

Technology Industries of Finland



Circular economy business models based on digitalisation and delivering customer value

circularplaybook.fi

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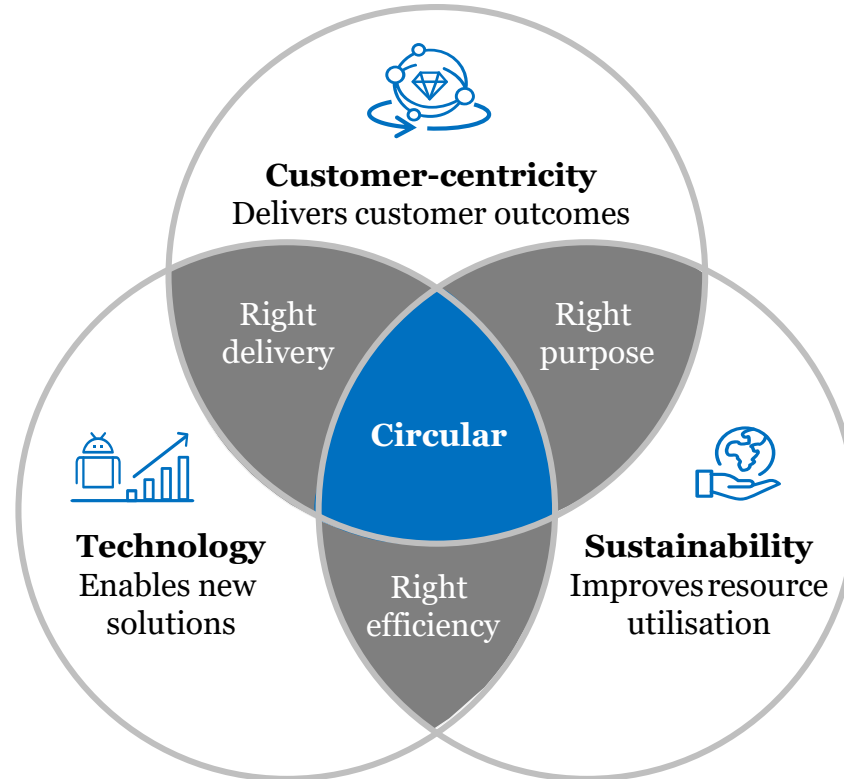


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Finland was the first country in the world to create a Circular Economy Roadmap.

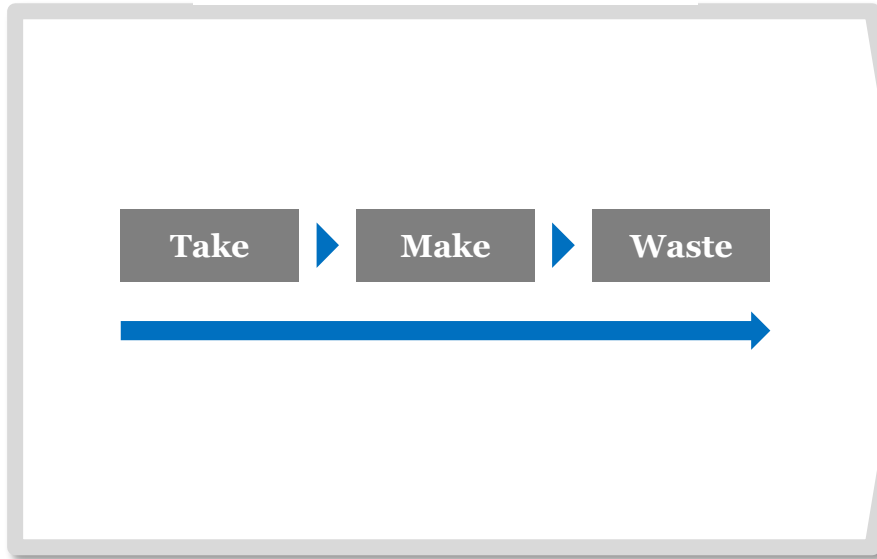
Three drivers underpin the shift towards circular



