

INTERNATIONAL APPROACHES TO CIRCULAR ECONOMY APPLICATION

CASE FINLAND

Kari Herlevi,
Project Director,
Circular Economy,
Sitra

FINLAND

Source: Finland Toolbox



5 key facts about Sitra

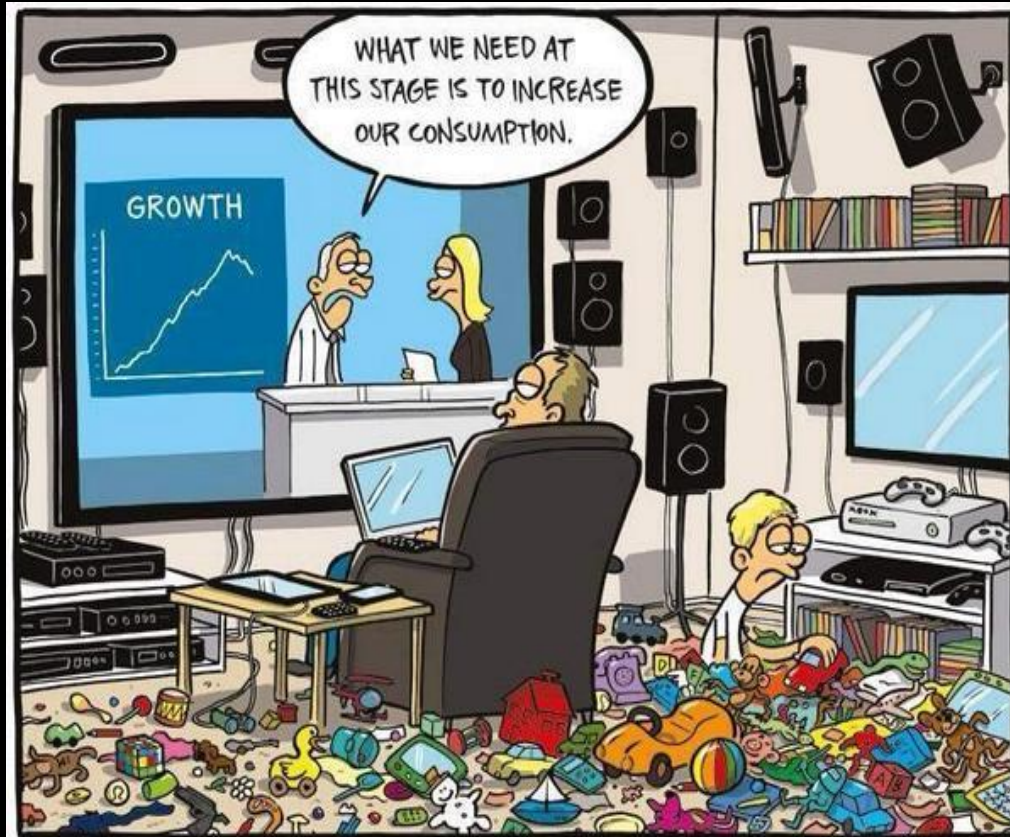
1. A gift from Parliament to the 50-year-old Finland.
2. An independent foresight agency: futurologist, researcher, visionary, developer, experimentalist, partner, trainer, networker.
3. Funded by returns on endowment capital and capital investments.
4. Envisages Finland as a successful pioneer in sustainable well-being.
5. Its vision is supported by three themes, six focus areas and dozens of projects.

+1

Building our future
together



SITRA



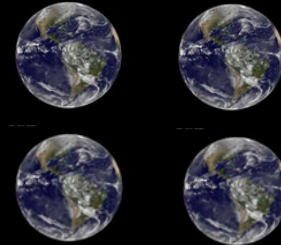
Economic Sociology and Political Economy community

How many globes do we need??

2017



2050



The World is full of inefficiencies, loss and waste

On average, materials are used only once in Europe.

(Ellen MacArthur Foundation 2015)

Cars are not used 92-98 % of time.

