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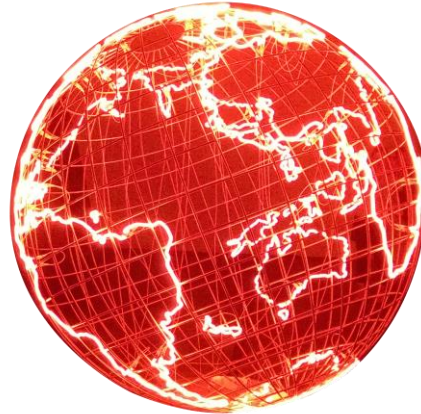
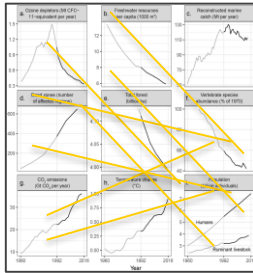
Aalto
Sustainability
Hub

Business model innovation for sustainability

How to change the world, Jan 14, 2019
Professor Minna Halme

Sustainability-oriented innovations

Grand challenges



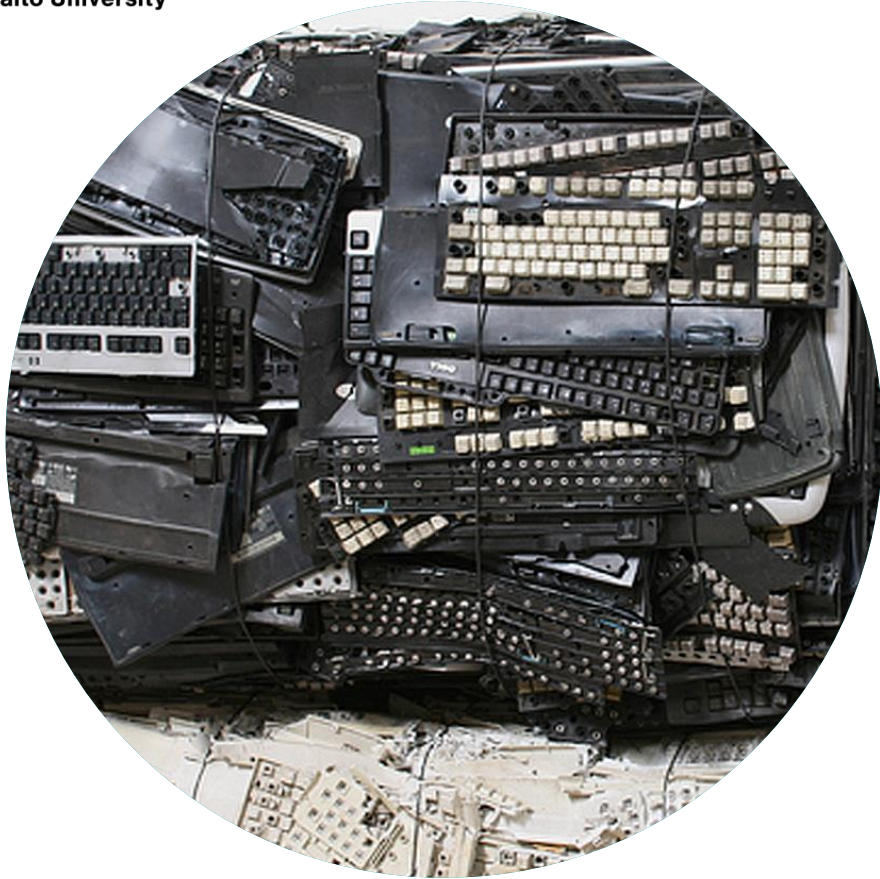
Innovations



Sustainability(-oriented) innovation = New or significantly improved product, service or business model whose implementation in the market solves or alleviates an environmental or social problem (Bos-Brouwers 2010; Halme & Korpela 2014; Adams, Jeanrenaud, Bessant, Denyer & Overy 2016)

A!

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*What is the
downside of
contemporary
main stream
business models?*

Contemporary business models

- Existing business models are predicated on the assumption that natural capital is in virtually limitless supply.
- Mispriced resources and other market distortions make some models more competitive than they otherwise would be.
- Planned obsolescence drive repurchases and profits.

Innovation at sustainability map of business

Assumed baseline: a company follows mandatory legal and economic responsibilities