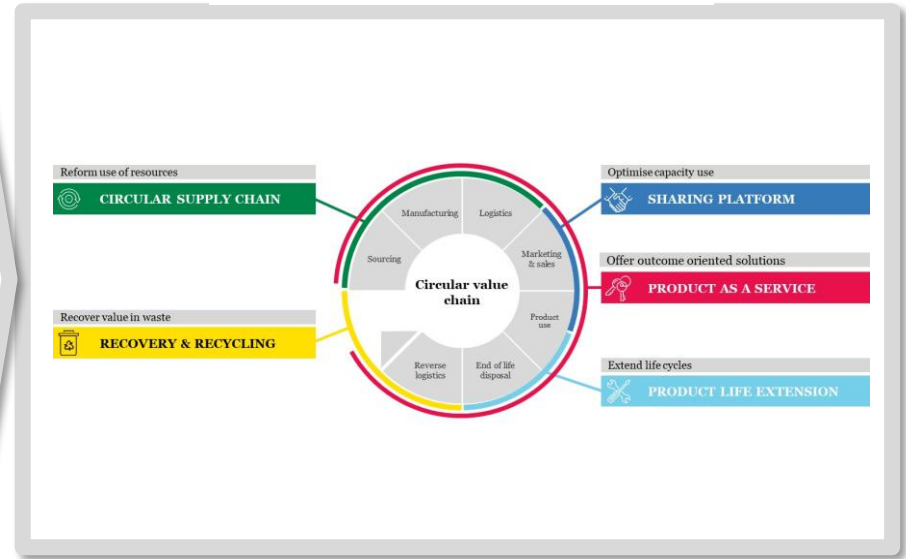
Source: Accenture, Appendix 2 for more details

We are driving a shift from linear to circular business models in the manufacturing industry

From Linear...



...to Circular



Focusing on the change to customer-centricity and digitally enabled business models

Compelling examples from Finnish manufacturing companies and their competitors exist

	Machinery & Equipment	Marine	Energy	Transportation
CIRCULAR SUPPLY CHAIN	Valmet, Outotec	Rolls-Royce, Kavika, ABB, WARTSILÄ	Schneider Electric, Danfoss	Volvo, AGCO POWER
SHARING PLATFORM	EquipmentShare, eRENT, Valmet	MLA, Global Forward Center of Purchase, GSCP	POWER LEDGER, SOLshare	UBER FREIGHT
PRODUCT LIFE EXTENSION	SRH, KONECRANES, CAT Reman, PONSSE	SCHITTTEL, Smetegården, Evac, ABB, WARTSILÄ, PIKKO WORKS	Helvar, ABB, Schneider Electric	ALSTOM, SCANIA, RENAULT
RECOVERY & RECYCLING	ZENROBOTICS, PURUPPIA	WARTSILÄ, KONGSBERG, SEA CRADLE, MAERSK	Schneider Electric, GRUNDFOS, SIEMENS	NOKIAN RENKAAT, GM, Ford
PRODUCT AS A SERVICE	AMECO, metso, Tamturbu, GE	Rolls-Royce, WARTSILÄ	PHILIPS, SOLNET	MICHELIN, VOLVO, MANIT

