Circular Transition

REVERSE LOGISTIC WORKSHOP

September 2017 - Glasgow, Scotland

Malene Køster Lasthein

AGENDA

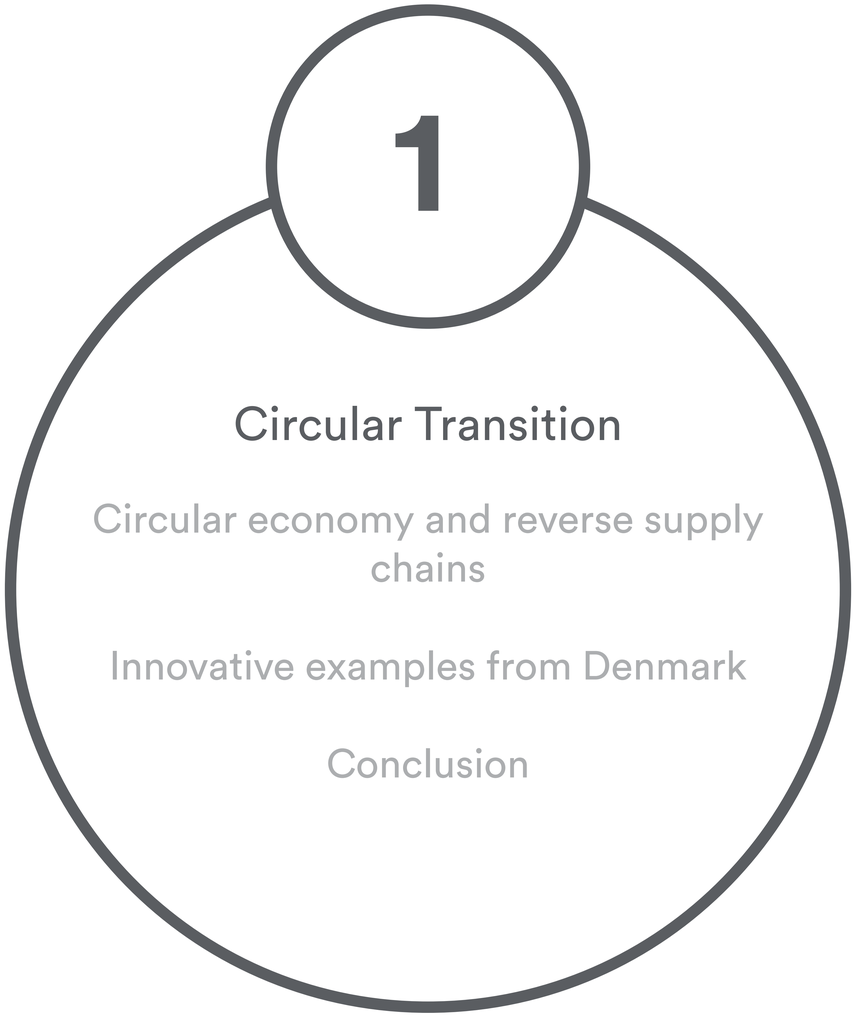
Circular Transition

Circular economy and reverse supply chains

Innovative examples from Denmark

Conclusion

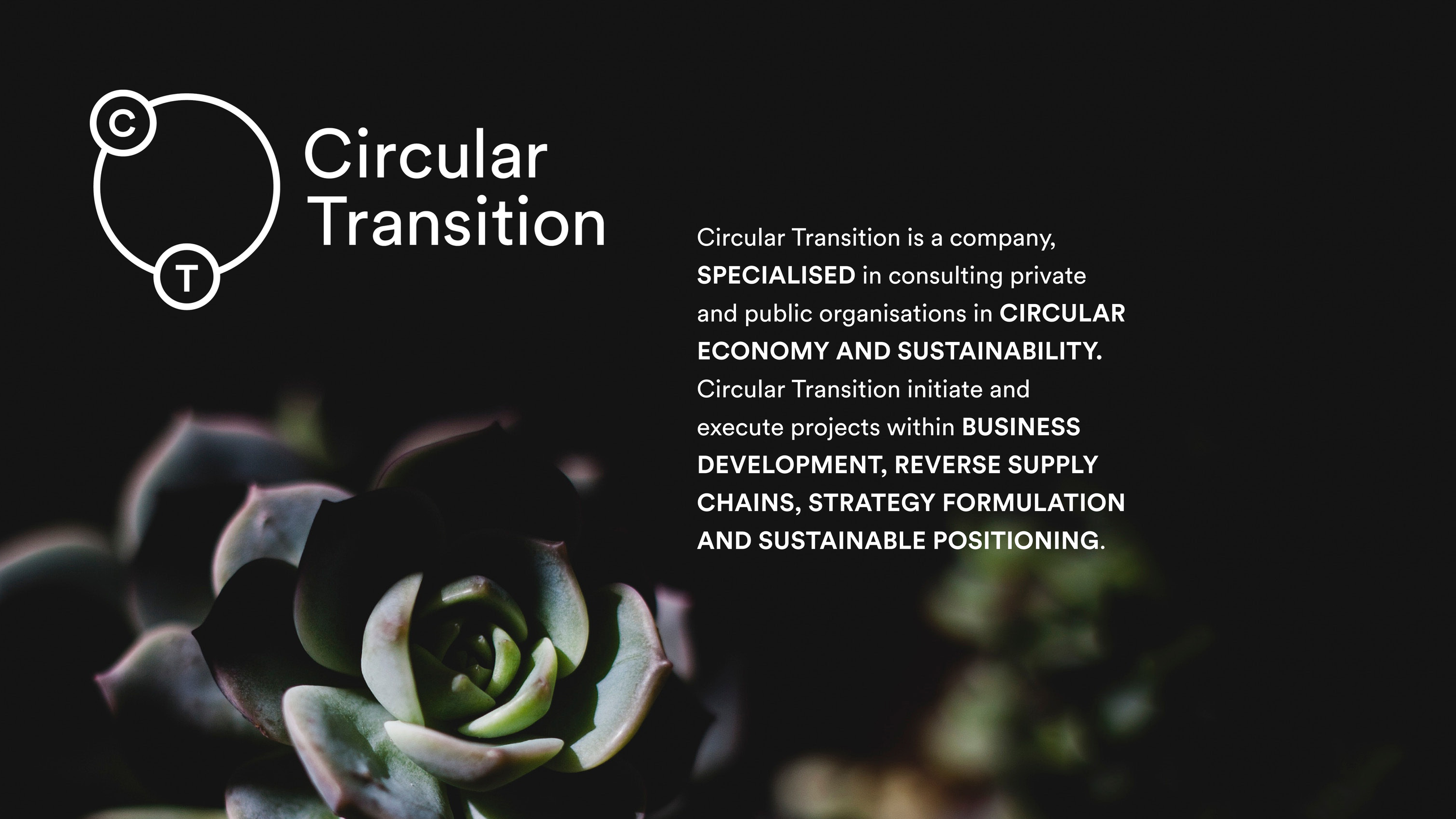
Circular
Transition



Circular Transition

Circular Transition

Circular Transition is a company, **SPECIALISED** in consulting private and public organisations in **CIRCULAR ECONOMY AND SUSTAINABILITY.** Circular Transition initiate and execute projects within **BUSINESS DEVELOPMENT, REVERSE SUPPLY CHAINS, STRATEGY FORMULATION AND SUSTAINABLE POSITIONING.**



Circular Transition