(Several sources, e.g. EEA 2015; Material Economics 2018)

1/3 of produced food goes to waste in value chain.

(UN FAO)

67 % of global greenhouse gas emissions are related to material management.

(UNDP 2017)

Only 9,1% of the global economy's materials remain in circulation.

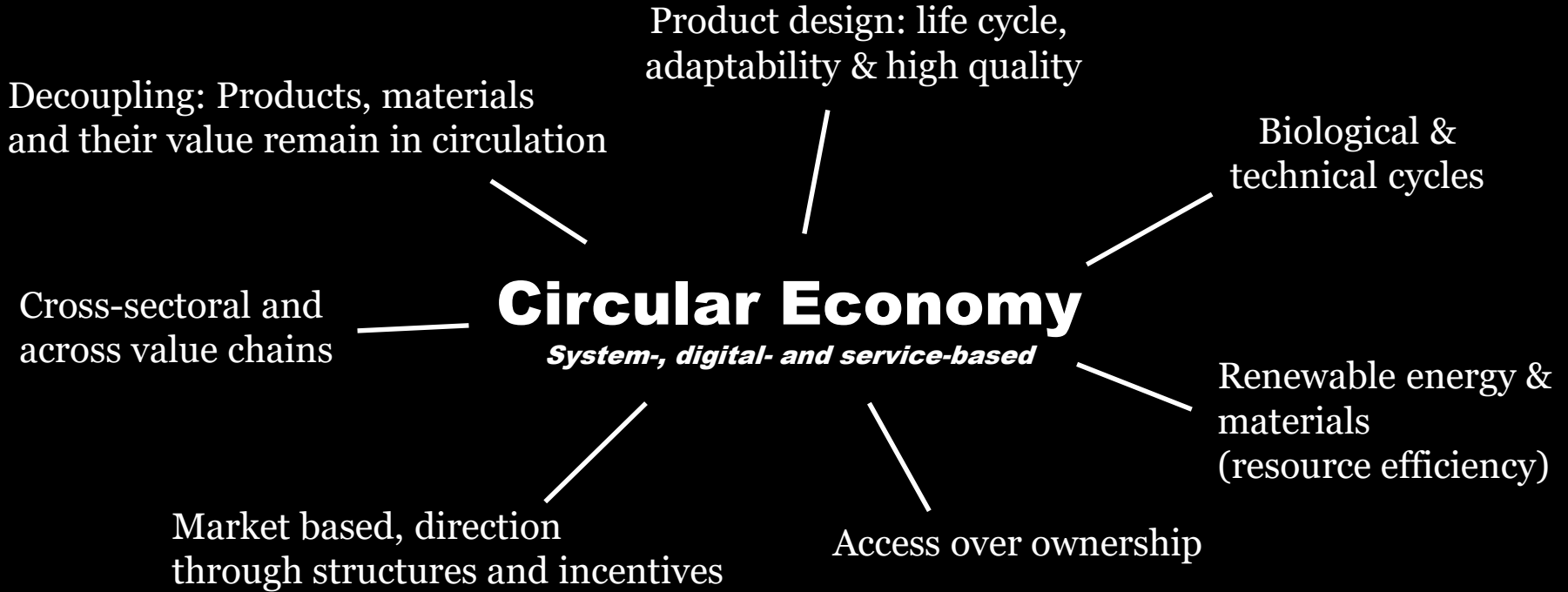
(Circle Economy 2018)

Offices are empty 60 % of time.