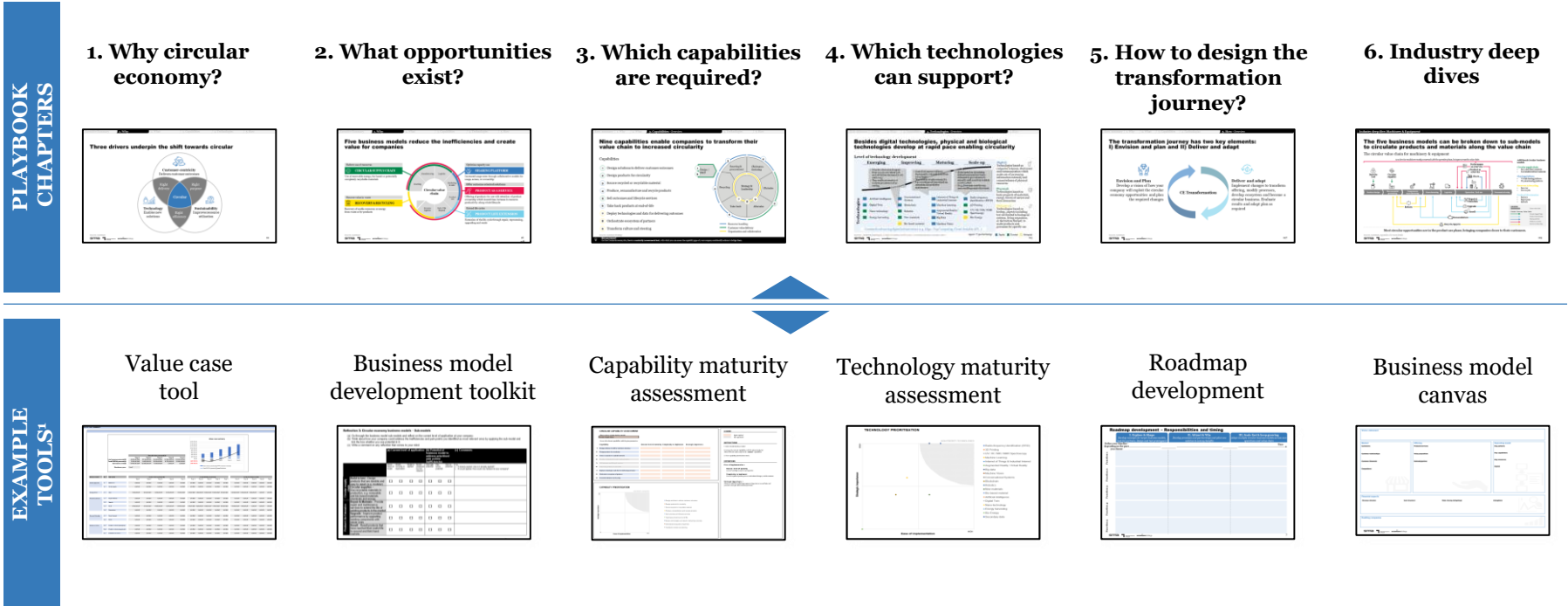
Source: Company websites

We worked with a large group of players in the Finnish manufacturing ecosystem



As an outcome a **Circular Economy Playbook and tools** were created: circularplaybook.fi

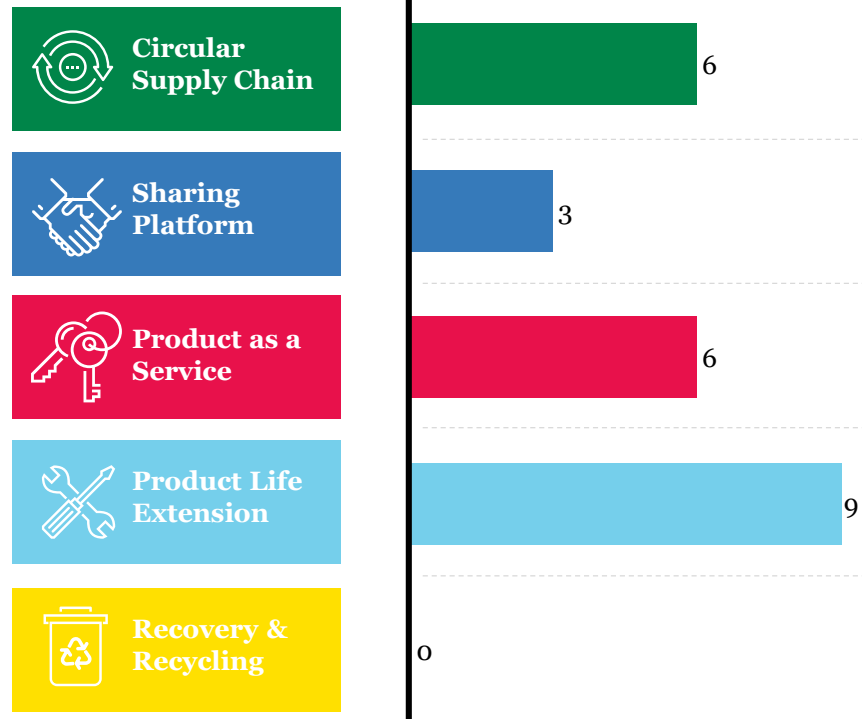
The playbook consists of 6 chapters with circular economy concepts, best practices and tools to guide your business to identify and define your circular economy opportunity and develop a plan to realize circular advantage