Circular Transition emerged from the **AMBITION AND DESIRE TO CHANGE OUR CURRENT PRODUCTION- AND CONSUMPTION PATTERN IN WHICH FINITE RESOURCES AND ENERGY IS USED TO PRODUCE DISPOSABLE PRODUCTS**. When the products' lifespan has expired, they are discarded as waste, **TURNING THE ONCE HIGH-VALUE PRODUCTS INTO LESS VALUABLE PRODUCTS OR USELESS WASTE.** This linear pattern is also referred to as take-make-dispose.

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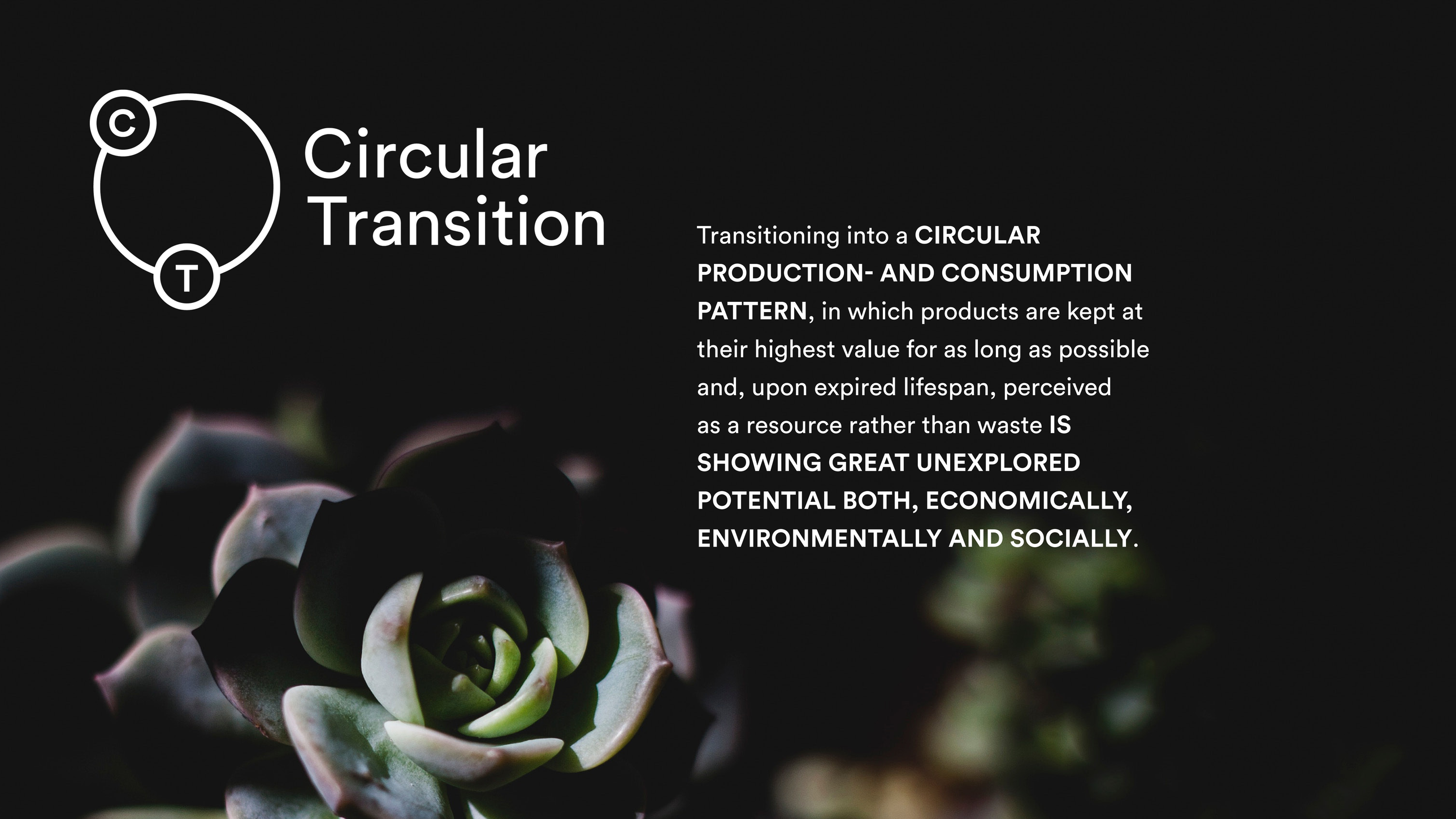
Transitioning into a **CIRCULAR PRODUCTION- AND CONSUMPTION PATTERN**, in which products are kept at their highest value for as long as possible and, upon expired lifespan, perceived as a resource rather than waste **IS SHOWING GREAT UNEXPLORED POTENTIAL BOTH, ECONOMICALLY, ENVIRONMENTALLY AND SOCIALLY**.