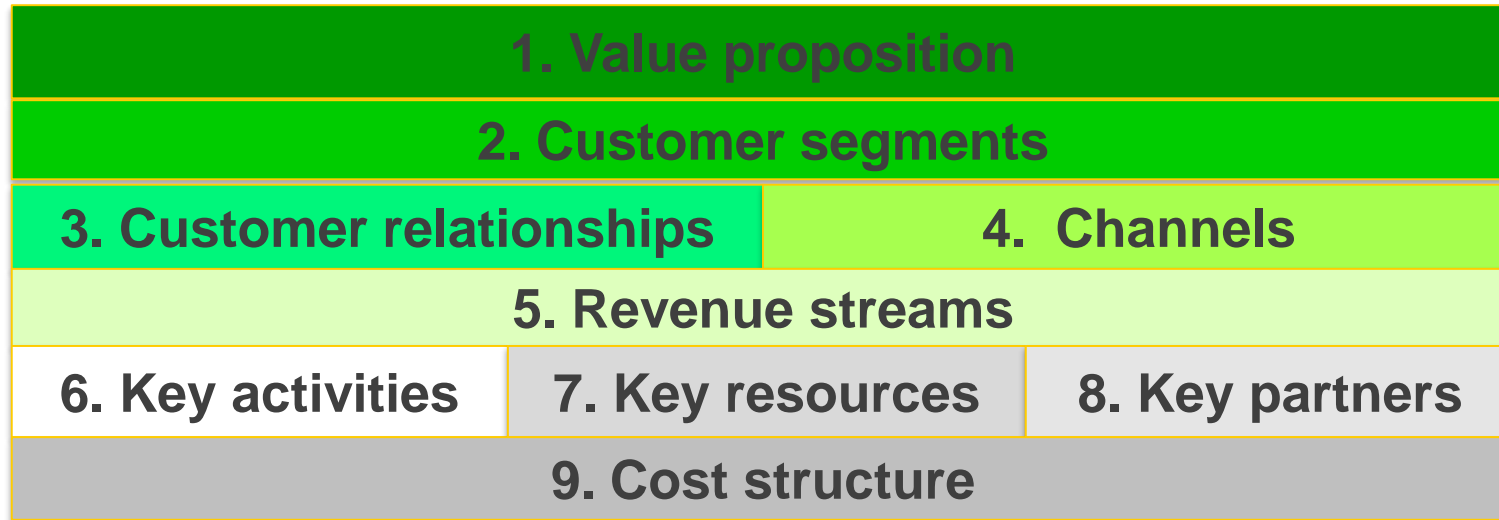
- 1. Philanthropy:** donations, sponsorships, voluntary work of personnel etc.
- 2. Integration:** Responsibility in own (existing) business
- 3. Innovation:** Solving social and/or ecological problems with own (new) products, services & business models (e.g. eco-business models or poverty alleviating innovations)

Note: Being strategic about sustainability means that each company must select issues that intersect its business, and where it can expect the biggest impact

Business model

- A business model describes the rationale of how an organization creates, delivers and captures value
 - customer segments and value proposition, channels, customer relations;
 - key resources, activities and partnerships; and
 - revenues streams and cost structure

Business model canvas



Osterwalder & Pigneur, 2010

Questions helping to design a business model

Customer segments

- Who are our most important customers?
- To who are we creating value?

Value propositions

- What value do we deliver for the customer?
- Which problem of the customer are we helping to solve?
- What bundles of products and services?

Customer relationships and channels

- Through which channels do we reach our customers?
- What type of relationship does our customer expect from us?

Revenue streams

- What are our customers willing to pay for?
- What other funding sources are there

Key resources

- What resources do our value propositions require?

Key activities

- What activities do our value propositions require?

Key partnerships

- Who are the key partners needed to provide our products and services?