¹ Additional tools available in the playbook

Companies have developed circular ideas specific to their company

Circular ideas identified during workshops



Example ideas

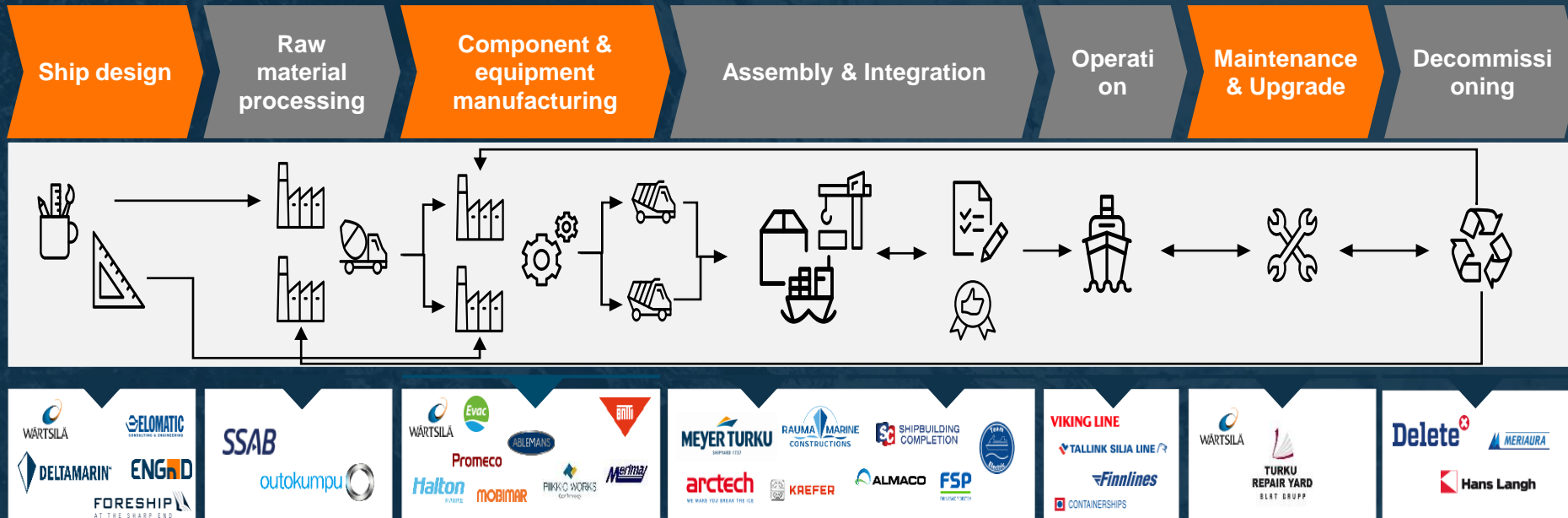
Build machines using modular design incl. product passports/tracking, to enable product-life-cycle services and product take-backs	
Seasonal rentals of multi-purpose machines in municipal areas as utilization rate varies significantly over the year. Use partnership network to facilitate sharing	
Kitchen-as-a-Service: offer rental services and maintenance of outdoor kitchen for catering and events	
Manage repair and maintenance service of waste shredders by outsourcing service staff to achieve cost advantage through building experience and predictive maintenance	
N/A	