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CUSTOMERS:
2/3 private companies
International reach

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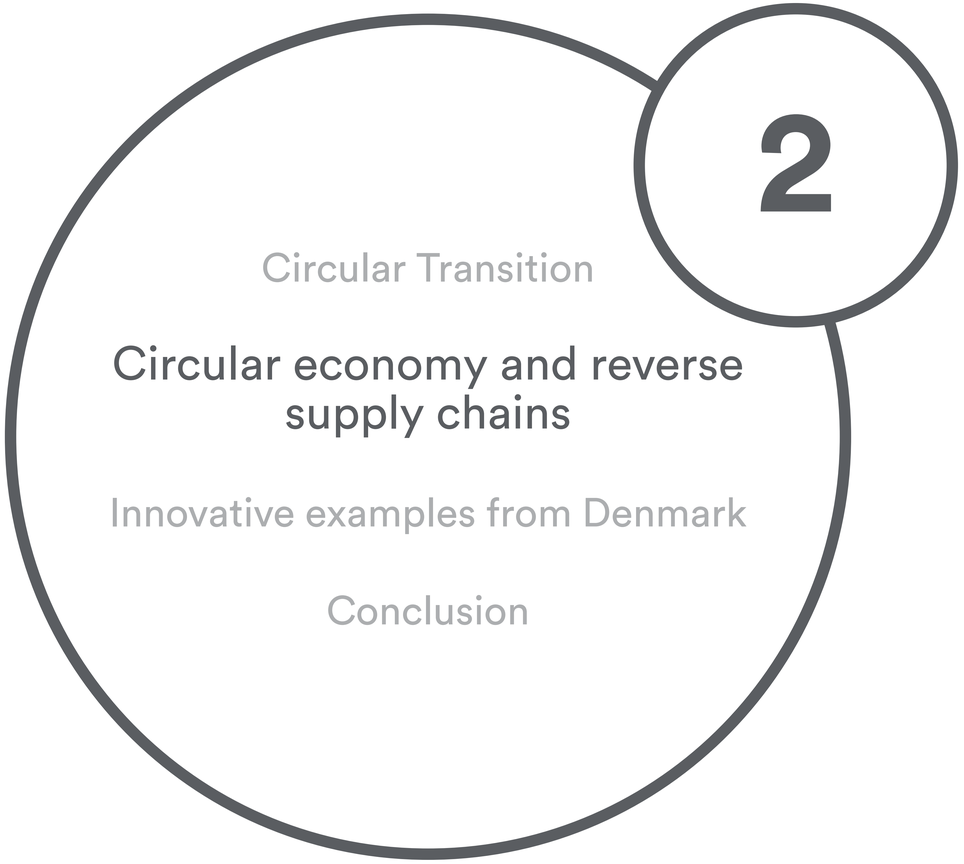
PROJECTS:

Currently engaged in 8 projects

Within:

/ Business models / Business cases / Strategic development / Reverse supply chains



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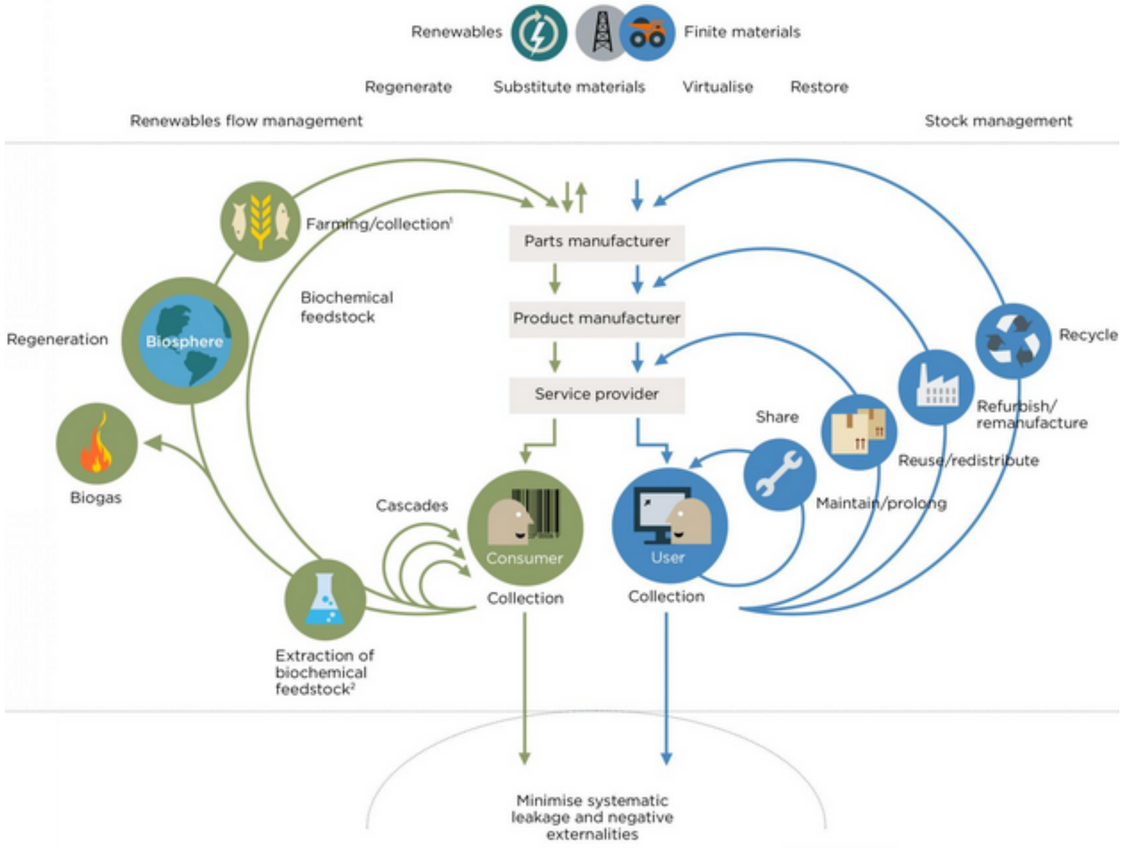
CIRCULAR ECONOMY