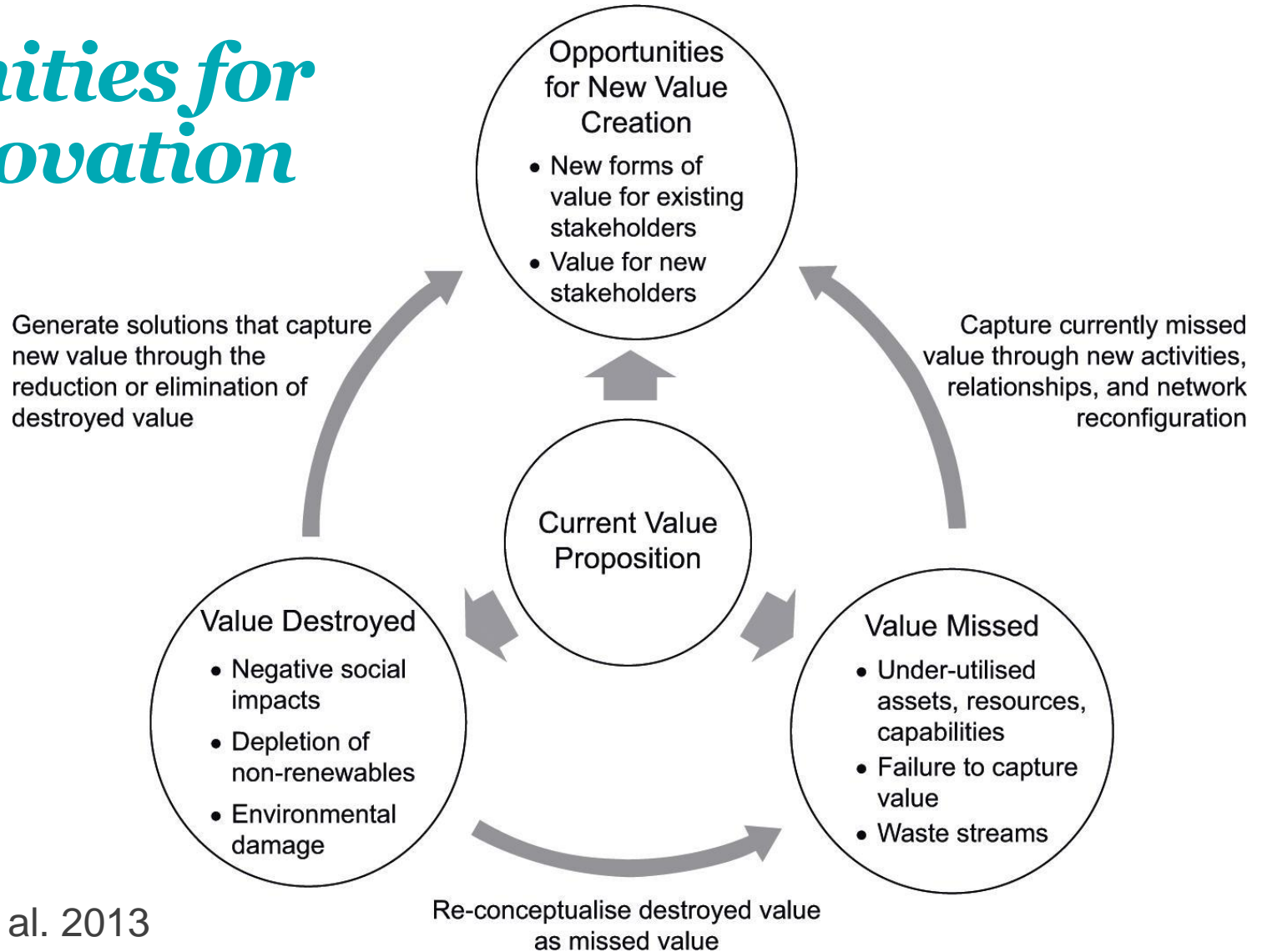
Cost structure

- What are the most important costs inherent in our business model?

Sustainable business models

- Seek to go beyond delivering **economic** value **and** include a consideration of **other forms of value** for a broader range of stakeholders
- Create competitive advantage and customer value while **contributing to** sustainable development of **the company and society**
- Use both a **systems and firm-level** perspective
- Build on economic, ecological and social **sustainability** considerations **when defining** the firm's **purpose and** measuring **performance**, and include a wide range of stakeholders