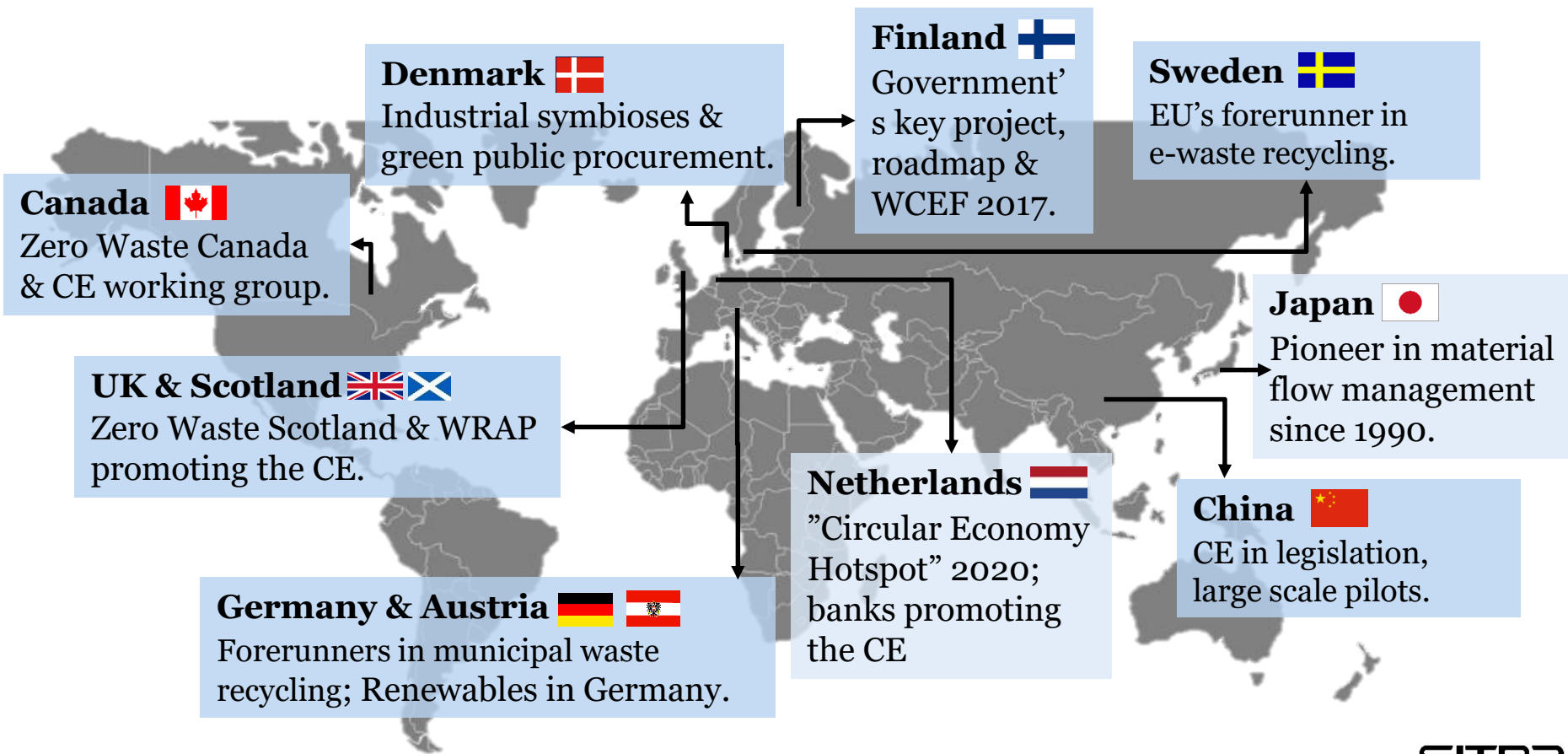
(GSA Office of Governmentwide Policy 2011)

12 billion tons of plastics waste will be in landfills or natural environment by 2050.

(Geyer et al. 2017)



Circular Economy advances across the globe



HOW THE CIRCULAR ECONOMY REDUCES CO₂ EMISSIONS

Getting more from the materials we already have

1 MATERIALS RECIRCULATION

GHG

MATERIALS

*High-value recycling
and less new material*

- High value recycling*
- Increased collection rates
 - Design for disassembly and improved materials separation
 - Less contamination and downgrading of materials

2 PRODUCT MATERIAL EFFICIENCY

MATERIALS

PRODUCT

*Less material input for
each car, building, etc.*

- Improved production*
- Less production waste
 - Avoid over-specification
- Reuse of components*
- Improved design*
- High-strength materials
 - New design principles
 - Variation in size

