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12.8.2022 afternoon

Piia Nurmi

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Feedback on the 1st week of the course?

Side note

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- RESPONSE project
- https://www.tuas.fi/en/research-and-development/research-groups/new-energy/

hi again!
Groups and topics?

Shai Elroy	2
Omer Hay	1
Paul Imhof	1
Patrick Kyembe	2
Yuan Lo	2
David Sachdev	1

2: sust food systems
1: technical loops

Initially, Finland's circular economy will grow from the following five areas.

1. **Sustainable food system**
   Consumers choose food that has been produced through the wiser use of raw materials that starts in primary agricultural production. Emissions and resource consumption will be lower.

2. **Forest-based loops**
   Finland is a circular bioeconomy leader because of its forestry and forest industry. Global competitiveness will increase with new commercial products, services, co-operation models and digital technology.

3. **Technical loops**
   Minimising the use of virgin raw materials creates a competitive edge. At the same time, we will maximise the length of material and product life cycles and opportunities for reuse.

4. **Transport and logistics**
   Transport will develop into a seamless, smart system that uses fossil-free fuels. Mobility as a Service (MaaS), the sharing economy and optimised and clean transport will take mobility to a new level.

5. **Common action**
   Legislators, companies, universities and research institutes, consumers and citizens, and vibrant regions are all needed to achieve systemic change. Communication and diverse interaction are particularly important when implementing joint action.

Our framework

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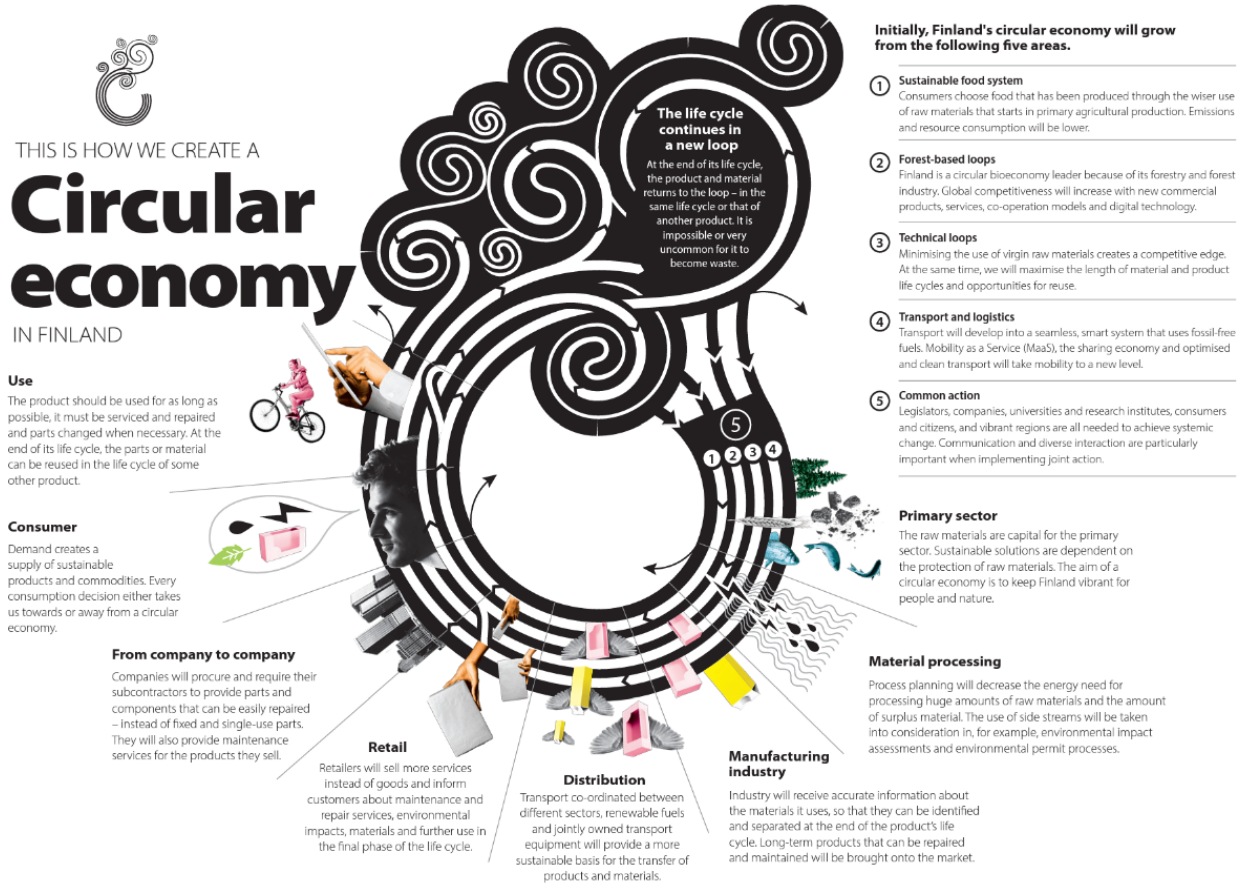

https://www.sitra.fi/en/publications/leading-cycle/

What is circular economy?