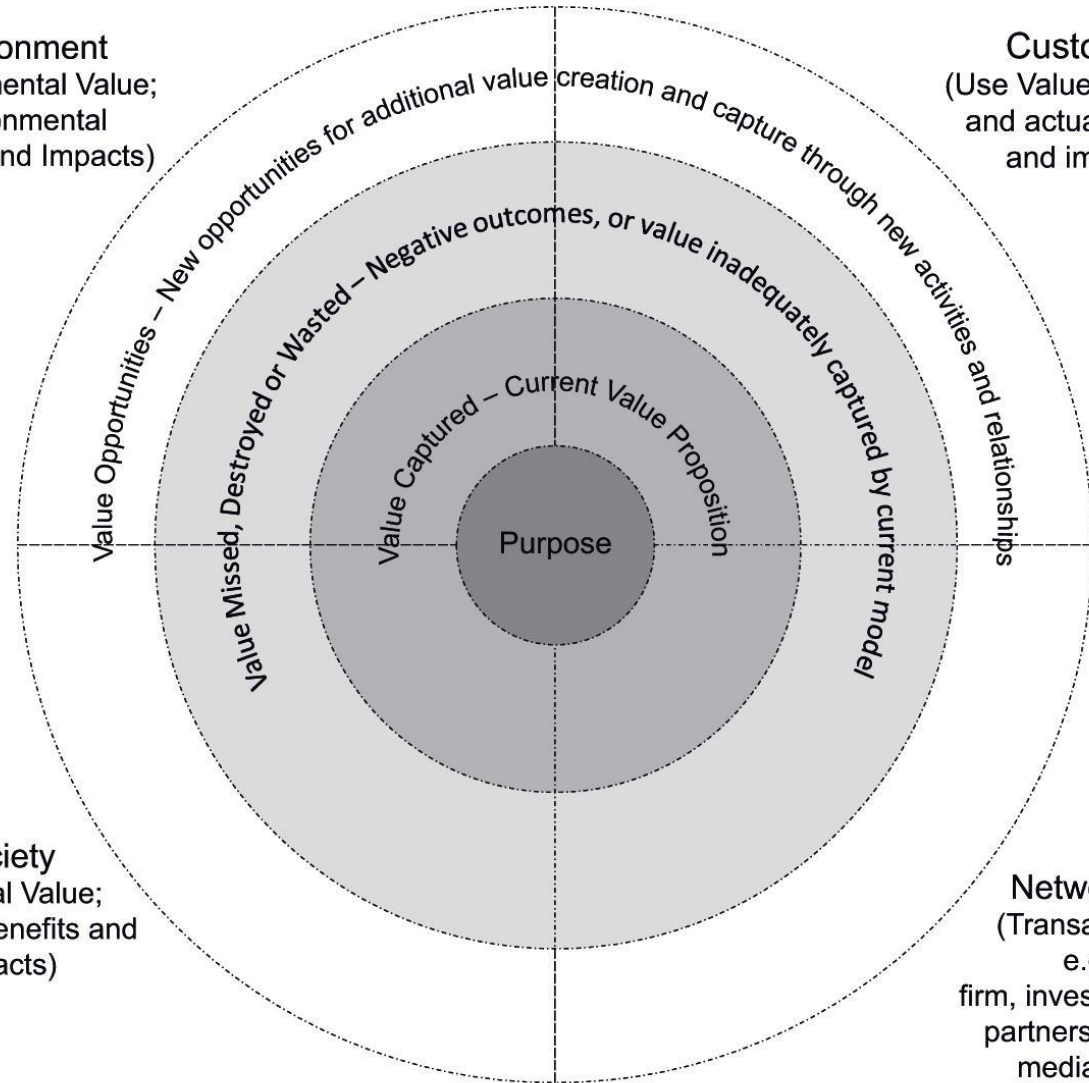
Opportunities for value innovation



Value mapping tool

Environment
(Environmental Value;
Environmental
benefits and Impacts)

Customers
(Use Value; perceived
and actual benefits
and impacts)



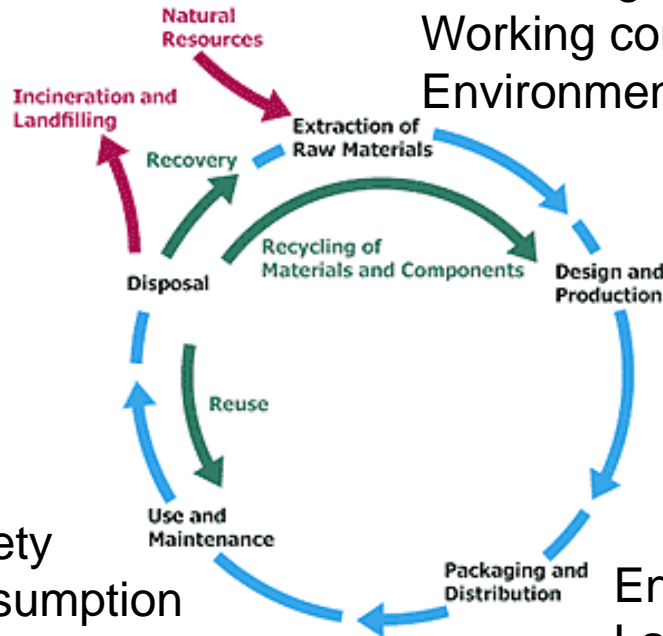
Network actors
(Transaction Value;
e.g. focal
firm, investors, suppliers,
partners, distributors,
media, research
institutes)

Society
(Societal Value;
Societal benefits and
Impacts)

Bocken et al. 2013

Moving toward sustainable business models: Product life cycle

Recovery,
recycling and
reuse



Human rights
Working conditions
Environmental hazards

Raw material use
Emissions,
Production waste
Energy consumption
Working conditions

Energy consumption
Land use, congestion

Product safety
Energy consumption
Water consumption

How to get more (utility) from less (materials and energy)?

- Reduce materials and energy intensity of products and services
- Recovery and recyclability of products and materials
- Product life time extension
- Selling services of product-service-systems (PSS) instead of products only
- Deliver functionality rather than ownership



Exercise: Add questions to help to design a sustainable business model

Customer segments

- Who are our most important customers?
- To who are we creating value?

Value propositions

- What value do we deliver for the customer?
- Which problem of the customer are we helping to solve?
- What bundles of products and services?

Customer relationships and channels

- Through which channels do we reach our customers?
- What type of relationship does our customer expect from us?

Revenue streams

- What are our customers willing to pay for?
- What other funding sources are there

Key resources

- What resources do our value propositions require?

Key activities

- What activities do our value propositions require?

Key partnerships

- Who are the key partners needed to provide our products and services?

Cost structure

- What are the most important costs inherent in our business model?

Questions helping to design a sustainable business model

Customer segments & stakeholders

- Who are our most important customers? *Key stakeholders?*
- To who are we creating value?
- *Do we destroy value? (negative sustainability impacts)*

Value propositions

- What value do we deliver for the customer? *To stakeholders?*
- Which problem of the customer are we helping to solve? *Does our value proposition create problems to others?*
- What bundles of products and services?
- *Can we turn destroyed value into a solution?*

Customer relationships and channels

- Through which channels do we reach our customers?
- What type of relationship does our customer expect from us?

Revenue streams

- What are our customers willing to pay for?
- What other funding sources are there?

Key resources

- What resources do our value propositions require?