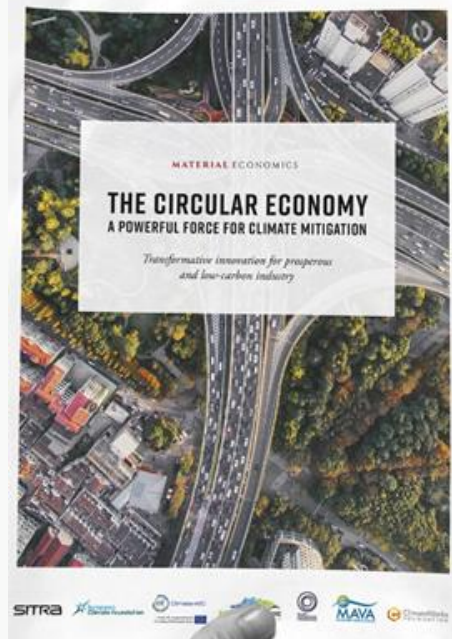
3 CIRCULAR BUSINESS MODELS

PRODUCT

USEFUL SERVICE

*Fewer products to
achieve the same benefit*

- Higher utilisation*
- Sharing of products
 - Product as service
- Longer lifetime*
- Design for durability and disassembly
 - Long lasting materials
 - Improved maintenance
 - Remanufacturing



Globally unique road map

**Government: Finland
becomes a global leader
in the circular economy**

**Added value potential of 3 billion
euros for the economy of Finland**

**13-66 % reduction potential in
greenhouse gas emissions of different
sectors (Deloitte 2017)**

***“The number of additional jobs
would exceed 75,000 in Finland...”
(Club of Rome)***

THIS IS HOW WE CREATE A

Circular economy

IN FINLAND



Use

The product should be used for as long as possible, it must be serviced and repaired and parts changed when necessary.



Consumer

Consumer demand creates a supply of sustainable products and commodities.



From company to company

Companies will procure and require their subcontractors to provide parts that can be easily repaired – instead of single-use parts.

Retail

Retailers will sell services instead of goods and inform customers about maintenance and repair services, environmental impacts, materials and further use in the final phase of the life cycle.

Distribution

Transport co-ordinated between different sectors, renewable fuels and jointly owned transport equipment will be used in distribution.

Manufacturing industry

Long-term products that can be repaired and maintained will be brought onto the market. Materials will be separated at the end of the product's life cycle.

Primary sector (raw materials sector)

The raw materials are capital for the primary sector. Sustainable solutions are based on the wise use of raw materials.

Material processing

Process planning will reduce the energy needed to refine huge amounts of raw materials. The use of side streams will be taken into consideration.

The life cycle continues in a new loop

- ① Sustainable food system
- ② Forest-based loops
- ③ Technical loops
- ④ Transport and logistics
- ⑤ Common action



GOVERNANCE



MUNICIPALITIES & CITIES



CITIZENS



COMPANIES






































R&D and EDUCATION

26 PROJECTS

**CIRCULAR ECONOMY TEACHING
FOR ALL LEVELS OF EDUCATION**



EARLY MOVERS HAVE ALREADY STARTED

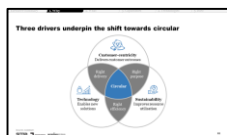
	Machinery & Equipment	Marine	Energy	Transportation
 CIRCULAR SUPPLY CHAIN	Valmet  Outotec	 Kavika WÄRTSILÄ 		 AGCO POWER
 SHARING PLATFORM	EquipmentShare Valmet  eRENT	AMLA 		 UBER FREIGHT
 PRODUCT LIFE EXTENSION	SRH  KONECRANES   PONSSE	SCHOTTEL  Evac  WÄRTSILÄ 	Helvar  Schneider Electric 	ALSTOM  AGCO POWER  RENAULT
 RECOVERY & RECYCLING	NOKIA Valmet  zenROBOTICS 	  SEA CRADLE 	SIEMENS Schneider Electric	nokian RENKAAT  GM
 PRODUCT AS A SERVICE	AMECO  Tamturbor  SUPERSE AIR POWER	Rolls-Royce WÄRTSILÄ	PHILIPS  SOLNET 	MICHELIN  MANIT