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- https://cicat2025.turkuamk.fi/en/what-is-cicat2025/

What do we mean by sustainable circular economy?

Sustainable circular economy (CE) means reducing the use of natural resources, closing material, energy and nutrition cycles, and retaining the value of products, materials and resources as long as possible. Sustainable CE is implemented in the actions of companies, cities, other organizations and citizens and the promotion of sustainable CE requires comprehensive collaboration across different societal levels.

When promoting sustainable CE, economic, social and ecological consequences for different stakeholders should be evaluated and considered currently and across generations, while staying within global environmental limits in the long term.

Agenda for today

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Industrial symbiosis

Mentoring of the group work

Circular business models & tools

mentoring

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- Common discussion

- Grading of this work

- Then 1on1 with one group // the other can work during that
- And then vice versa

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Business models

Five business models reduce the inefficiencies and create value for companies

Reform use of resources

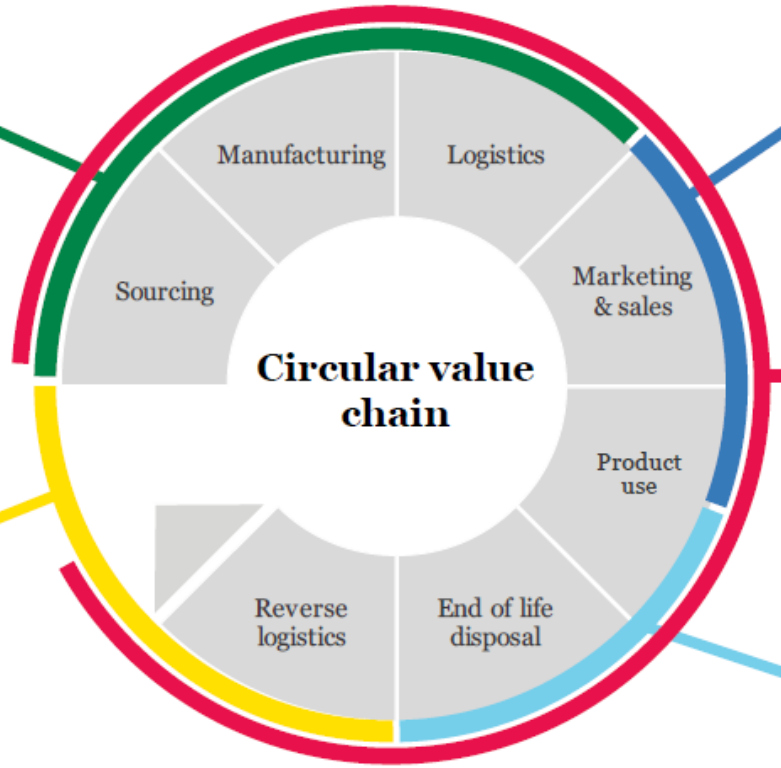
CIRCULAR SUPPLY CHAIN

Use of renewable energy, bio-based or potentially completely recyclable materials

Recover value in waste

RECOVERY & RECYCLING

Recovery of usable resources or energy from waste or by-products



Optimise capacity use

SHARING PLATFORM

Increased usage rates through collaborative models for usage, access, or ownership

Offer outcome oriented solutions

PRODUCT AS A SERVICE

Offering of products for use with retention of product ownership which incentivises increase in resource productivity along the whole life cycle

Extend life cycles

PRODUCT LIFE EXTENSION

Extension of the life cycle through repair, maintenance, upgrading, resale and remanufacturing

Source: Circular Economy Playbook for Finnish SMEs

TOOLS

HELPING HAND

There are plenty of different readymade templates and even toolsets to use in refining your business model into a circular one.

CIRCULAR ECONOMY BUSINESS MODELS FOR THE MANUFACTURING INDUSTRY

For meeting the needs and figuring out the right circular business model for the company, a Playbook published by Finnish Innovation Fund Sitra is a good toolset to start. The Playbook follows the path of building up the circular business and offers basic key templates to work with. The Playbook is made specifically for the manufacturing industry. It gives real life examples from Finnish companies from the fields of Machinery & Equipment, Marine, Energy and Transportation.

THE CIRCULAR TOOLBOX

Another publication that follows the developer's path very well is the Circular Toolbox by Circle Economy. The Toolbox is made specifically for Product as a Service and Resell business models and there are many useful templates. The Toolbox is made for apparel brands, but the templates work for any kind of industries.

LEAN SERVICE CREATION HANDBOOK

It is possible that when a company starts to develop new business models, the problem is not actually in markets or with the customers, but the problem is in the company culture. To help the change also inside the company, for example this Lean Service Creation Handbook by Futurice can help. The objective of the Handbook is to form better digital solutions, but the tools and templates can be used to design the new service and facilitate the change in any kind of companies to a customer centric way, which is initial specially in service development and also in circular economy.