Key activities

- What activities do our value propositions require?

Key partnerships

- Who are the key partners needed to provide our products and services?

Cost structure

- What are the most important costs inherent in our business model?
- *Are there externalities, where costs accrue to someone else (societal stakeholder or nature)?*

Impact

- *Are there negative environmental or social impacts from our business model?*

Break & SBC announcement



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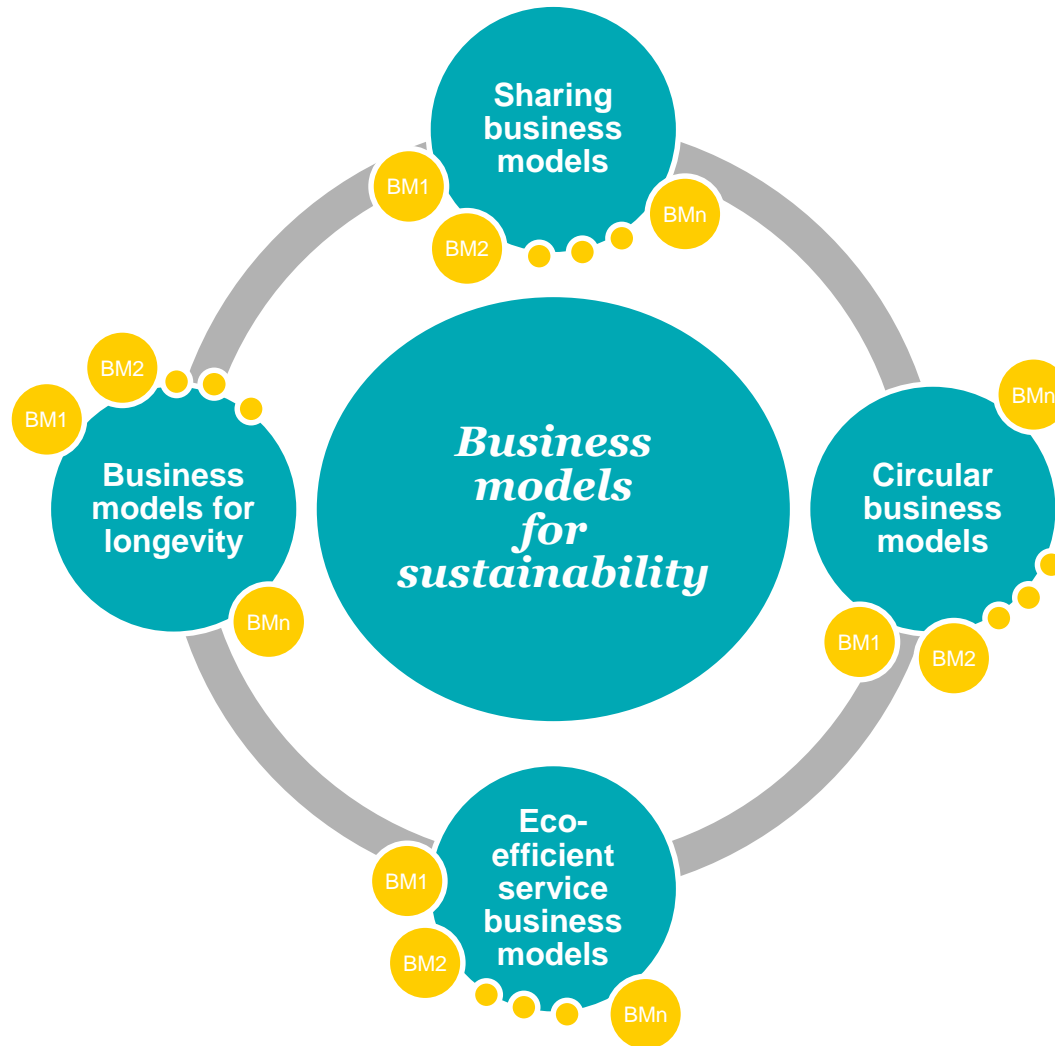


Estimated to be worth \$4.5 trillion globally, the circular economy has quickly taken hold amongst industry leaders and innovative start-ups worldwide. Examples include General Motors who, whilst increasing their gross profit by 50%, have reduced material use by 90% by recovering and remanufacturing reused components, unlocking \$1 billion previously wasted value by transforming material management in manufacturing.

(Lacy and Rutqvist, 2015)

gmauthority.com

Business model types for advancing sustainability & examples



Circular ("re") business models

Re = reuse, refurbish, recycle etc.