With the Circular Economy Playbook and tools you achieve circular advantage and measurable business cases www.circularplaybook.fi

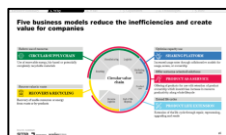
The playbook consists of 6 chapters with circular economy concepts, best practices and tools to guide your business to identify and define your circular economy opportunity and develop a plan to realize circular advantage

PLAYBOOK CHAPTERS

1. Why circular economy?



2. What opportunities exist?



3. Which capabilities are required?



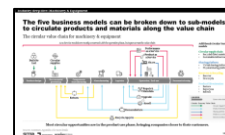
4. Which technologies can support?



5. How to design the transformation journey?



6. Industry deep dives

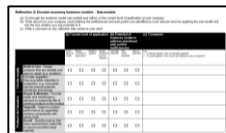


EXAMPLE TOOLS¹

Value case tool



Business model development toolkit



Capability maturity assessment



Technology maturity assessment



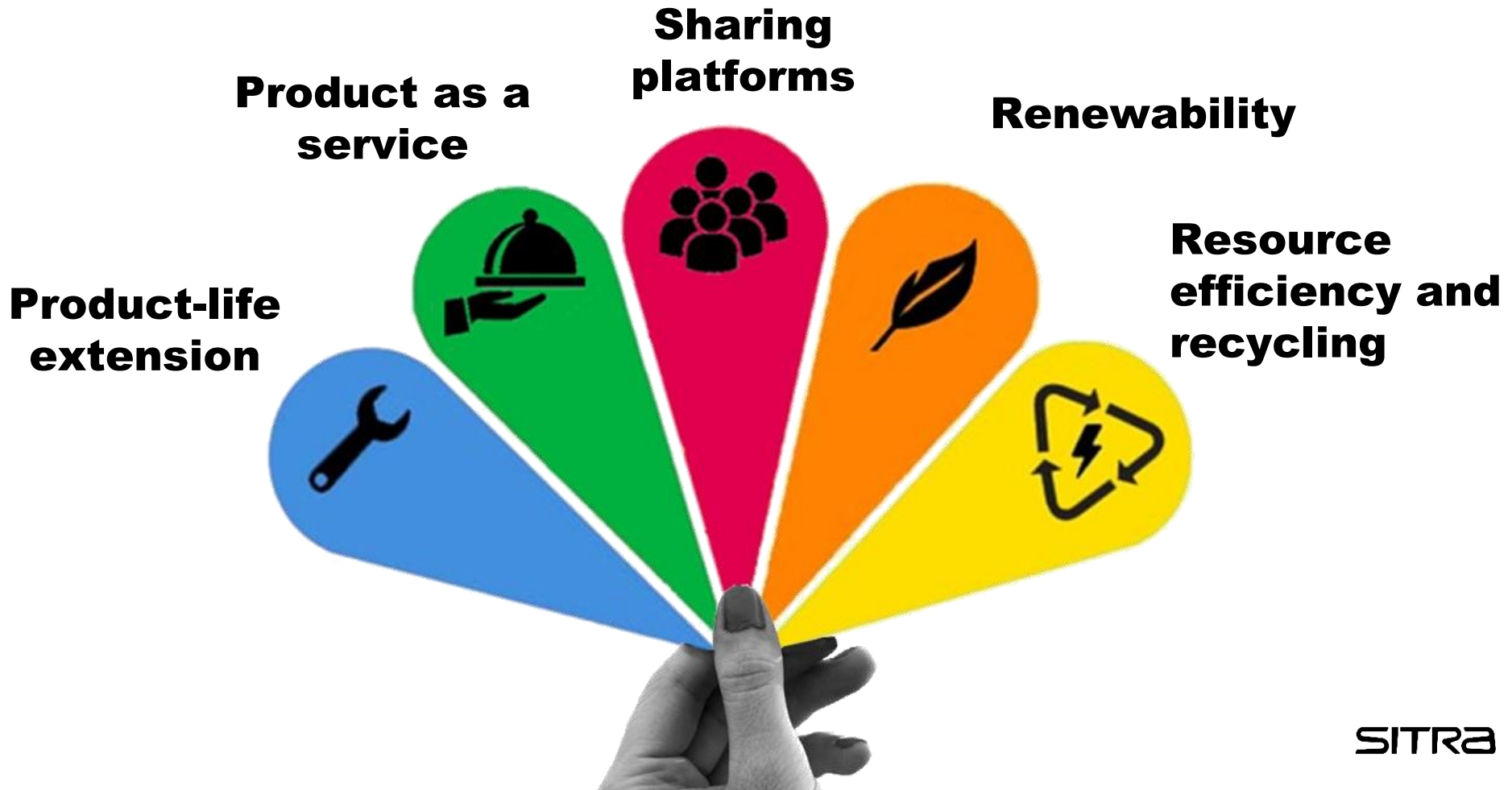
Roadmap development



Business model canvas



¹ Additional tools available in the playbook

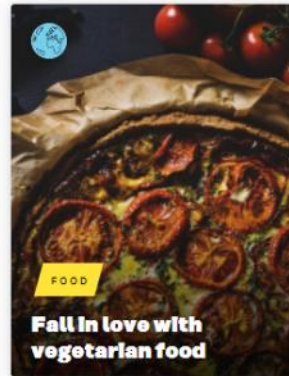