Smart Marine Ecosystem

Connecting
Smart Vessels

To
Smart Ports





Beneq: New Modular Product Design



Company description

Beneq® is the Home of ALD. Its Atomic Layer Deposition solutions improve the performance and durability of electronics and optics. They are the invisible advantage in leading semiconductor, IoT, 5G and automotive applications.

Beneq was founded in 2005. The Beneq factory in Espoo, Finland, is where atomic layer deposition was applied in industrial production for the first time in 1984. Today, it is the largest ALD-dedicated production facility in the world.

In 2017, the turnover of Beneq corporation was 21.3 million euros, of which 97% came from outside of Finland. In the end of August 2018, Beneq employed 146 people.

The circular opportunity

The traditional project-based approach in the ALD equipment business has resulted in customized products that are not ideal for upgrading, maintenance and support. They are sometimes complex and slow to produce, too.

To tackle the issues, Beneq Thin Film Solutions set out to create a new modular product architecture that supports easier upgrades and recycling. The new product designs have been from the start planned so that they will be easy to manufacture, repair and upgrade.

Benefits

The target of the new product designs is to save space and materials and to make the equipment easier and faster to manufacture. The advanced product architecture will also allow new business models, such as take-back programs and pre-owned equipment offering. It will also serve as a basis for new lifecycle services and maintenance programs.



Applied business model



Tamturbo

SUPREME AIR POWER

100% Oil-less High Speed Turbo
Compressors

Air as a Service €/m³

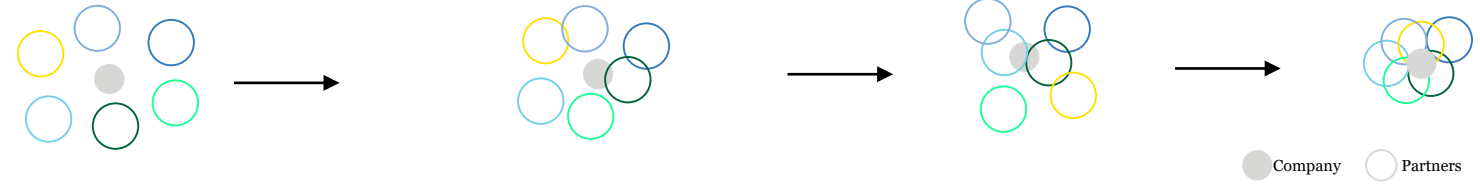


Ecosystem partners can help in bridging internal capability gaps



6. Identify partners to develop ecosystem

Development of Ecosystem over time



External ecosystem partners

Illustrative examples

Customers

- Current or potential new customers
- Reveal insights on needs and iteratively improve solution

Suppliers & delivery partners

- Goods and services providers for internal use and collaborative solution delivery (waste/ material management, logistics, insurance, payment solutions, ...)
- Grant access to circular material, are partners for joint generation of circular material or partners for service delivery

Technology providers

- Providers of technologies and software enabling digital solutions or internal processes
- Engage in solution and production process design and supply required technology

CE Thought-leaders

- Universities, networks and peers with extensive CE knowhow
- Serve as source of inspiration, sounding board and (peer-) learning forum



Financiers

- Public institutions, banks, investment funds, supply chain partners
- Give access to funding required for offering the CE business model



Public and societal actors

- Governments, associations and other representatives
- Influence public perception and opinion and influence or set framework conditions



Did you know?

On the Circular Economy site, there is a tool called **Ecosystem partner identification**, which helps you in identifying ecosystem partners to support with your circular business idea.



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