Outlet



This is how I roll

- 1 Pick me**
I simply replace the disposable delivery packaging.
- 2 Return me**
Just drop me into a post box. Anywhere in the world and always free of charge.
- 3 Get your reward**
You will receive a voucher in your email.
- 4 Use your voucher**
Save money off from your next purchase at any #RePacking store.



swap.com



The Infinited Fiber Company®



3 STEP IT



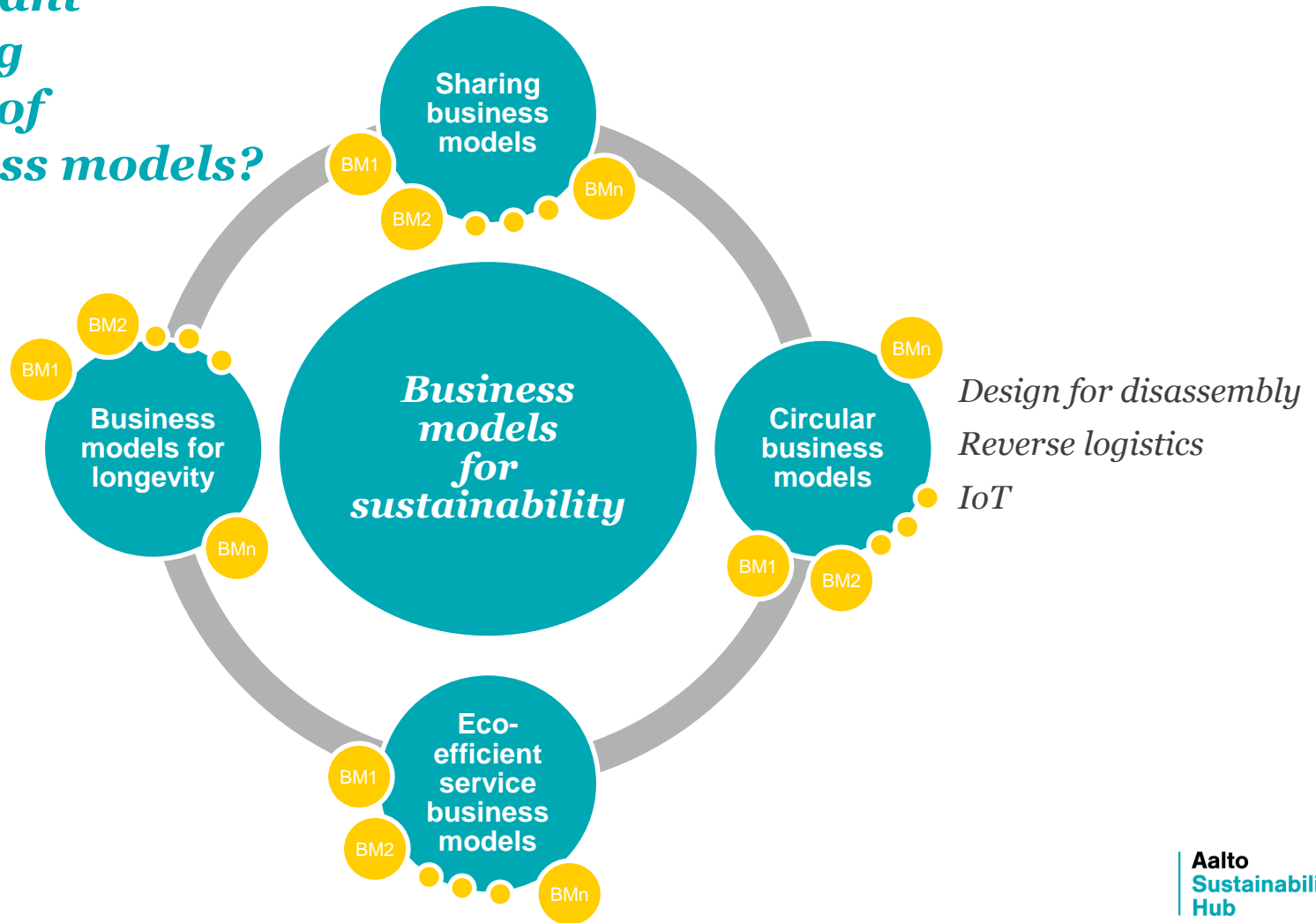
DURAT®



LOOP



What is important and challenging for the success of circular business models?



Sharing business models

Stadin Aikapankki

Stadin Aikapankki on tarkoitettu kaikille hollingsi ja sen läheisille avoimille ihmisille, jotka haluavat tarjota omaa aikansa ja apunsa yhteisön käyttöön ja samalla saada apua omaan arkeen. Aikapankissa jätetään taloja niin, että esimerkiksi ompelusta päivivi brokoi tarjoaa korjauspalvelua muille jäsenille ja saa itseään apua esimerkiksi lastenhuolusta tai juhlien järjestämisestä.

Aikapankki ei tunneta euria ja vahvistaa on tui. Koska Aikapankin periaatteena on, että kaikilla oia tyvi ja avon tarve ovat yhtä arvokkaita, vastaa t tui kaikissa tilanteissa yhtä tyystiä.

Sharetribe

Create a marketplace

Let your community sell, rent, swap and share goods and services online.



Spice Time Credits

Engaging Communities

Time Credits transform the way public & voluntary sector agencies engage with communities by mobilising individuals and social networks as the core agents of change.

