

Cinderella Eco Group

«from private to public»

En historie om bærekraftig
forretningsmodellering

Ragna Brenne Bjerkeset
Prosessleder, ProtoMore AS

- NÆRINGS- OG SAMFUNNSUTVIKLING
- PROSESSLEDELSE
- INNOVASJON – BM DESIGN
- DESIGN THINKING
- FASILITERING



LAB



LAB

Hvem er vi?

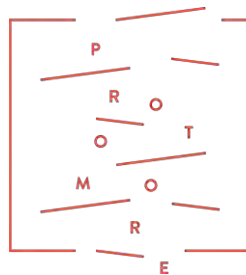


- Tverriindustriell klynge
- Bedriftssamarbeid
- Anvendt digital innsikt
- Delingskultur

PROTOMORE

STARTUP

- Gründere
- Rådgivning
- Kapital
- Samlokalisering



LAB

- Fasilitere innovasjonsprosesser
- Innovasjonsmetodikk og forretningsmodellering
- Raskere fra idé til marked



Cinderella®
INCINERATION TOILETS



When nature calls

Cinderella Eco Group (CEG)

Cinderella Eco Group leverer toaletter med forbrenningsteknologi for vannløse toaletter med et miljøvennlig fotavtrykk som kan installeres uavhengig av infrastruktur. Toalettet forbrenner alt avfall og etterlater bare aske helt fri for patogene bakterier.

Dagens bevisste sluttbrukere velger toalettet. “When nature calls”

For tiden tilgjengelig i Norden, Europa, Canada og Australia i privatmarkedet (hytte/hus, bobil, caravan) og lett industriell bruk.



Utfordringen

Etterspørselen etter og behovet for å løse utfordringen med å håndtere «toalettavfall» ute i det offentlige rom og naturen er stort, en miljømessig stor utfordring.

Cinderella Eco Group grep denne utfordringen og er midt i en innovasjonsprosess med å tilrettelegge for og utvikle en bærekraftig forretningsmodell for å bringe produktet/tjenesten «from private to public».

Prosessene fasiliteres av ProtoMore Kunnskapspark.

Sustainability challenge: De-centralized Service and Aftermarket

How might a cost-efficient de-centralized service solution be designed? How can such a model be scaled up to be the go-to system that each new market should follow?

Today, Cinderella Eco Group's (CEG) business model entails three parts: the dealer, the service technician and the end user. A Cinderella-consumer never buys direct from CEG; however, the aftermarket service is often conducted by Cinderella's employees in Oslo where the consumer in many cases will dismantle and deliver their toilet personally. The daily, weekly and annual maintenance is handled with ease by the consumer, **but every five years, a more thorough service needs to be conducted by Cinderella's aftermarket personnel.**

Taking advantage of end-consumer product ownership retention and long shelf-life to incentivize increase in sustainable resource productivity along the whole life cycle:

- Create a modularized toilet model that makes upgrade of parts sustainable and easy
- Prolong life-span, minimizing waste while introducing new product lines
- Reduced energy consumption
- Establish business partnerships to enable Cinderellas entry into new markets



CEG started this process by understanding human behavior and needs, using **design thinking** as an innovation method. This process led to an understanding of the challenges that must be solved to enhance the sustainable impact CEG might have to solve worldwide problems; "Cinderella from private to public"

The company **purpose** is based on evaluation of the triple bottom line.

Primary focus on **SDG no 3 Good health and wellbeing** and **no 6 Clean water and sanitation**



Different circular alternatives were addressed by working with



which led to the next possibility
«Waste as a service»

The sustainability efforts will be addressed at different levels;

- Continuous product development to adapt the Cinderella to new markets demanding capacity and energy optimization
 - Design for intuitive user instructions that can also enable a non-Cinderella owner to use the toilet correctly
 - Develop a sustainable circular business model
 - Reduce CO2 footprint and increase efficiency gains
- Communicated and implemented;**
- A service partner network of independent sales and service technicians as one combined partnership.
 - This entails onsite training as well as digital access to service manuals, videos and components.
 - The expected outcomes from a new form of partnership will focus on sustainability, code of conduct resulting in a responsible business partnership.

By solving the challenges CEG now consecutively is working on, CEG will make both environmental, social & economic impacts.



The Golden Circle

– hva, hvordan, hvorfor

Hva

Vi leverer verdens mest bærekraftige og innovative toaletter

Hvordan

Vi leverer gjennom å være pålitelige, praktiske og miljøbevisste

Hvorfor

Med vår forbrenningsteknologi tilbyr vi vannfrie toaletter og sikre sanitærforhold som gjør oss til det globale markedets førstevalg

Vår TRIPLE BOTTOM LINE

Evaluering av resultatene våre i et bredere perspektiv for å skape større forretningsverdi og samfunnseffekt



Den triple bunnlinjen:

- Sosiale og miljømessige hensyn i tillegg til omsetning
- I stedet for én bunnlinje, er det tre:
 - Samfunnet
 - Miljøet
 - Vår fortjeneste
- Kunder, ansatte og myndigheter forventer at selskaper tar ansvar for bærekraftig utvikling
- 66 % av forbrukerne sier at selskaper med en tydelig bærekraftsprofil påvirker valgene deres *

* Sustainable Brand Index 2019

Sustainable Development Goals



Sikre sunn helse og fremme trivsel for alle i alle aldre; sikre vaksiner og vern mot smittefarer

Sikre tilgjengelighet og bærekraftig forvaltning av vann og sanitærforhold for alle; sikre kvinners trygghet og utdanning

«The beginnings»

The innovation process leading to new sustainable
business models



Samhandling skaper innovasjon

Prosjekt: Ta Cinderella ut av hytta og inn i naturen

Trude B-J Margel
Chief Communications Officer
Cinderella Eco Group

Foto: Ragna Brenne Bjerkeset

Etablere nye brukervaner



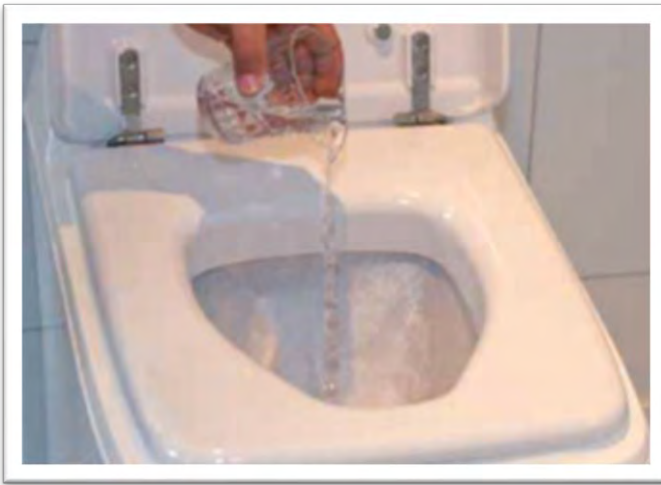
STEG 1: Åpne lokket og sitteringen.



STEG 2: Sett filteret i skålen. Et nytt filter skal anvendes ved hvert besøk.



STEG 3: Legg ned sitteringen. Toalettet er klart til bruk.



STEG 4: Vekten av avfallet i filteret sørger for at det slippes ned til forbrenning.



STEG 5: Lukk igjen lokket.



STEG 6: Trykk på knappen.





Foto: Jonas Halberg Eggen, Inventas

When nature calls



Foto: Torvald Hjelden Sætrang, Midsundingen

“

Å sørge for at vi har rene og attraktive turstier fordrer at vi har bærekraftige toaletter.

Det viser ikke bare respekt for naturen vår, men vil tiltrekke fjellentusiaster fra hele verden.

Kolbjørn Stølen

«Understanding behavior and needs»

«Protomoremetoden»

Design Thinking og Innovasjon

INVITASJON TIL WORKSHOP

Cinderella Eco Group inviterer til en spennende workshop som skal legge grunnlaget for å utvikle nye løsninger i nytt marked.

Dato: 6. mai 2019
Britvegen 4 - 1. etasje
9:30-15:30

Bakgrunn
Cinderella forbrenningstoalett løser mange utfordringer med sine miljøvennlige forbrenningssystemer, med bare aske som sluttprodukt. Det er store behov for miljøvennlige toalettløsninger framover, på steder som ikke har tilgang på strøm, der folk samles, ved turstier.... Mulighetene er mange, og Cinderella Eco Group har blitt utfordret til å jobbe fram en løsning der Cinderella forbrenningstoalett nå bokstavelig talt skal «tas ut av hytte, hus og campingbill»

Hva, hvor, når og hvordan?
Vi ønsker å invitere deg til workshop fordi nettopp din kompetanse er verdifull for at vi skal lykkes med dette prosjektet. Workshopen er bygget opp med bakgrunn i metodikken Design Thinking utviklet ved Stanford University i California USA. ProtoMore Kunnskapspark har god erfaring med denne metodikken og skal lede oss gjennom ulike praktiske oppgaver/øvelser på en variert og morsom måte. Hovedmålet med workshopen er å utarbeide så konkrete konsepter som mulig for å løse behovene.