Main principles



Source: Ellen MacArthur Foundation

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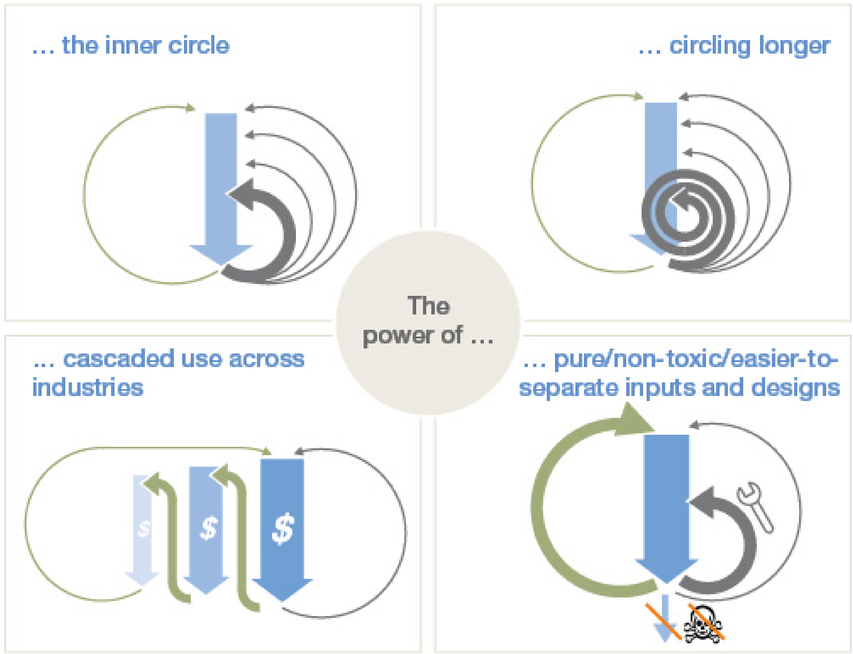
CIRCULAR ECONOMY

Value creations



Source: Ellen MacArthur Foundation

CIRCULAR ECONOMY

Demand for business services

A circular economy would create demand for new business services, such as:

- Collection and reverse logistics companies that support end of life products being reintroduced into the system
- Product remarketers and sales platforms that facilitate longer lives or higher utilisation of products
- Parts and component remanufacturing and product refurbishment offering specialised knowledge

REVERSE SUPPLY CHAINS

VALUE	100 BILLION USD ANNUALLY
PRODUCT LIFE CYCLE	THE LENGTH OF RETRIEVING A PRODUCT
REDESIGN	MONETARY GAINS BY REDESIGN

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REVERSE SUPPLY CHAINS

PRODUCT ACQUISITION	QUALITY, QUANTITY, AND TIMING
REVERSE LOGISTICS	TAILORED TO PRODUCTS INVOLVED AND ECONOMICS OF REUSE
INSPECTION AND DISPOSITION	EARLY INSPECTION AND DISPOSITION DECISIONS IN RETURNS PROCESS
RECONDITIONING	CAPTURE VALUE BY EXTRACTING AND RECONDITIONING COMPONENTS FOR REUSE OR REMANUFACTURING PRODUCTS FOR RESALE
DISTRIBUTION AND SALES	DETERMINE WHETHER THERE IS DEMAND FOR IT OR WHETHER A NEW MARKET MUST BE CREATED