Source: a book soon to be publishe by TUAS (Paas Pilots project)

Other tools

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- A new ISO standard soon ready for CE
- Tools by Ellen MacArthur Foundation, e.g. Circulytics

Key concept: circular business models

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- **Product–as–a–service** – provision of services instead of products.
- **Renewability** – using renewable and recyclable materials as well as renewable energy in product design and manufacturing.
- **Sharing platforms** – increasing the capacity to use goods and resources and extending their life cycles through digital platforms as a result of renting, selling, sharing and reuse, for instance.
- **Product-life extension** – using products according to their original purpose for as long as possible or enabling several stages of reuse through maintenance, repair and refurbishment.
- **Resource efficiency and recycling** – material and energy–efficient solutions, and the collection and reuse of products and raw materials that have reached the end of their life cycle.

Examples?

https://www.sitra.fi/

https://www.sitra.fi/en/projects/interesting-companies-circular-economy-finland/#the-most-interesting-companies-in-the-circular-economy-in-finland-2-1

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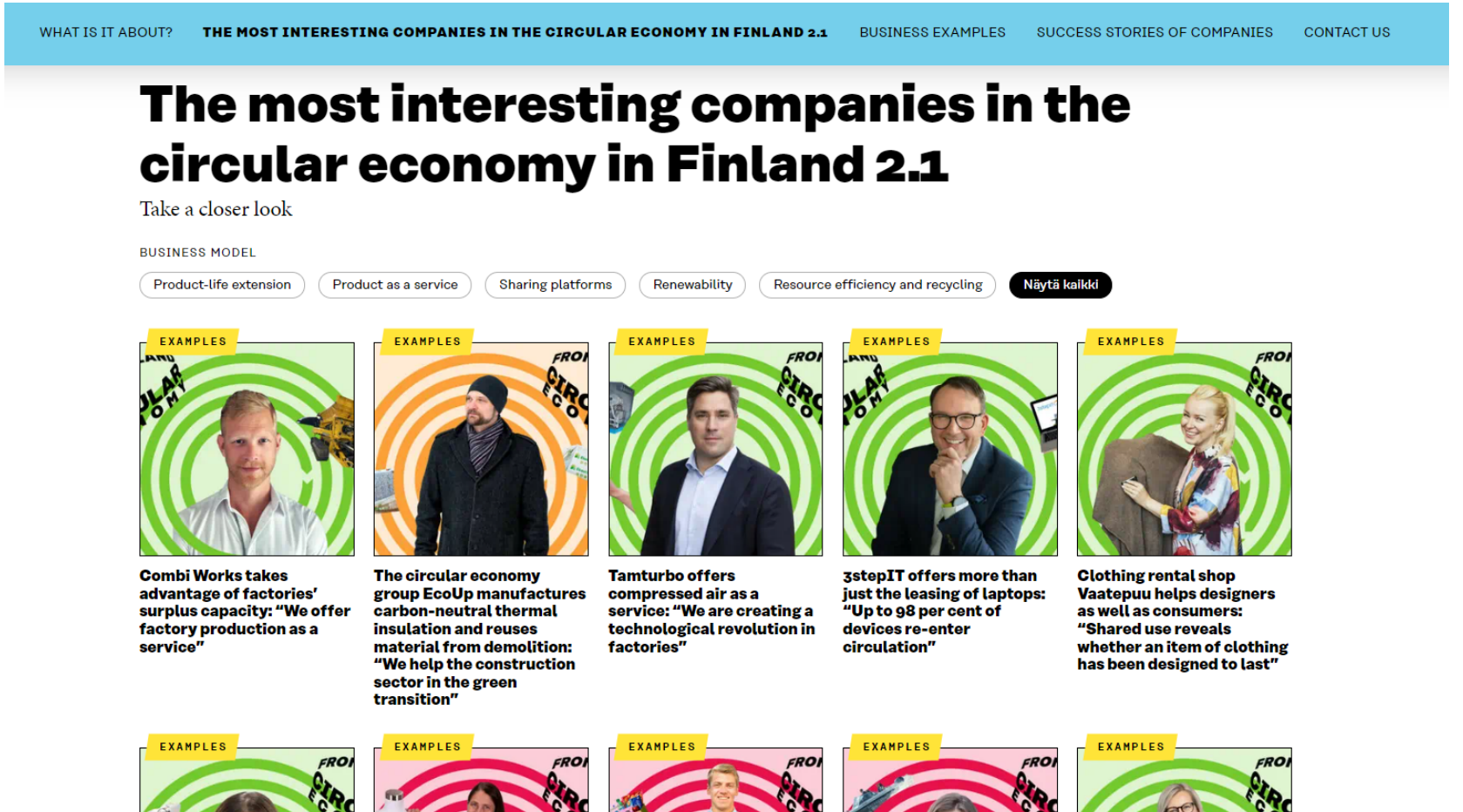

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Happy weekend! <3