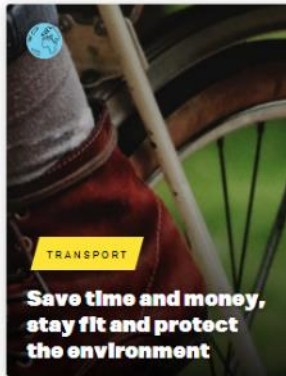
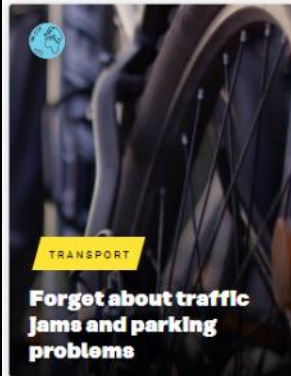


TEST YOURSELF

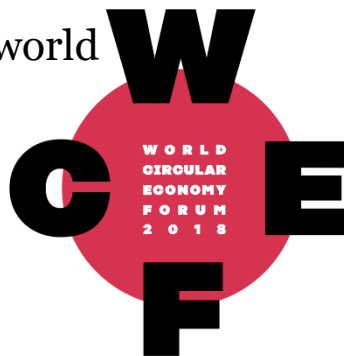
AND FIND OUT WHETHER YOU ARE A THREAT OR AN OPPORTUNITY.

Is your lifestyle good or bad for the environment?

100 SMART
ACTIONS



1100+ participants from around the world
60+ countries
16 plenary and parallel sessions
100+ top speakers
25 exhibitors
10 side events
5 key visions
9 international partners



SITRA



WORLD CIRCULAR ECONOMY FORUM TIMELINE



June 2017



Helsinki
Finland

October 2018



Yokohama
Japan

June 2019



Helsinki
Finland

Canada 2020



Canada



An initiative of The World Economic Forum and The Forum of Young Global Leaders

The Circulares 2018

WINNER

The World Economic Forum Award for
Circular Economy Public Sector

thecirculares.org

In collaboration with Accenture Strategy

Sponsored by: Dell | Ecolab

Media Partners: CNBC | Fortune



SITRA

Thank you!

Kari Herlevi

Project Director

p. 0504639397

Kari.herlevi@sitra.fi

@kherlevi

sitra.fi | seuraavaera.fi

@sitrafund     