ProtoMore fasilitator

Kontakt:
ragna@protomore.no
Mob: 95252352
Ragna Brenne Bjerkeset

Cinderella

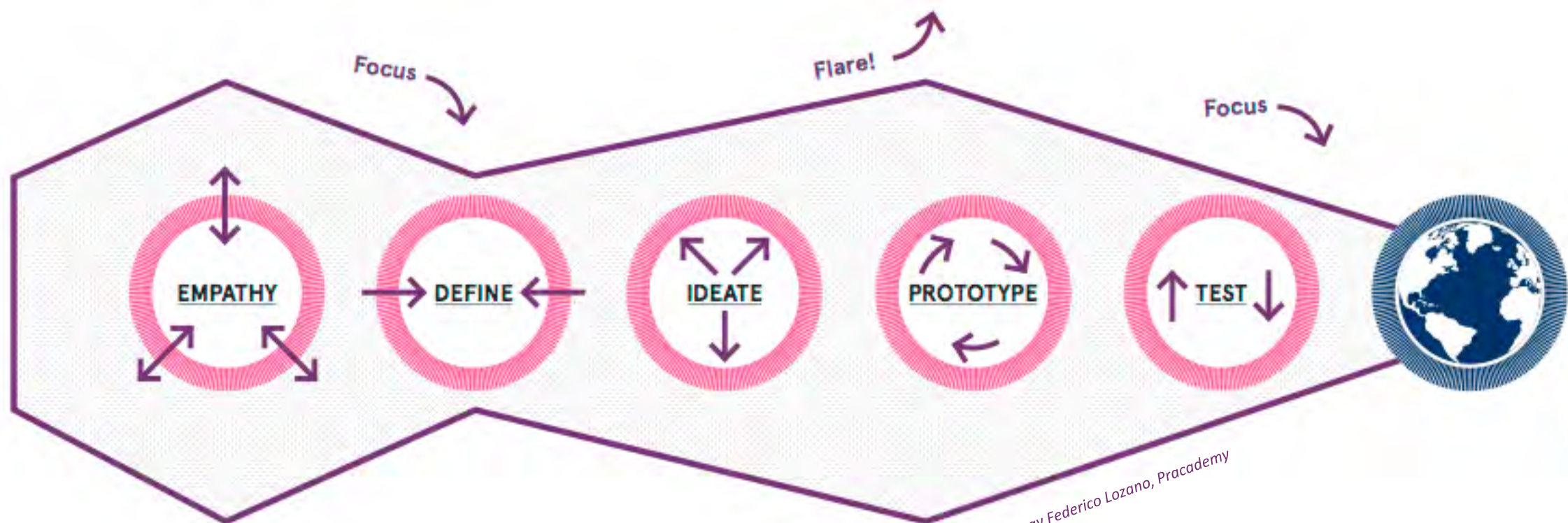
PROTOMORE







The Design Thinking process

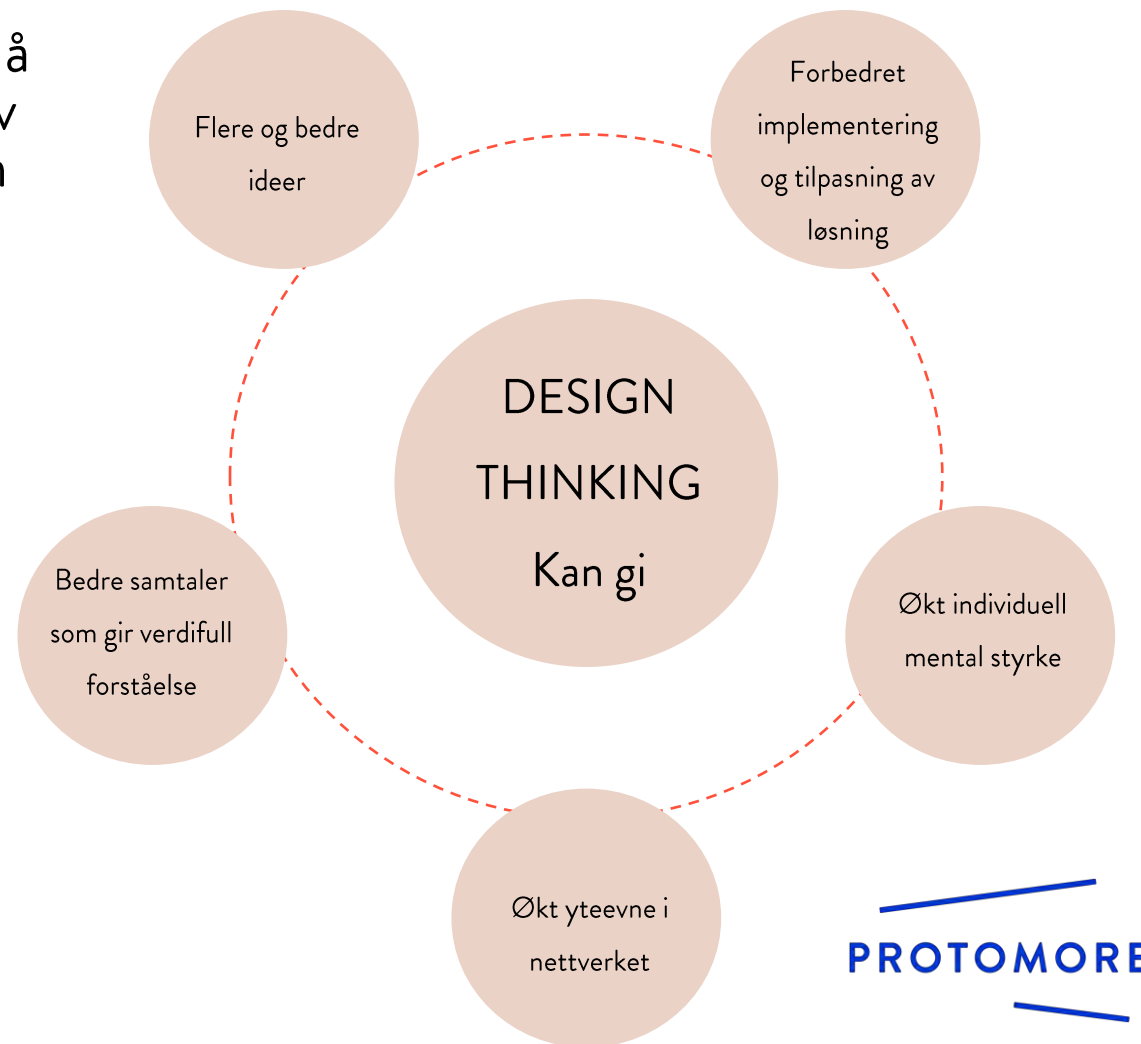


Figur lånt av Federico Lozano, Pracademy

Effekten av Innovasjon ved Design Thinking

DT er en *sosial* teknologi. Metodikken kan bidra til å løse komplekse problemstillinger ved en blanding av verktøy og brukerinnsett/kundeforståelse brukt i en arbeidsprosess.

Effekten/avkastning (ROI ved bruk av DT) er



Hvorfor virker Design Thinking?

Har potensiale til hente ut folks kreativitet, skape «commitment» og radikalt forbedre prosesser.

Harvard Business Review

Innovation | Why Design Thinking Works

INNOVATION

Why Design Thinking Works

by Jeanne Liedtka

From the September–October 2018 Issue

Summary Save Share Comment 12 Print \$8.95 Buy Copies

Occasionally, a new way of organizing work leads to extraordinary improvements. Total quality management did that in manufacturing in the 1980s by combining a set of tools—kanban cards, quality circles, and so on—with the insight that people on the shop floor could do much higher level work than they usually were asked to. That blend of tools and insight, applied to a work process, can be thought of as a *social technology*.

<https://hbr.org/2018/09/why-design-thinking-works>



Professor Jeanne Liedtka, Universitet i Virginia

PROTOMORE

Brukerintervjuer i Midsundtrappene

323 intervjuer



Hva gir optimal turopplevelse?

- Tilrettelegging viktig!
- Turfølge - Utsikt - info om turen - turtøy
- Nysgjerrighet rundt Midsundtrappene – kunstverket/byggverket
- Hvileplasser med utsikt underveis

Hva gjør du når naturen kaller?

- Ordner seg i naturen
- De fleste går på do på fergene eller andre fasiliteter
- Nesten 20 % mener at det er stort behov for et tilbud. Størst betydning for damene, ved lengre turer er behovet større
- Bred enighet om at tilrettelegging for toalett må komme
- Plassering: Nede ved parkeringen v/turstart

Foto: Kolbjørn Stølen

Test av prototypen



Generelt positive til skisserte løsninger

- Opptatt av brukervennlighet
- Hva med språket?
- Hva med mulighet for å vaske seg?

Hva betyr ordet Bærekraft for deg?

- Balanse – tålegrense
- Turfolk er stort sett folk med sunne holdninger til søppel osv.

Betalingsvilje.

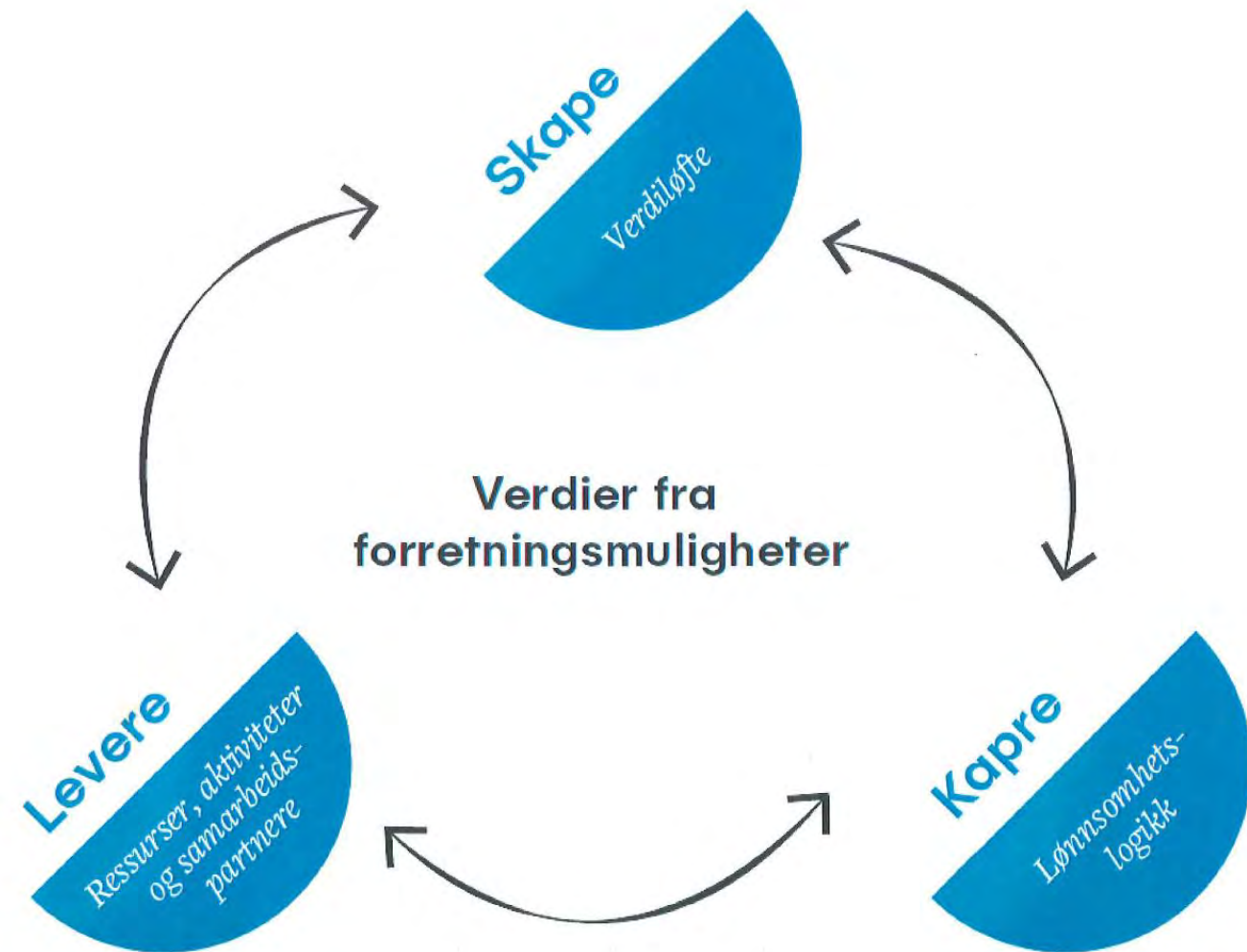
- Forståelse for at det koster å opprettholde/ta vare på
- Villige til å betale for toalettet, spesielt damene
- 50 kr ikke noe problem

Hva forteller funnene oss?