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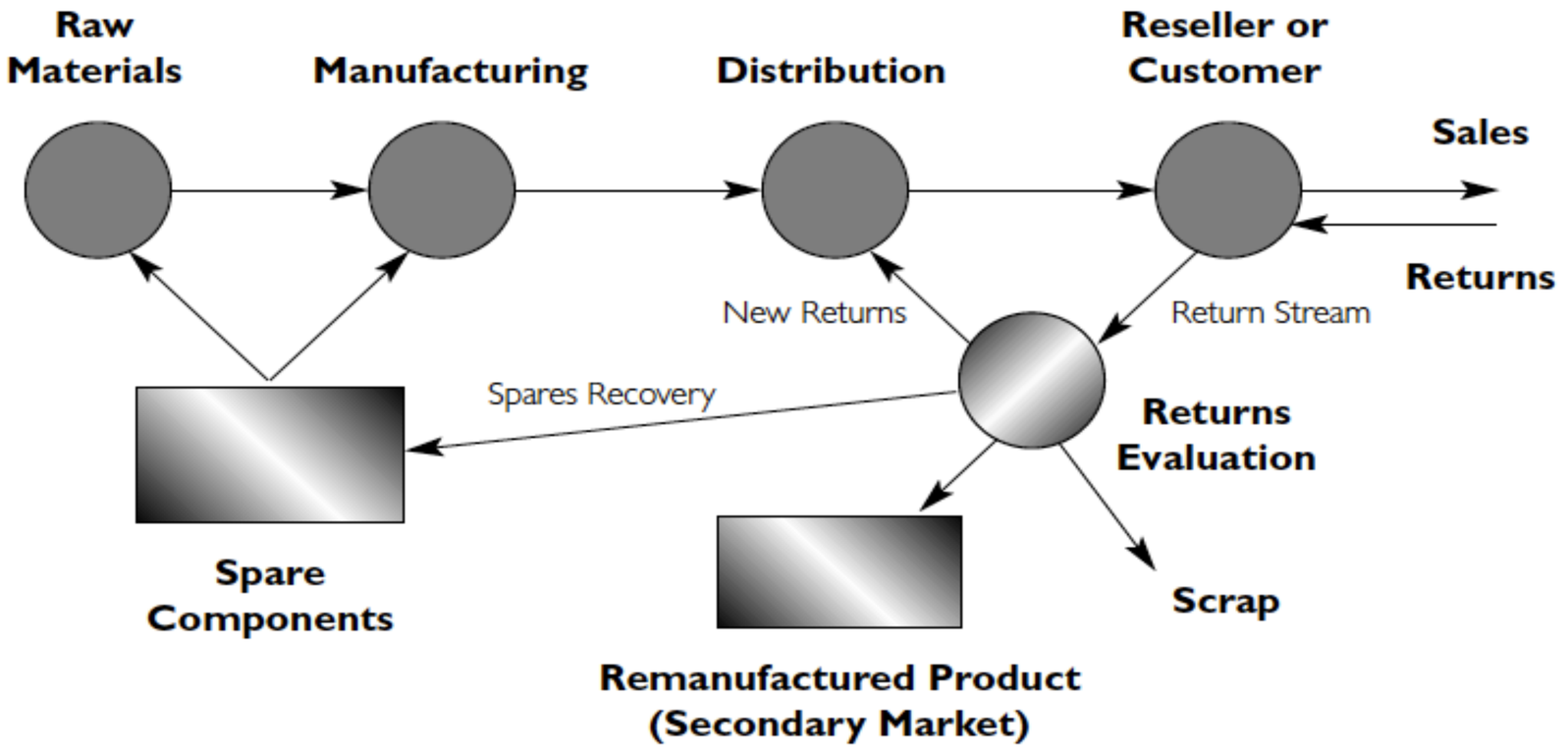
REVERSE SUPPLY CHAINS



Source: Blackburn et al. 2014

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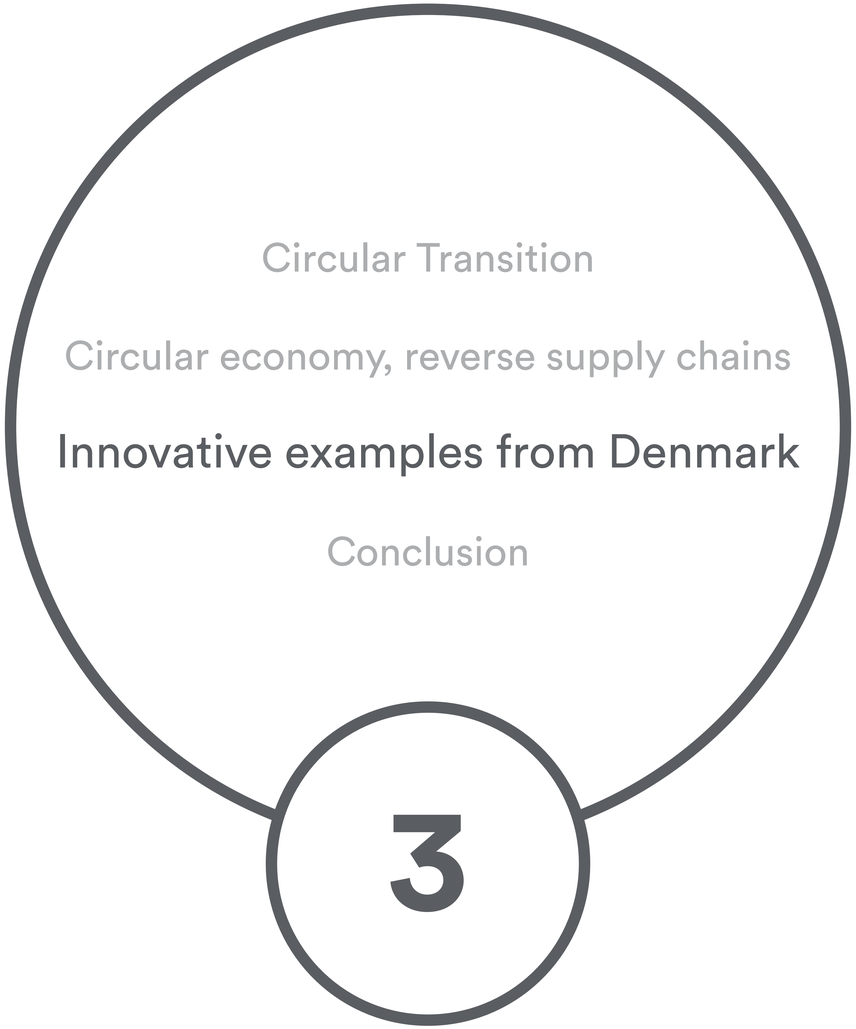

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INNOVATIVE EXAMPLES FROM DENMARK