People are thanked with time credits for contributing time to their community (getting Time In). People use credits to access events, training and leisure services, or to trade time with neighbours (getting Time Out). Transaction costs are minimal as it is coordinated by existing community 'being well' and because the volunteer runs uses under-used community resources as well as direct (immediate) exchanges between citizens. The result is engagement of the many rather than the few, and more cooperative public and community services.

Agency Time Credits Time Out Partners

Transform the way public & voluntary sector agencies engage with communities by mobilising individuals & social networks as the core agents of change.

There are many great venue and events operators that are recognizing the important contributions that local people are making to our communities.

Our work

- Housing
- Schools
- Localities
- Sustainability
- Wellbeing
- International

Latest News

Join Our Core: Finalist

10 June 2013 04 News

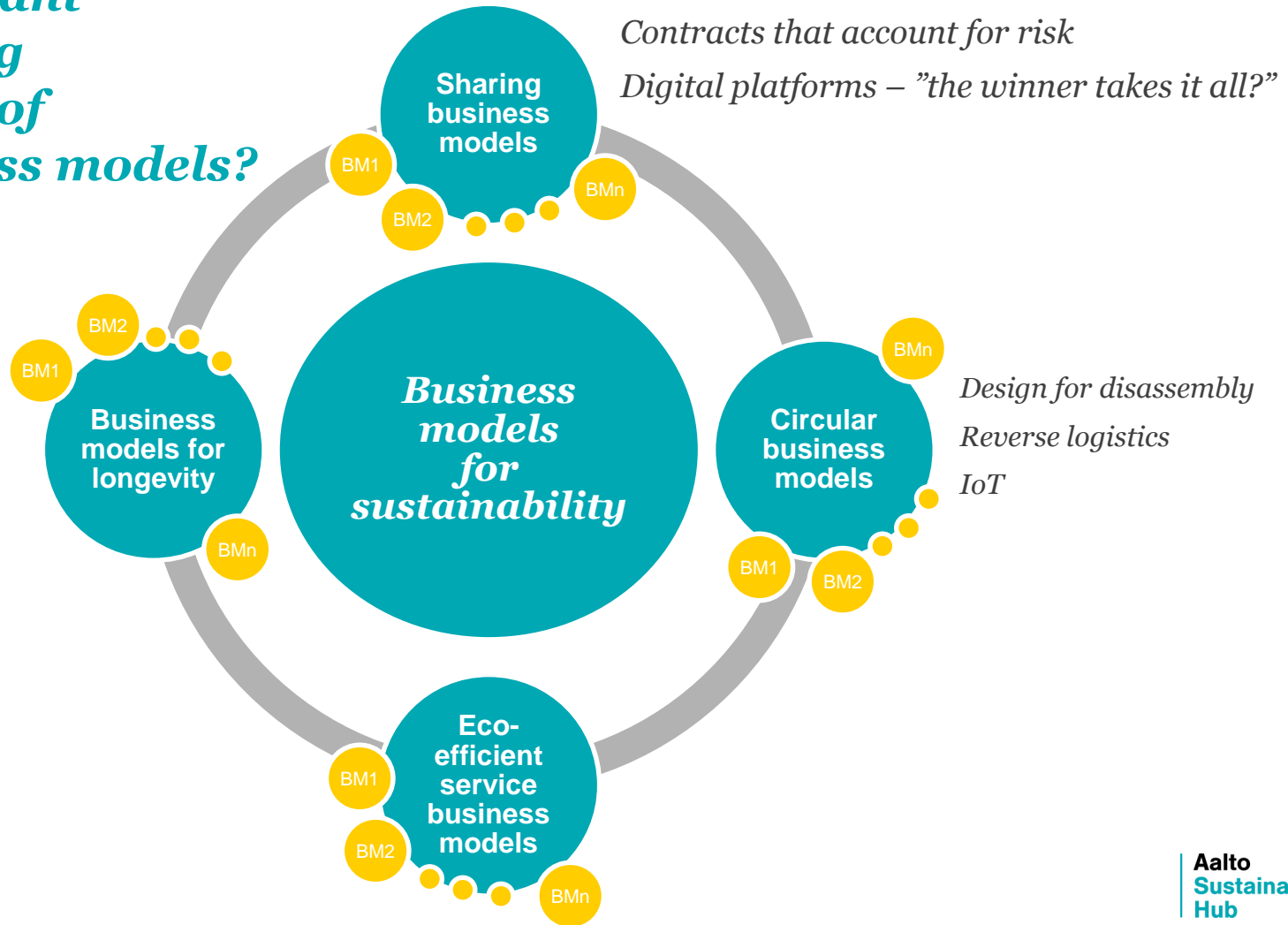


landshare

Linking people who want to grow their own food to space where they can grow it

Find Land Offer Land Identify Land Growing Community

What is important and challenging for the success of sharing business models?