Behovet og viljen er der

Men hvordan tar vi neste steg?

- Hvilke elementer skal vi tilegne en ny forretningsmodell?
- Hvilke brukere henvender vi oss til?
- Hvordan skal vi selge den?
- Hva og hvordan skal vi ta betalt?
- Hvem skal vi samarbeide med?



Jørgensen og Pedersen

Vi må forstå brukeradferden



«From private to public»



PROTOMCORE

DIP-prosjekt
inventas

SIVA Forretningsmessig innovasjon



"Waste as a service"
Samarbeidspartnere
Forretningsmodeller



Organisatoriske løsninger
Betalingsmodell
Markedssegmentering

Beslutningsgrunnlag
- Forretningsplan



Cinderella[®]
FORBRENNINGSTOALETTER

Forprosjekt Innovasjon Norge Felttesting Midsundtrappene



Fase 1
Design detaljering
Kommunikasjon
Oppføring av bygg
Drift av konsept



Fase 2
Testgjennomføring av:
- brukeradferd
- samarbeidspartnere
og servicekonsept
- identifisere muligheter
for smart monitorering

Beslutningsgrunnlag
- Konseptverifisering
- Teknologibehov
- Servicekonsept



Hovedprosjekt

Strategisk mål:
"Private to Public"
Løse overordnede
bærekraftutfordringer.

Ny forretningsmodell
- samarbeidspartnere
- markedsplan

Teknisk detaljering av
- forbrenningskammer
- smart monitorering



Hvordan kan forretningsmodellen for fremtidige Cinderella Eco Group se ut?

- Hva er annerledes? (kundegrupper, relasjoner, produkt/tjeneste)
- Hvilke sirkulære initiativ kan Cinderella Eco Group utvikle?

Sirkulære mulighetsområder

- Leveransejede
- Delingsplattform
- Produkt som tjeneste
- Produktlevetid
- Gjenvinning - oppsirkulering

Circular Economy Business Models

Reform use of resources



CIRCULAR SUPPLY CHAIN

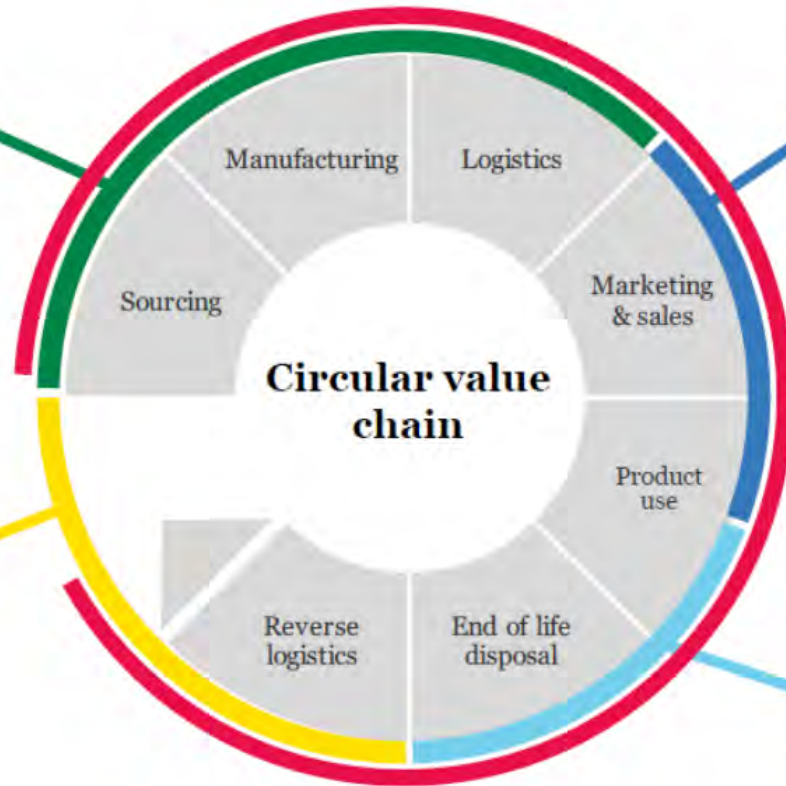
Use of renewable energy, bio-based or potentially completely recyclable materials

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

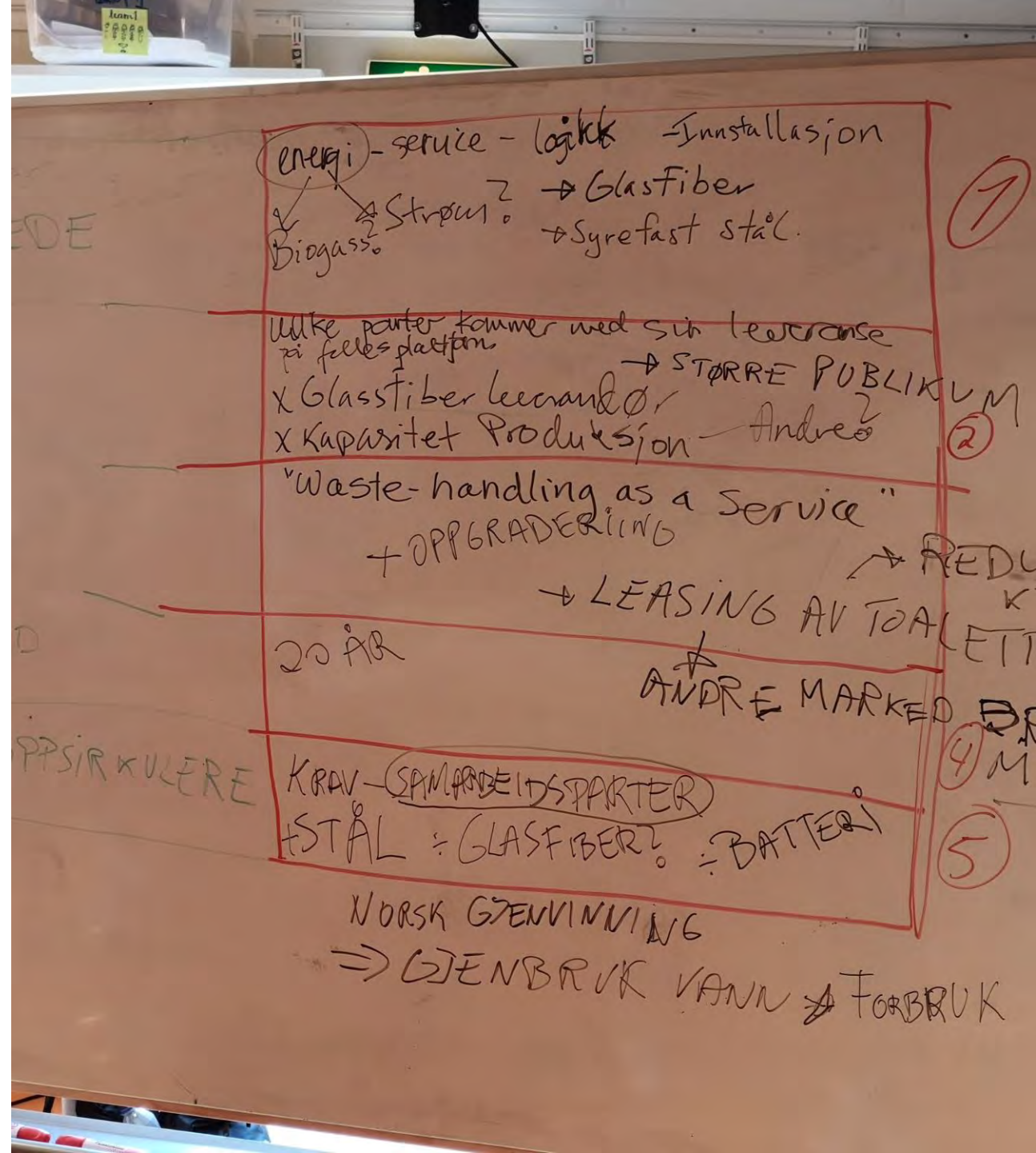
Extend life cycles



PRODUCT LIFE EXTENSION

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

Hvilke sirkulære initiativ kan Cinderella utvikle?



Business model

Sub-model



Circular Supply Chain



Build to last



Circular supplies



Sharing Platform



Share



Product as a service



Product as a service



Performance as a service



Product Life-extension



Repair & Maintain



Upgrade



Resell



Remanufacture



Recovery & Recycling



Recycle / upcycle



Return

- ✓ ENERGI – biogass/strøm
- ✓ Servicelogikk og partnere (fra installasjon til oppfølging)
- ✓ Bærekraft/ i råvarene glassfiber og syrefast stål?

- ✓ Glassfiberprodusent – 20 % kapasitetsutnyttelse
- ✓ Egen produksjon – overkapasitet som andre kan bruke?
- ✓ Selve løsningen (toalettet) gjøres tilgjengelig for større publikum

- ✓ **«WASTE HANDLING AS A SERVICE»**
- ✓ Tilby oppgradering av eldre modeller
- ✓ Leie vs. kjøpe toalettløsninger – redusere kjøpsterskel

- ✓ Solid bygd i dag – 20 års levetid
- ✓ Leiemodell kan åpne nytt bruktmarked/ gi oppgraderingsmulighet?