Business models

LEASING

INDUSTRIAL SYMBIOSIS

UPCYCLING

REUSE AND REPAIR

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LEASING

The company retains ownership of a product and offers it to multiple customers. The customers buy the right to use the product over a time period, typically exclusively, and the product is returned to the company after use

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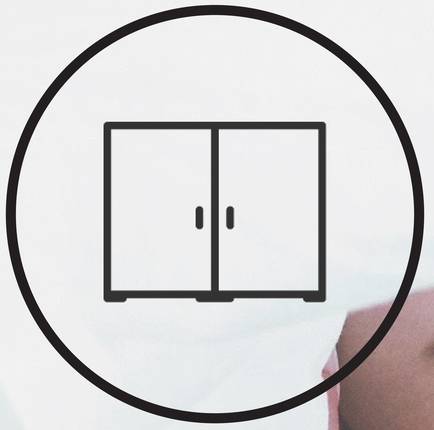
LEASING

Facts about textiles

Each year every Dane consume app. **16 KILOS** of clothing



On average, **1/3** of the clothes in the closet has not been used in the past year

80 % of the discarded clothes has **75 %** of it's remaining life cycle left when discarded

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LEASING

Gardin Lis | **What is it?**

One of the biggest retailers of curtains in Denmark

More than 30 years experience selling curtains to citizens, private companies and public organisations

More than 30 employees

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LEASING

Gardin Lis | **Business model**

Companies lease curtains paying each month or quarterly over a period of 5-8 years

When leasing period is up there are three options;

- GardinLis takes them back in turn for a small fee, which has already been agreed on
- The company can buy them for the same fee
- The company sells the used curtains to GardinLis by agreeing to enter into a new leasing period

Maintenance of curtains can be chosen to be a part of the leasing

Curtains are recycled by the end of the leasing agreement

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LEASING

Vigga | **What is it?**

Established in 2014

World's first materity- and childrens clothing brand, which is designed for a circular economy

Organic clothes

A baby grows 8 clothing-sizes before it turns 2 years old. This means that parents have to buy on average 300 pieces of clothes in these few years.

LEASING

Vigga | **Business model**

Customers choose between packages depending on amount of clothes they already have available

Receives a bag of clothes - along with a 'return' bag

When clothes needs to be changed customers receive a new bag and hands in their return bag with the used clothes

Clothes are being washed in Berendsen. A laundry which has the Nordic Ecolabel - the official sustainability ecolabel for the Nordic countries

Damaged clothes is to be expected and should be returned to be repaired or recycled

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LEASING

Vigga | **Results**

VIGGA has circled more than **100.000 PIECES OF CLOTHES** from 2015 to May 2017

VIGGA families have saved more than **7,5 MILL. LITRES OF WATER**

VIGGA families have reduced CO_2 emissions by **7 TONNES** by sharing clothes

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INDUSTRIAL SYMBIOSIS

An industrial symbiosis is a collaboration about resources, where one company's production waste becomes a valuable resource and raw material for another company, ultimately benefiting both partner's economy and the environment

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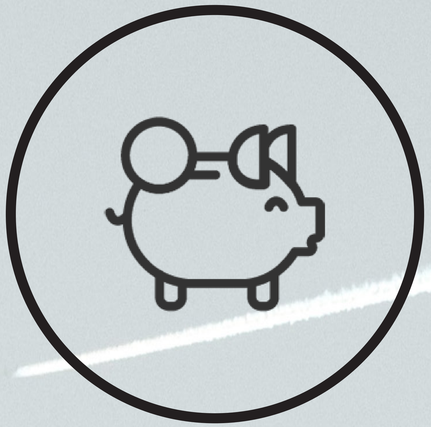
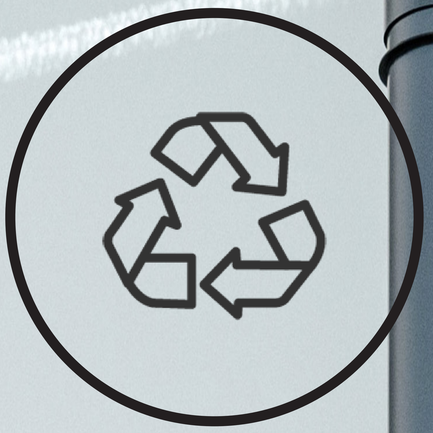
INDUSTRIAL SYMBIOSIS

Facts about production



More than half and as much as **70%** of companies total production costs are spent on purchase of materials while salaries are **25-30%**

At the same time, companies experience that raw materials are becoming more **SCARCE** and that prices **FLUCTUATE**



The potential to reuse waste in companies in the capital region of Denmark amounts to **£16-50 MILL.** per year

