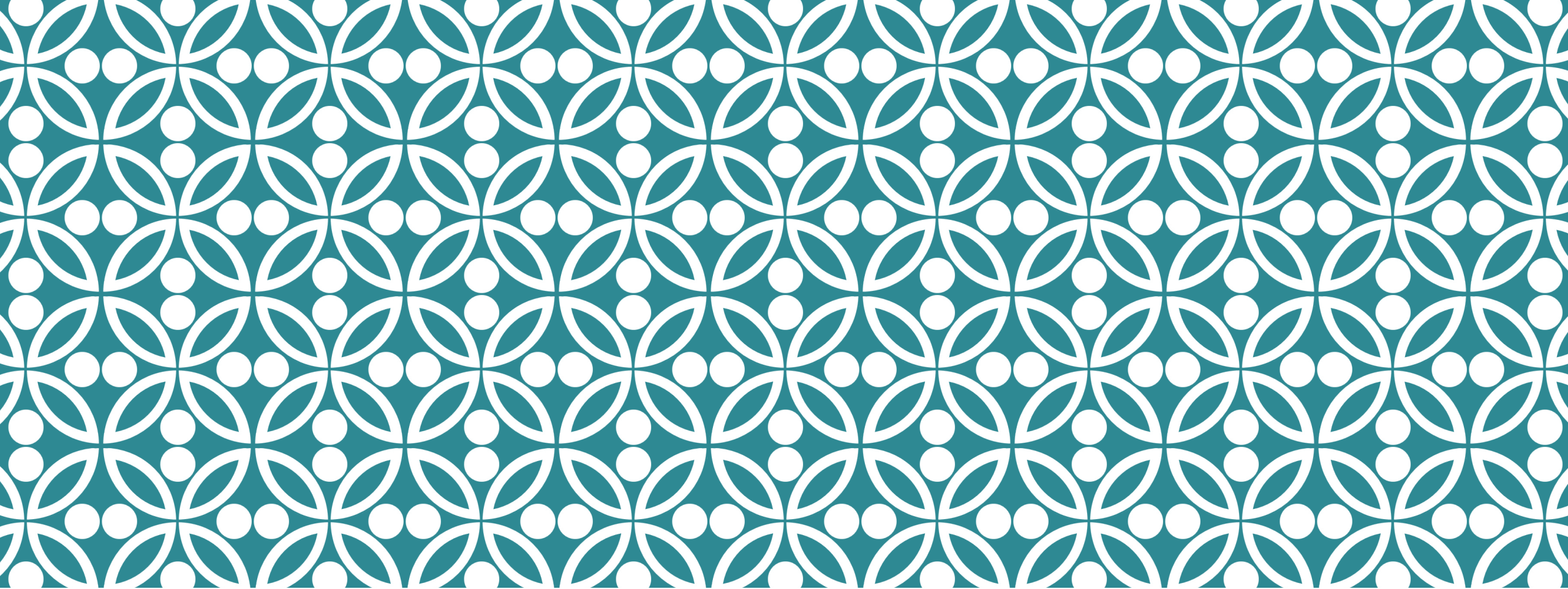
Ellen MacArthur Foundation (2015a), "Towards a Circular Economy: Business Rationale for an Accelerated Transition" (<https://tinyurl.com/zt8fhxw>).

European Commission (2015a), "Closing the loop - An EU action plan for the Circular Economy", Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2015) 614 final.

UNEP (2011) Decoupling natural resource use and environmental impacts from economic growth <https://www.resourcepanel.org/reports/decoupling-natural-resource-use-and-environmental-impacts-economic-growth>

UNEP (2015) USING PRODUCT-SERVICE SYSTEMS TO ENHANCE SUSTAINABLE PUBLIC PROCUREMENT - TECHNICAL REPORT - MAY 2015

https://www.oneplanetnetwork.org/sites/default/files/using_product-service_systems_to_enhance_sustainable_public_procurement.pdf



GRAZIE PER L'ATTENZIONE

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