- ✓ Krav til nye og flere samarbeidspartnere for å få til noe her
- ✓ Gjenvinne stål – nye produkt
- ✓ Vann – i et «gjenvinningsperspektiv»
- ✓ Utfordring med gjenvinning av glassfiber dagens batteri?

«Waste as a service»

Sustainability challenge: De-centralized Service and Aftermarket

How might a cost-efficient de-centralized service solution be designed?

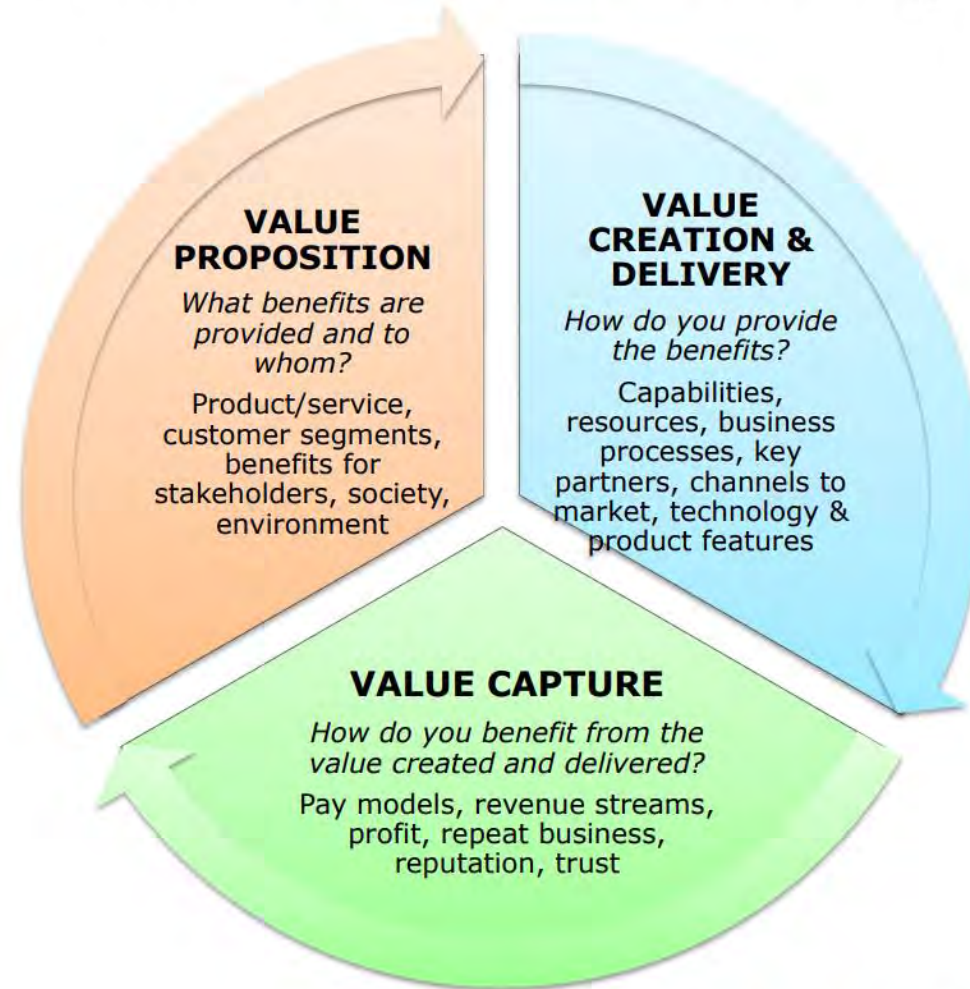
How can such a model be scaled up to be the go-to system that each new market should follow?

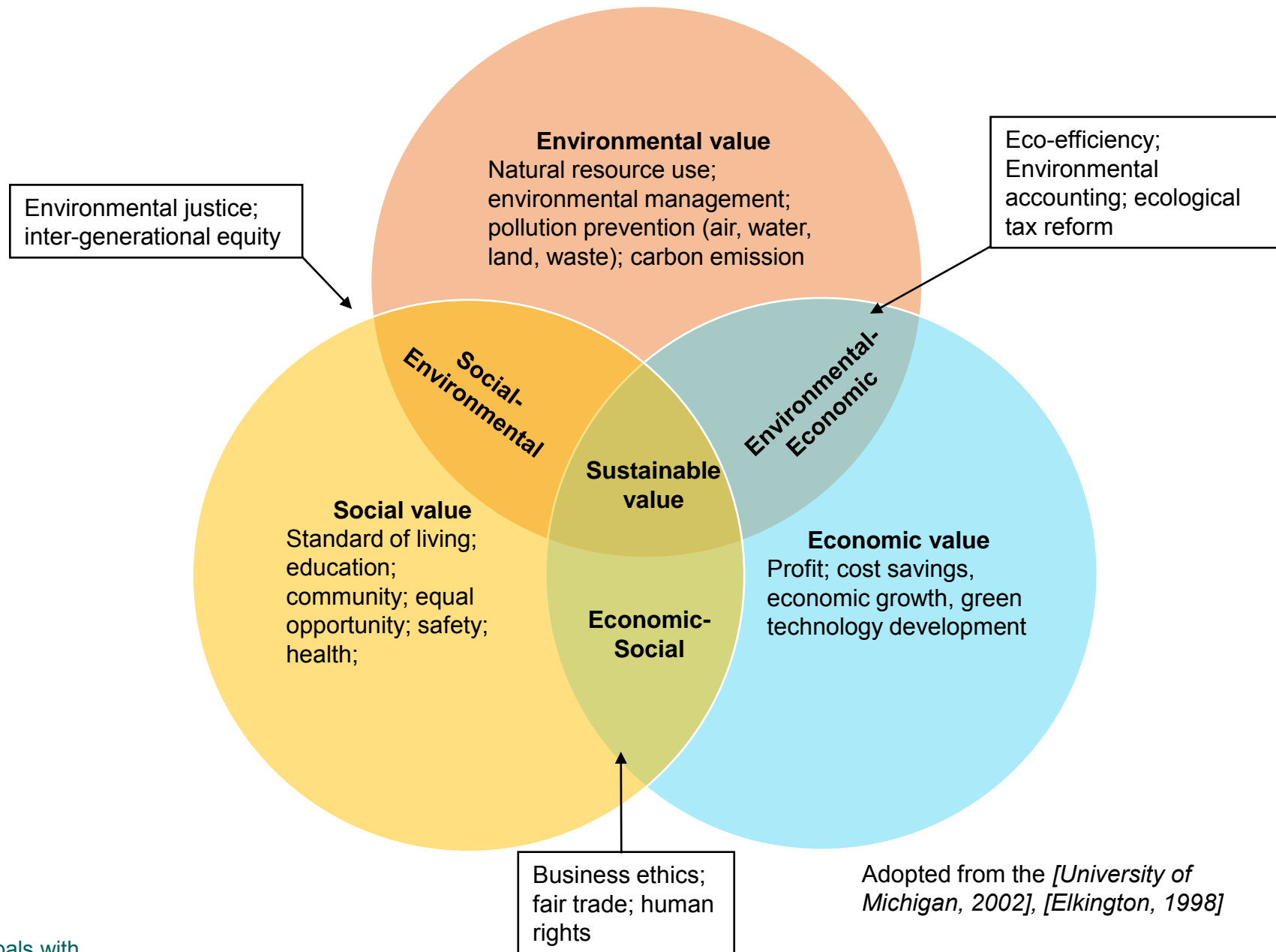
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Business Model Thinking





RANKING.

EASY IMBENT

4	3
1	1
5	7
6	4
2	6
4	5
3	2

DIFICULT.

1 2 3 4 5 6 7 ...