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INDUSTRIAL SYMBIOSIS

Kalundborg Industrial Symbiosis | **What is it?**

Collaboration between 8 organisations about resources since 1961

○

Unique Public-Private Partnership

○

Almost 30 wastestreams are exchanged among partners

○

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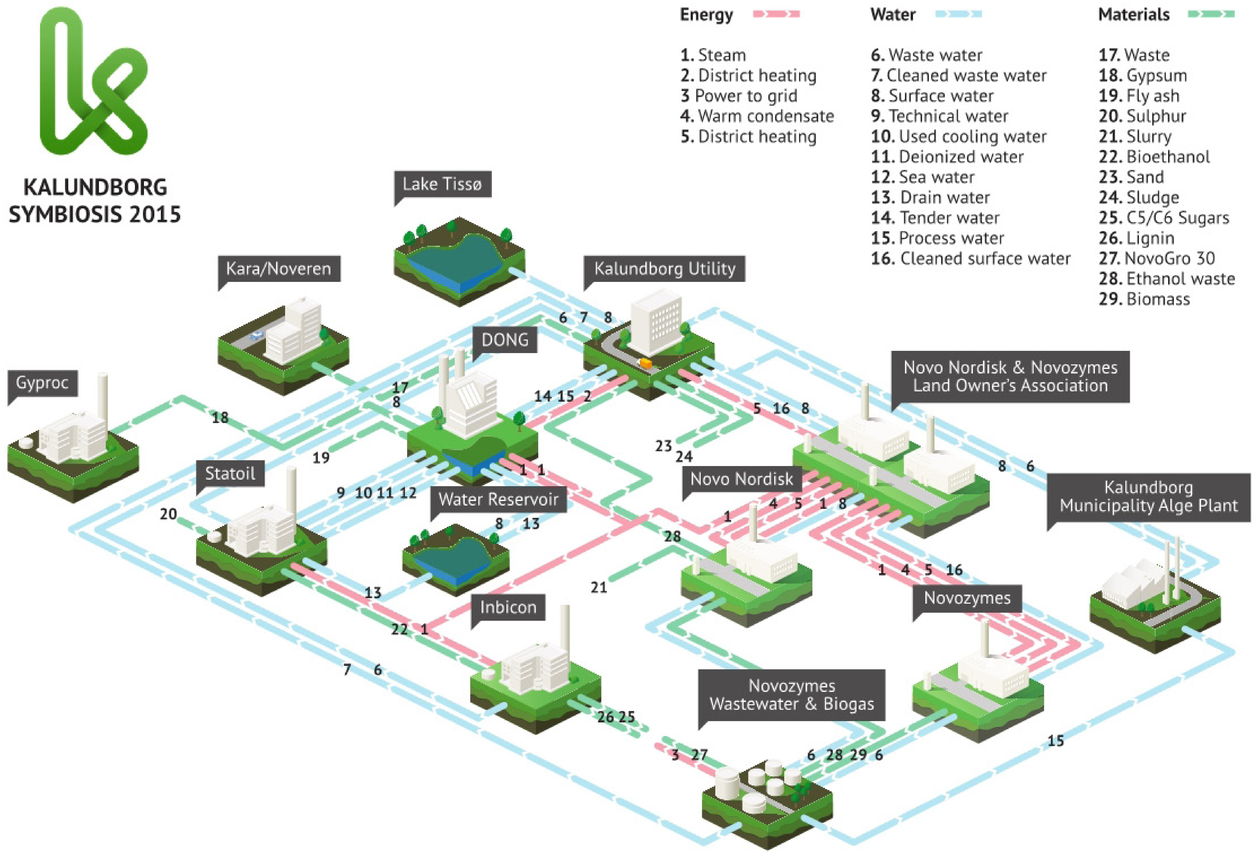
INDUSTRIAL SYMBIOSIS

Kalundborg Industrial Symbiosis | **Business model**



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INDUSTRIAL SYMBIOSIS

Kalundborg Industrial Symbiosis | **Results**

An estimated yearly reduction of **275.000 TONNES CO_2** per year

More than **3.000 PEOPLE** are employed among the companies

Savings of resources such as natural gypsum amounts to **APP. 100.000 TONNES**

Numbers from 2008 show yearly water-savings of **3 MILL. M3**

2 of these 3 mill. m3 are groundwater.

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INDUSTRIAL SYMBIOSIS

Beyond Coffee | **What is it?**

Started in 2015

8 employees today

Turns organic coffee grounds into editable organic oyster mushrooms

Current production farm in Copenhagen and looking to expand

Coffeegrounds: Danes drink app. 20 mill. cups of coffee a day. 99,8% of the nutrients from coffee goes into the wastebins for incineration

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INDUSTRIAL SYMBIOSIS

Beyond Coffee | **Business model**

Pick up 1 ton of coffeegrounds per month to the production site by cargobike

Coffee comes primarily from Copenhagen University, the National Board of Health and several restaurants and cafees

Per ton of coffee grounds Beyond Coffee farm 200 kilos of mushrooms

Mushrooms are sold to restaurants in Copenhagen and are sold from their store

Looking to close even more cycles:

- Coffee grounds from a local cafe is sent to Beyond Coffee, grounds are sent to an insect farm to become feed for crickets and onto TagTomat for nutrients to the soil.
- ”Growing-sets” are sold in the stores for citizens to grow their own mushrooms out of coffee grounds at home.

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UPCYCLING

A process of converting materials into new materials of higher quality and increased functionality

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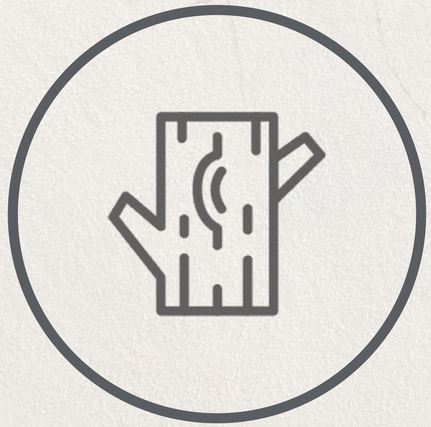
UPCYCLING

Facts about the built environment

1/3 of the total waste production in Denmark comes from the built environment, app. **4,1 MILL. TONNES** annually



40 % of the worlds raw materials are consumed by the building industry

The built environment accounts for app. **40%** of the total energy consumption

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UPCYCLING

RGS Nordic | **What is it?**

RGS Nordic is a company specialised in treatment of polluted soil, industrial wastewater and waste from the building industry

They have 35 facilities that receive more than 1 million tonnes of waste from the built environment

One of the largest waste handling companies in Denmark and present in Sweden and Norway