1	SC						
2		RC					
3						DC	
4					SM		
5			BT				
6	MD						
7				ND			

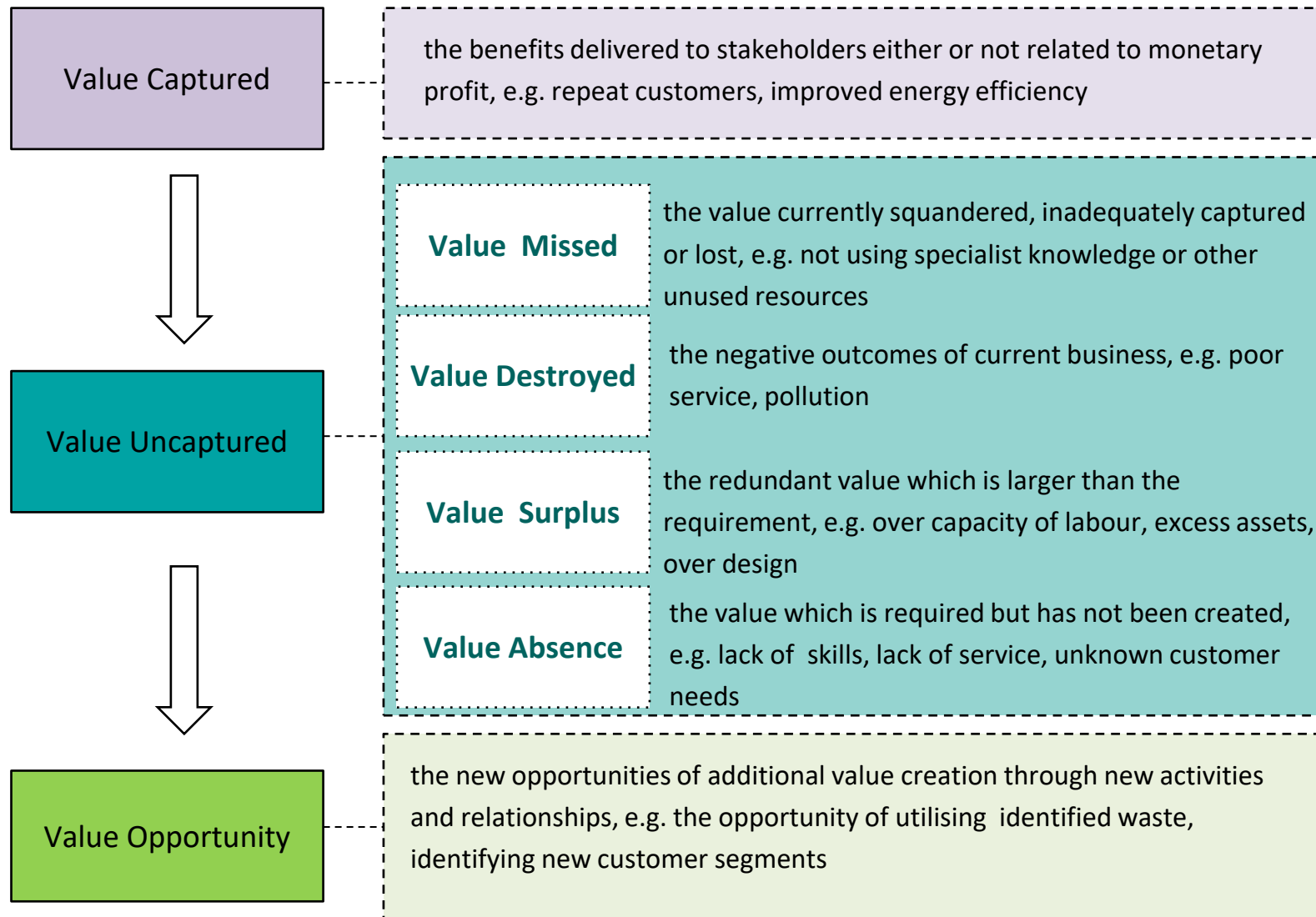
1
2
3
4
5
6
7



- 1: Make us of data in order to improve customer ex. **DC**
- 2: CEG's use iteration tech to build smart cities **SC**
- 3: New kind of dealer = "franchise" **MD**
- 4: Mod. based design **MD**
- 5: User big data - value **BT**
- 6: Recycle heat or components **RC**
- 7: Reuse - second hand market - pantecordning **SM**

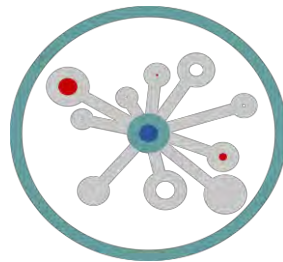
OMORE

Structured approach to value



Cambridge Method for Value Generation Tools

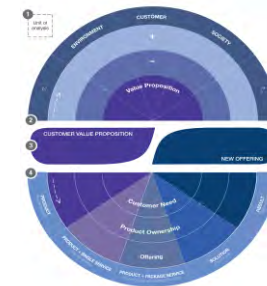
Business Network
Build, analyse and prioritize
Your stakeholder map



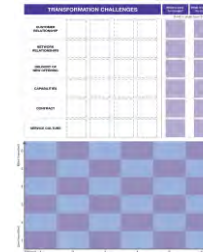
Service Value Analysis
Find business opportunities in the customer experience



Business Model Design
Create value propositions for key stakeholders & innovate the offer



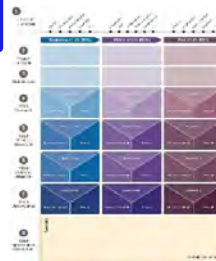
Transformation Challenges
Discover quick wins and uncover barriers



Change Readiness
Find change triggers and highlight risks



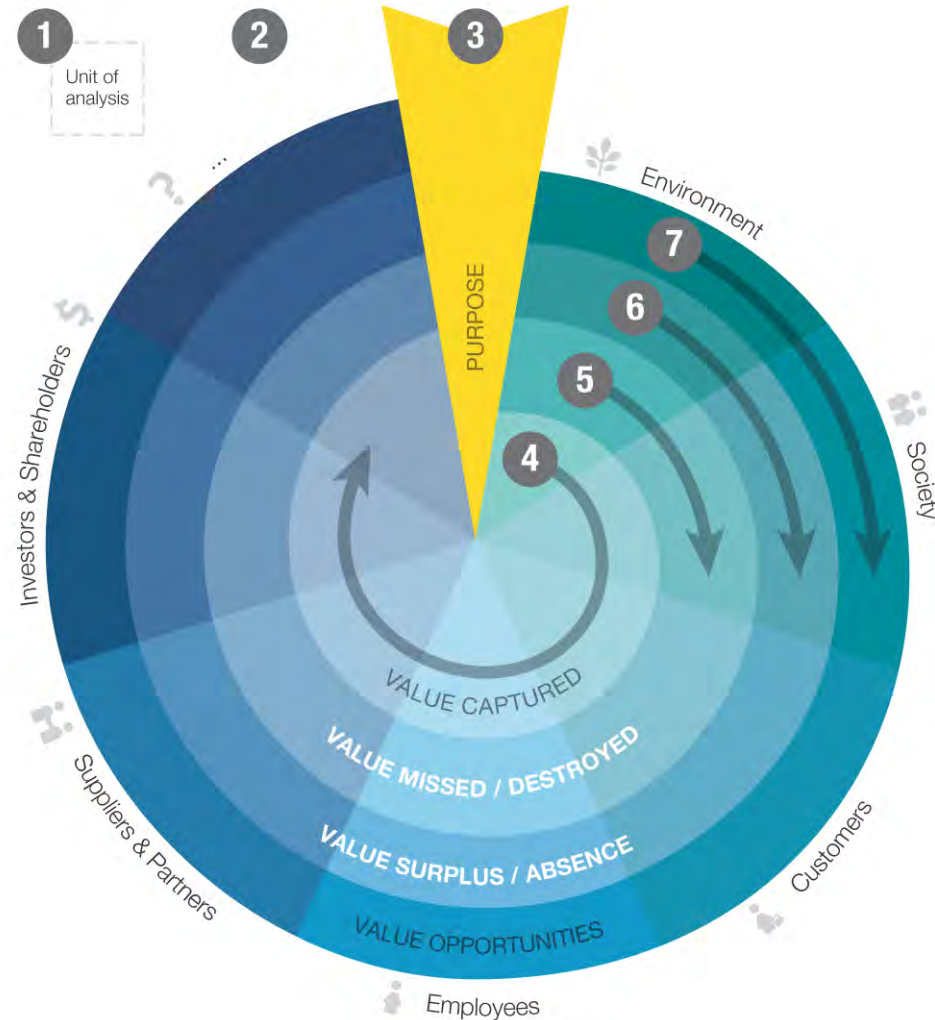
Product Value Analysis
Find business opportunities across linear & circular life cycles



Action Plan
Turn your insight in to actions for effective implementation

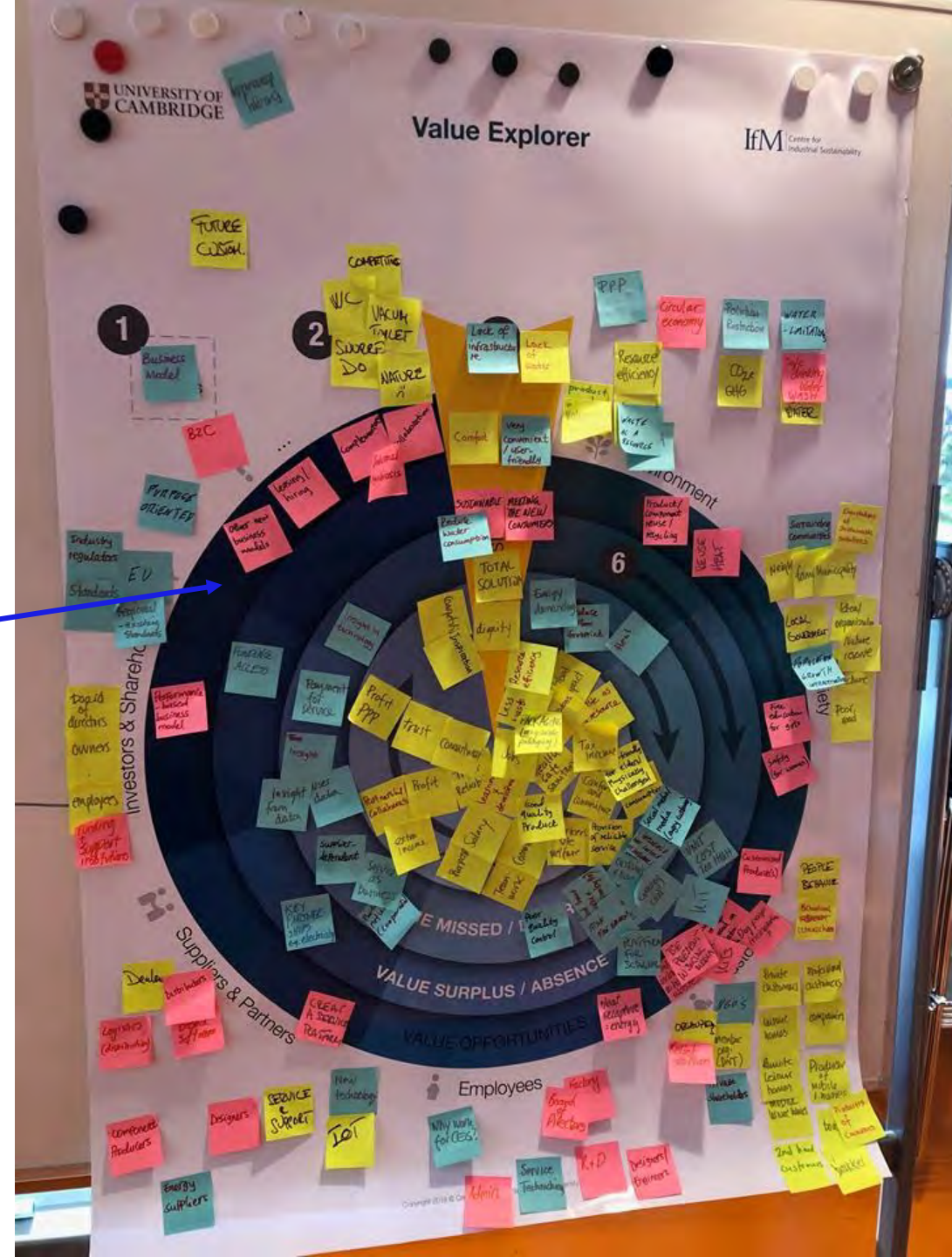


Value Explorer

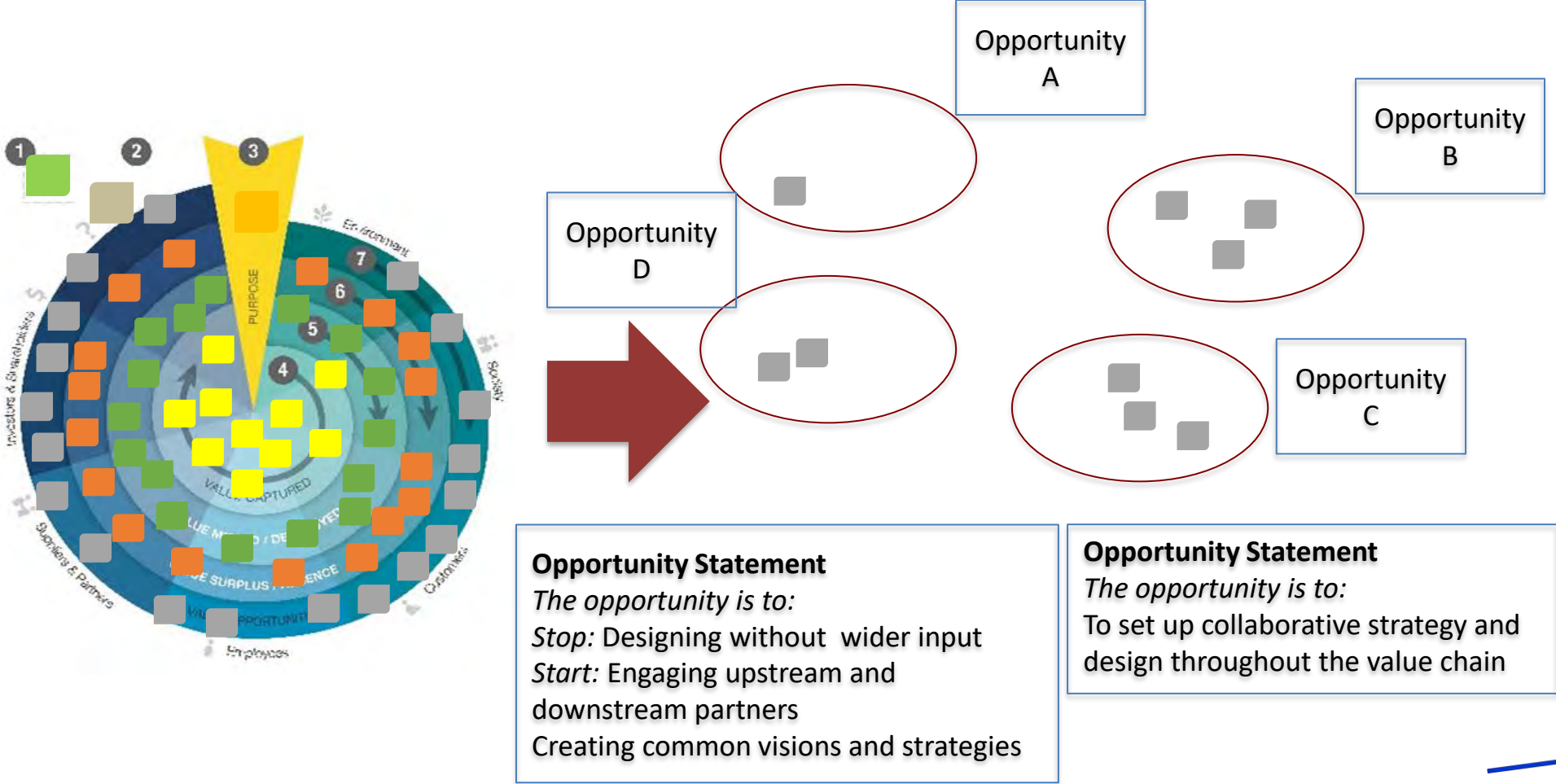


Etter ei arbeidsøkt

Identifiserte nye muligheter

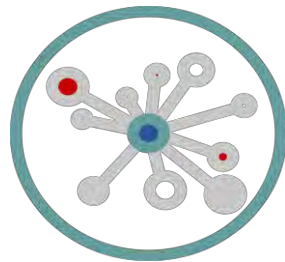


Strukturer, samle mulighetene

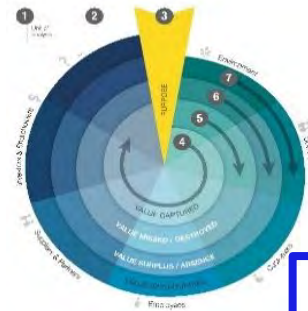


Cambridge Method for Value Generation Tools

Business Network
Build, analyse and prioritize
Your stakeholder map



Value Explorer
Explore Value in your eco-system &
find new business opportunities



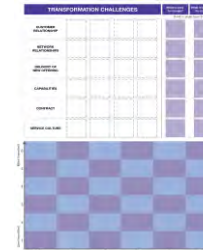
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Transformation Challenges
Discover quick wins and
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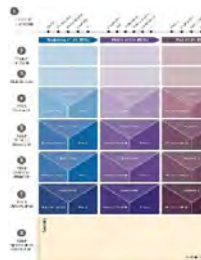


Change Readiness
Find change triggers
and highlight risks



Action Plan
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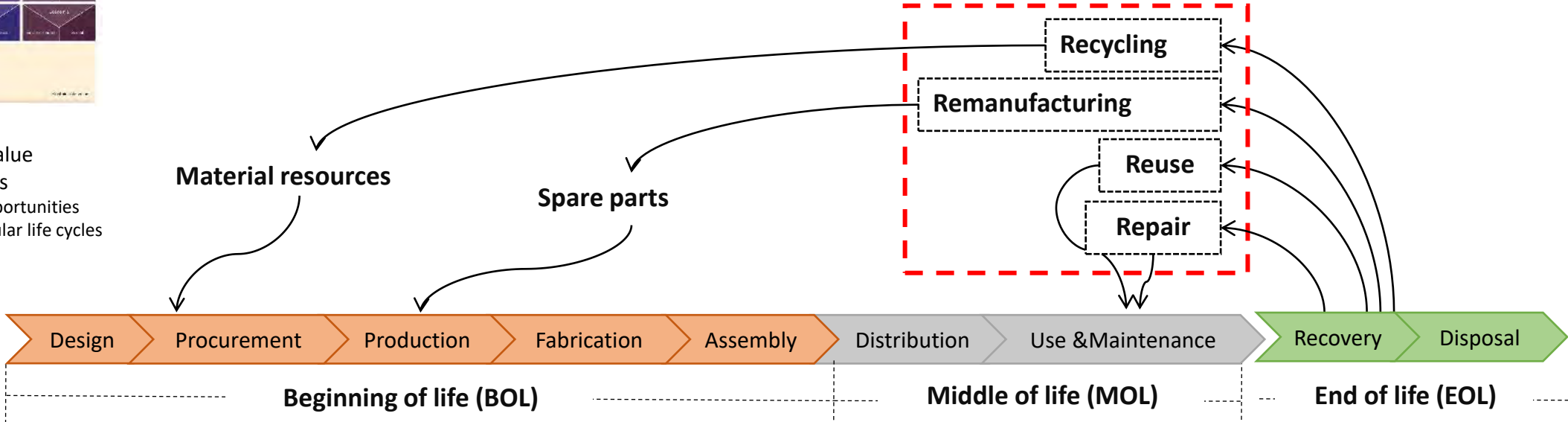
Product Value Analysis
Find business opportunities
across linear & circular life cycles



Hvor kan tapte verdier identificeres?



Product Value Analysis
Find business opportunities across linear & circular life cycles

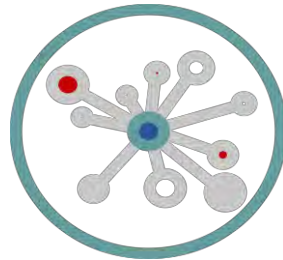


Adapted from Jun et al. (2007)