App. 230 employees

Discovering potentials in the circular economy, upcycling instead of downcycling

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UPCYCLING

RGS Nordic | **Upcycling business model**

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REUSE AND REPAIR

Reusing and repariring end-of-life products to recapture value

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REUSE AND REPAIR

Facts about electronics

1 OUT OF 4 electronic products that citizens discard as waste in Denmark still works

81.000 TONNES of electronic waste is generated each year in Denmark

Electronics is the **FASTEST GROWING** waste-fraction globally

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PRODUCT LIFE EXTENSION

Bluecity | **What is it?**

In 2014 Bluecity moved into the old Blockbuster stores with the concept of trading used consumer electronics, movies and games

The revenue on movies and games disappeared faster than anticipated which resulted in 7 closed stores by 2015

Today Bluecity is only trading consumer electronics and has 5 open stores

£258.000 in profit second year of accounting (2017)

PRODUCT LIFE EXTENSION

Bluecity | Business model

Customers come to the local store with their used electronics

A price is estimated by Bluecity, the client can choose to offer of decline

Bluecity purchases the product and gains full ownership

Bluecity cleans and resets all data on the devices

Re-sells the product in their stores

PRODUCT LIFE EXTENSION

Tier1asset | **What is it?**

Established in 2001

An IT company, which buys, cleans and re-sells IT equipment

Does business with large companies worldwide, for example Deloitte and PwC

PRODUCT LIFE EXTENSION

Tier1asset | **Business model**

Processes more than 200.000 units annually

Has more than 4000 m² production and warehouse facilities

One order was 14.000 units of 3 year old computers

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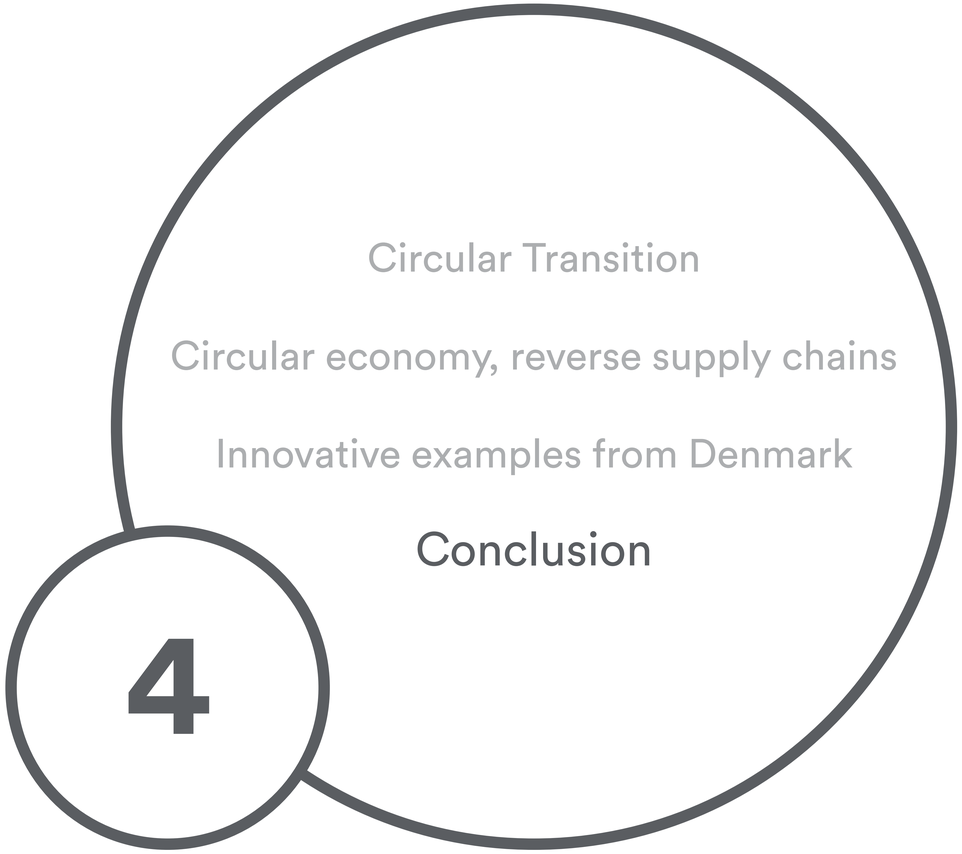

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START YOUR JOURNEY

With five operational questions

- How can we design products and close loops at the same time?
- How can we reduce waste through production?
- How can we develop a business model that strengthen our position in the value chain?
- What kind of new partnerships do we need?
- How do we accommodate and collaborate with our customers?

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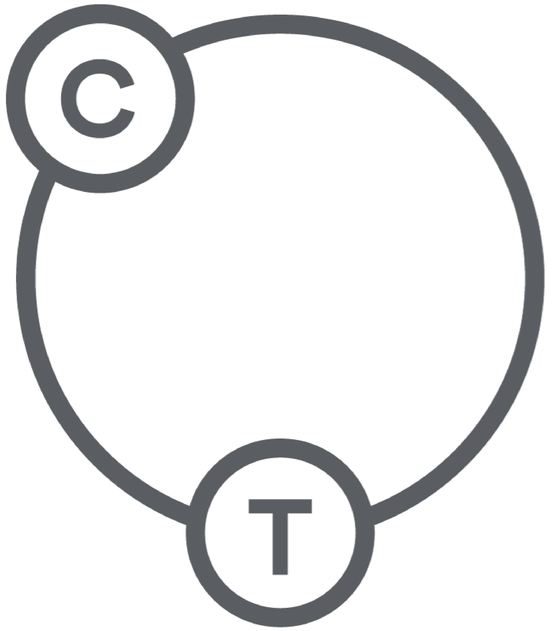

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