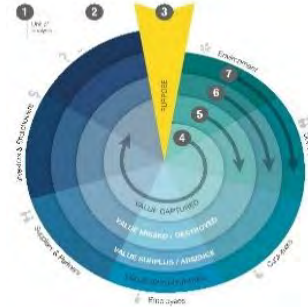


Cambridge Method for Value Generation Tools

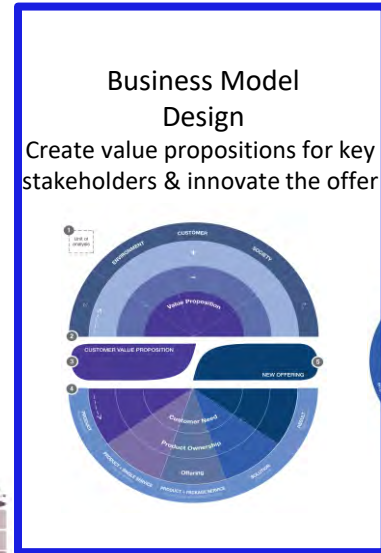
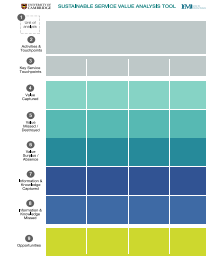
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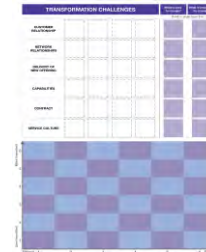
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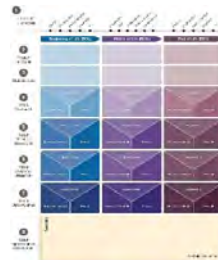
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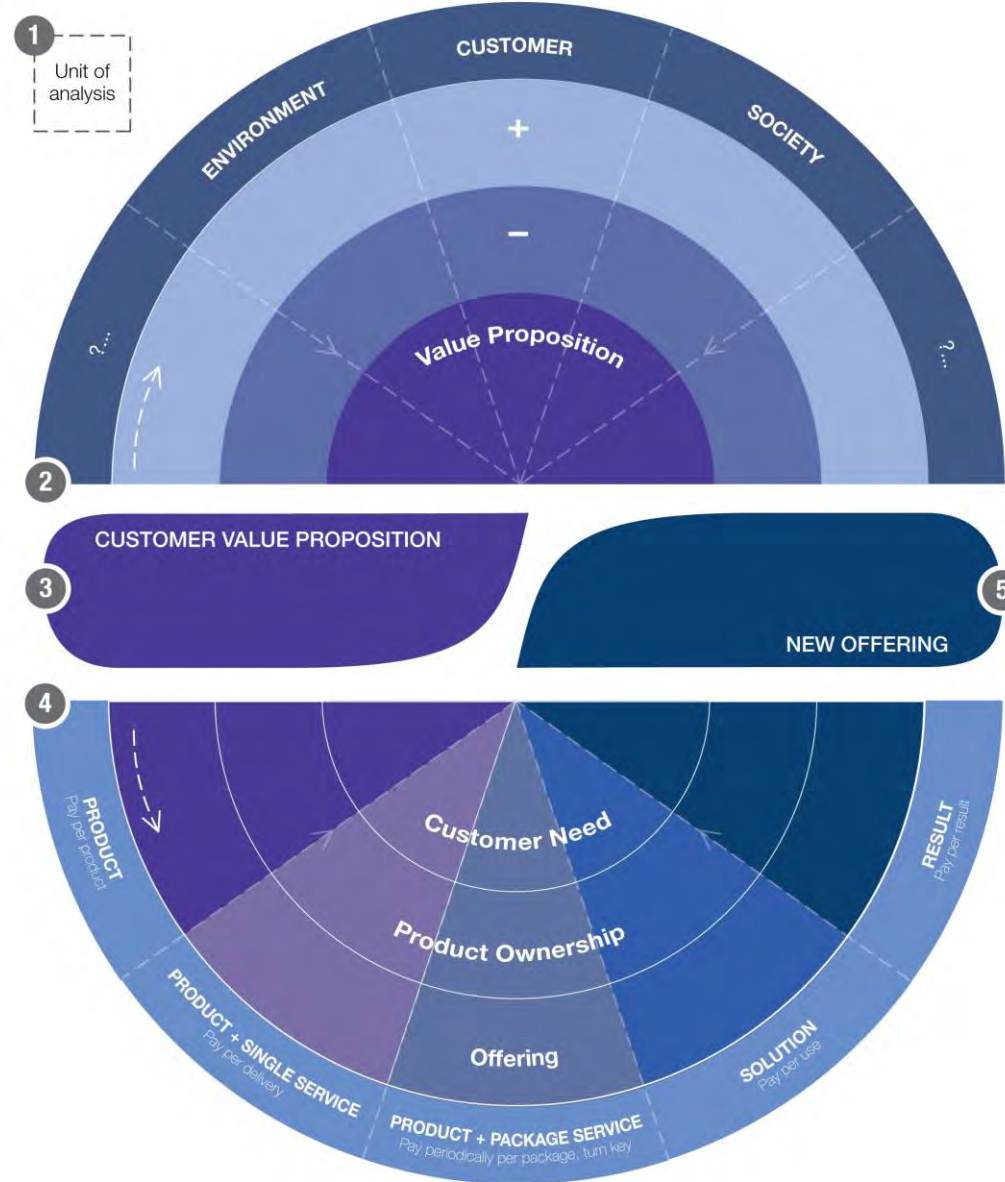
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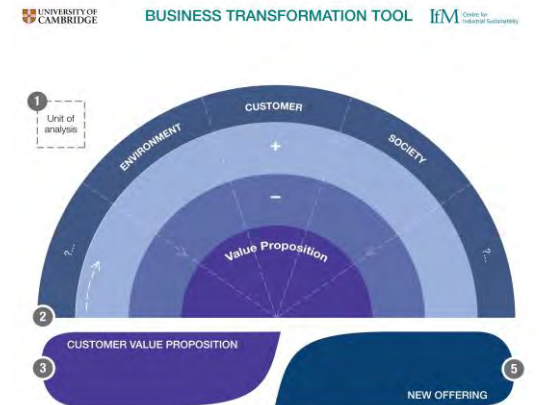
Action Plan
Turn your insight in to actions
for effective implementation



Unit of analysis

Cinderella Tursti er en løsning som skal dekke behov for toalett nær ferdselsårer og i det offentlige rom, der tilgang på strøm og vann er begrenset og tilgangen til brukerinformasjon ikke knyttes opp mot eier av toalettet men en ukjent bruker.

Analysen skal ta utgangspunkt i at tilbudet utvikles til



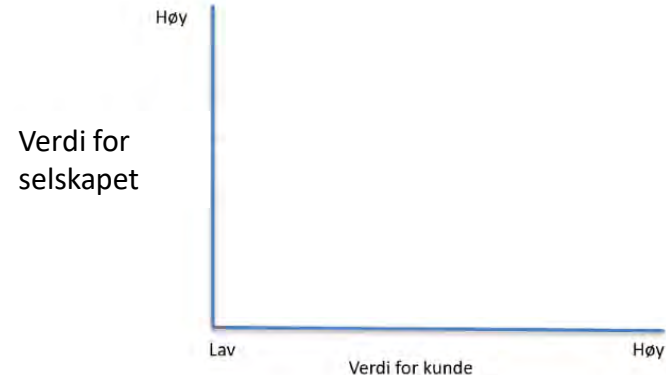
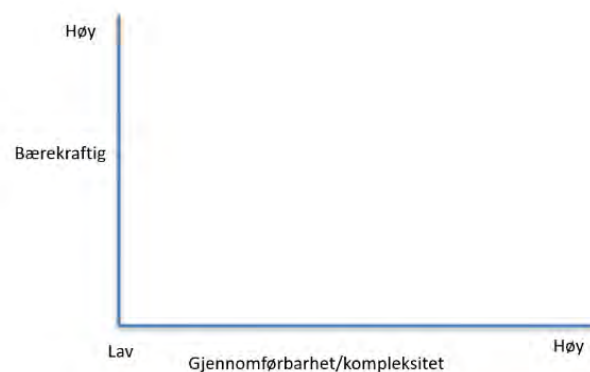


Verdiforslag



Vurdering av løsningsforslag – «new offering»

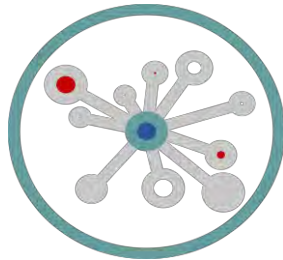
Vurder **gjennomførbarhet**, **bærekraft** og **verdi** av hvert løsningsforslag



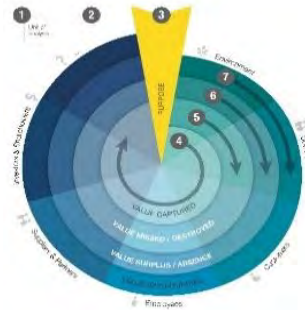
Velg et nytt løsningsforslag som **integrerer produktet med passende tjenester** og som stemmer overens med virksomhetens strategiske retning og som gir verdi for kunden og selskapet

Cambridge Method for Value Generation Tools

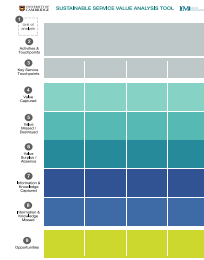
Business Network
Build, analyse and prioritize
Your stakeholder map



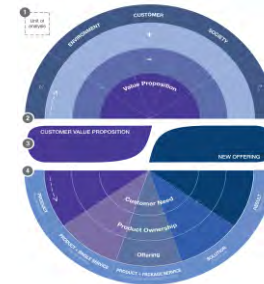
Value Explorer
Explore Value in your eco-system &
find new business opportunities



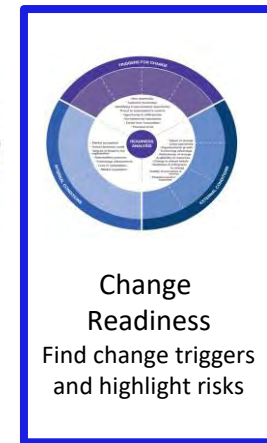
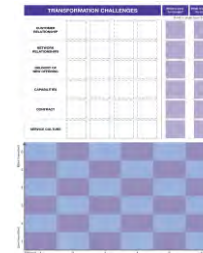
Service Value Analysis
Find business opportunities in
the customer experience



Business Model Design
Create value propositions for key
stakeholders & innovate the offer



Transformation Challenges
Discover quick wins and
uncover barriers



Change Readiness
Find change triggers
and highlight risks



Product Value Analysis
Find business opportunities
across linear & circular life cycles

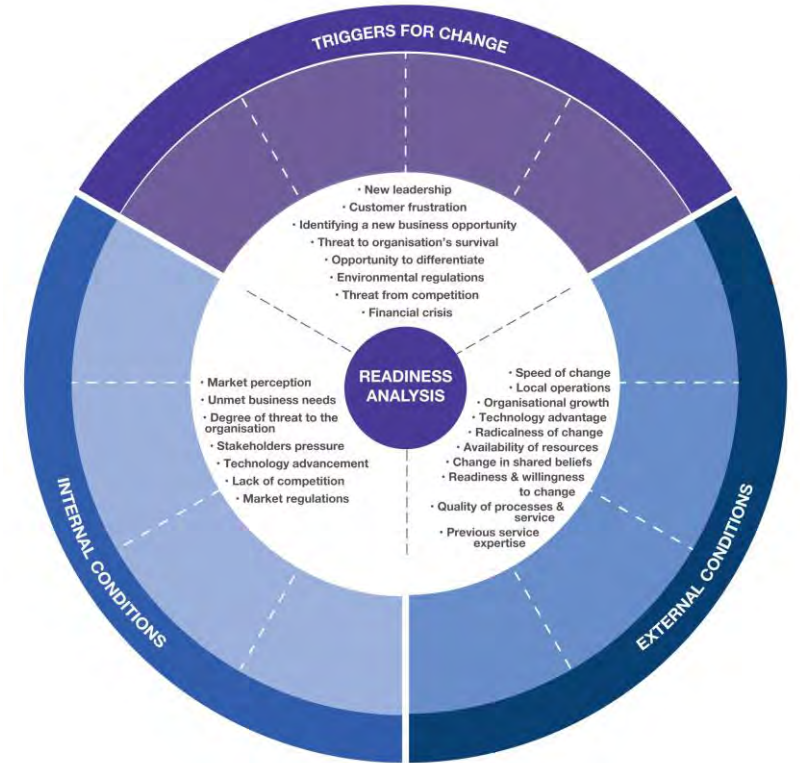


Action Plan
Turn your insight in to actions
for effective implementation

Change Readiness Tool

Analyse readiness for change

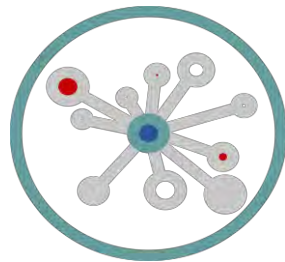
Identify the **key triggers** that will set forth the change to develop the new offering



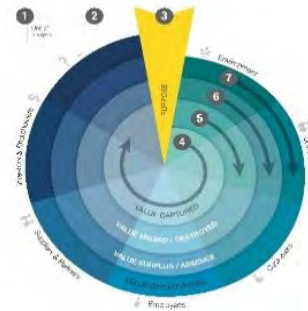
© 2016 Dr. Doroelya Vladimirova | Illustrated by Dr. Curie Park

Cambridge Method for Value Generation Tools

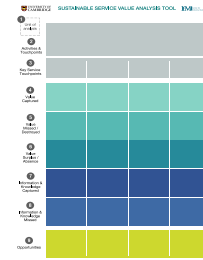
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Your stakeholder map



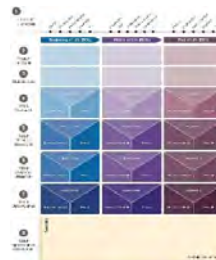
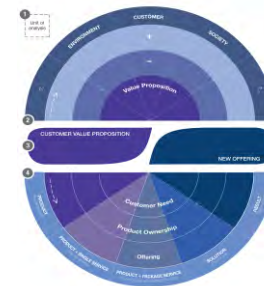
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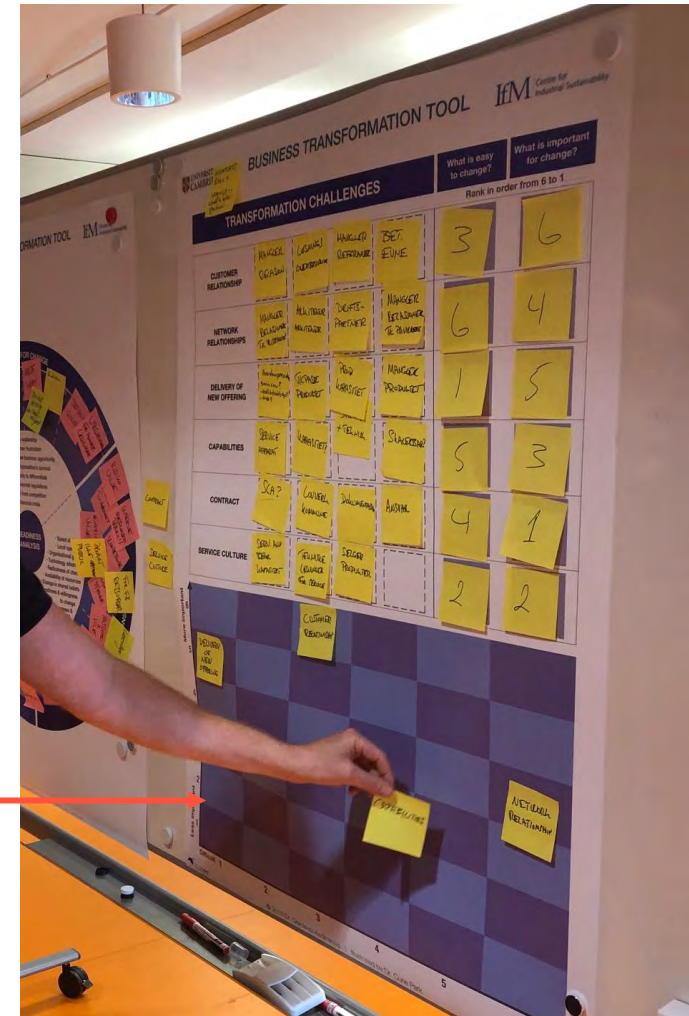
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Transformasjons- utfordringer

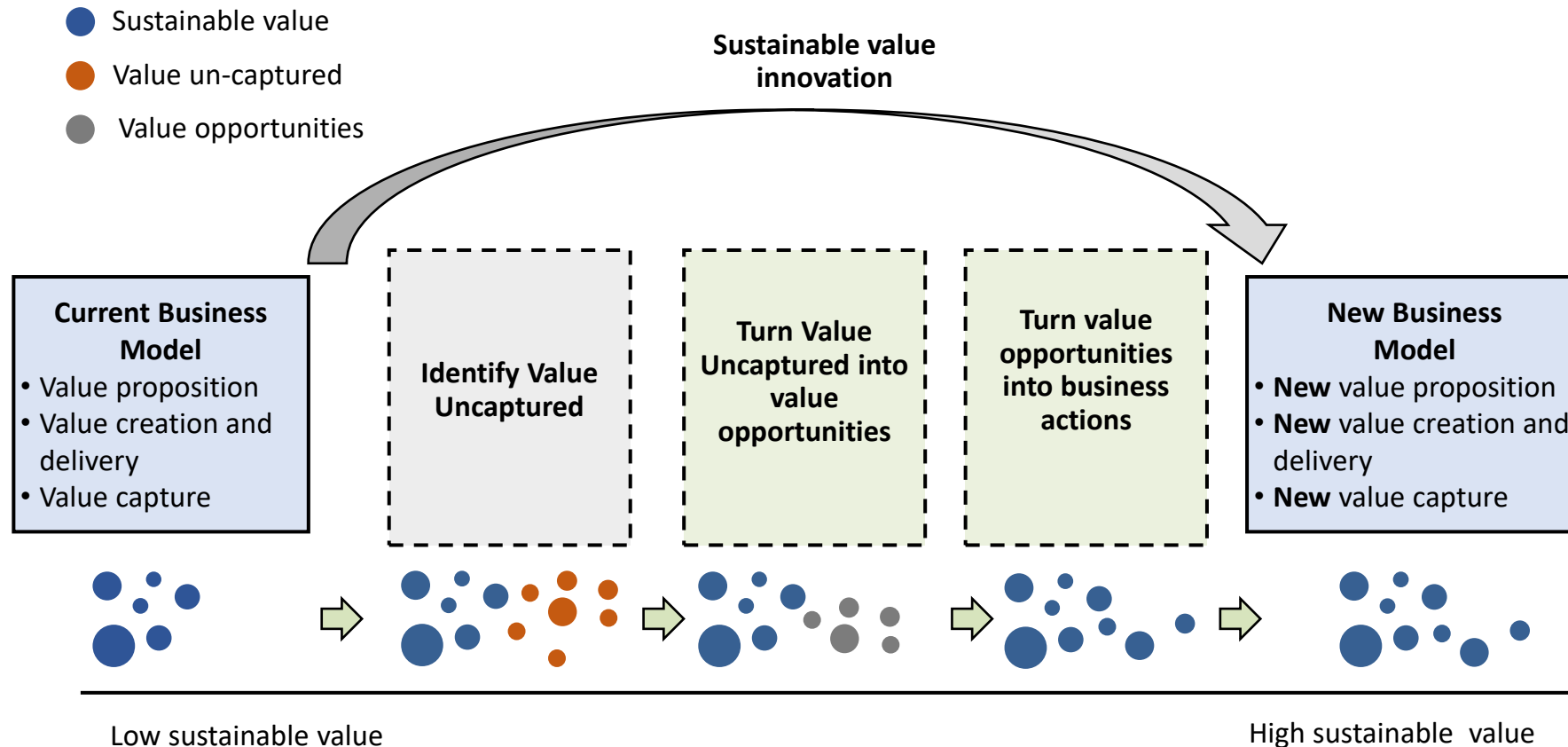
Oppdag quick wins og barrierer!
Prioriter de i forhold til hverandre!



Hvilke gir
høyest
bærekraftig
verdi og er
gjennomførbar



Business model innovation for sustainability



• Yang, M., Evans, S., Vladimirova, D., Rana, P. (2017), *Value uncaptured perspective for sustainable business model innovation*, *Journal of Cleaner Production*, Vol.140, pp. 1794-1804.

Sustainability challenge: De-centralized Service and Aftermarket

How might a cost-efficient de-centralized service solution be designed? How can such a model be scaled up to be the go-to system that each new market should follow?

Today, Cinderella Eco Group's (CEG) business model entails three parts: the dealer, the service technician and the end user. A Cinderella-consumer never buys direct from CEG; however, the aftermarket service is often conducted by Cinderella's employees in Oslo where the consumer in many cases will dismantle and deliver their toilet personally. The daily, weekly and annual maintenance is handled with ease by the consumer, **but every five years, a more thorough service needs to be conducted by Cinderella's aftermarket personnel.**

Taking advantage of end-consumer product ownership retention and long shelf-life to incentivize increase in sustainable resource productivity along the whole life cycle:

- Create a modularized toilet model that makes upgrade of parts sustainable and easy
- Prolong life-span, minimizing waste while introducing new product lines
- Reduced energy consumption
- Establish business partnerships to enable Cinderellas entry into new markets



CEG started this process by understanding human behavior and needs, using **design thinking** as an innovation method. This process led to an understanding of the challenges that must be solved to enhance the sustainable impact CEG might have to solve worldwide problems; "Cinderella from private to public"

The company **purpose** is based on evaluation of the triple bottom line.

Primary focus on **SDG no 3 Good health and wellbeing** and **no 6 Clean water and sanitation**



Different circular alternatives were addressed by working with



which led to the next possibility
«Waste as a service»

The sustainability efforts will be addressed at different levels;

- Continuous product development to adapt the Cinderella to new markets demanding capacity and energy optimization
- Design for intuitive user instructions that can also enable a non-Cinderella owner to use the toilet correctly
- Develop a sustainable circular business model
- Reduce CO2 footprint and increase efficiency gains

Communicated and implemented;

- A service partner network of independent sales and service technicians as one combined partnership.
- This entails onsite training as well as digital access to service manuals, videos and components.
- The expected outcomes from a new form of partnership will focus on sustainability, code of conduct resulting in a responsible business partnership.

By solving the challenges CEG now consecutively is working on, CEG will make both environmental, social & economic impacts.