Business models for longevity



Victorinox Knives



Longevity model is often coupled with services

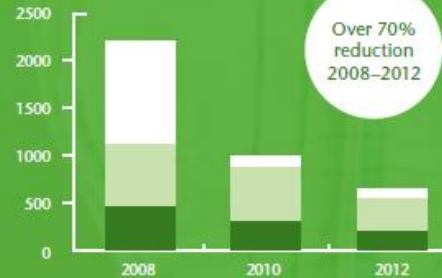


By developing eco-efficient hoisting machines, regenerative drives, LED lights, and standby solutions, KONE has cut the energy consumption of its elevators by over 70% during 2008–2012. And, as Jack gets older, we at KONE are confident that less and less energy will be needed to lift him.

KONE elevator's energy consumption

■ Lighting ■ Electrification ■ Hoisting

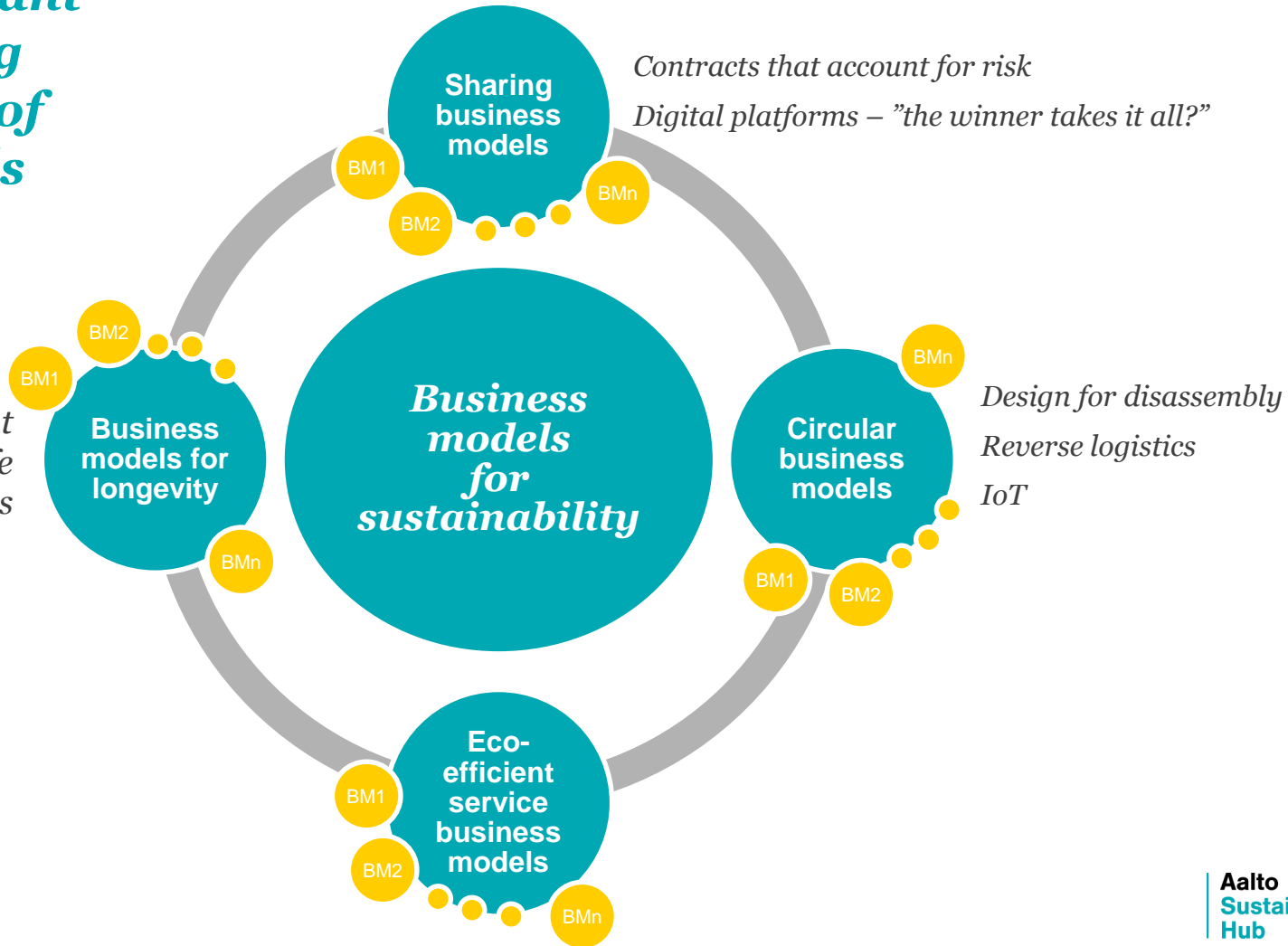
kWh/year



The calculation is based on an elevator speed of 1 m/s, a load of 630 kg, 150,000 starts/year, a travel height of 9 m and 4 floors.

What is important and challenging for the success of business models for longevity?

Managing price point compared to short-life competitors



Eco-efficient service business models



GREENLED Olemme energiaa ja ympäristöä säästävien valaistusratkaisujen kokonaistoimittaja



ESCOs

Service provider invests in energy saving installation in customer's premises
Payment to provider through cost-savings during contract period

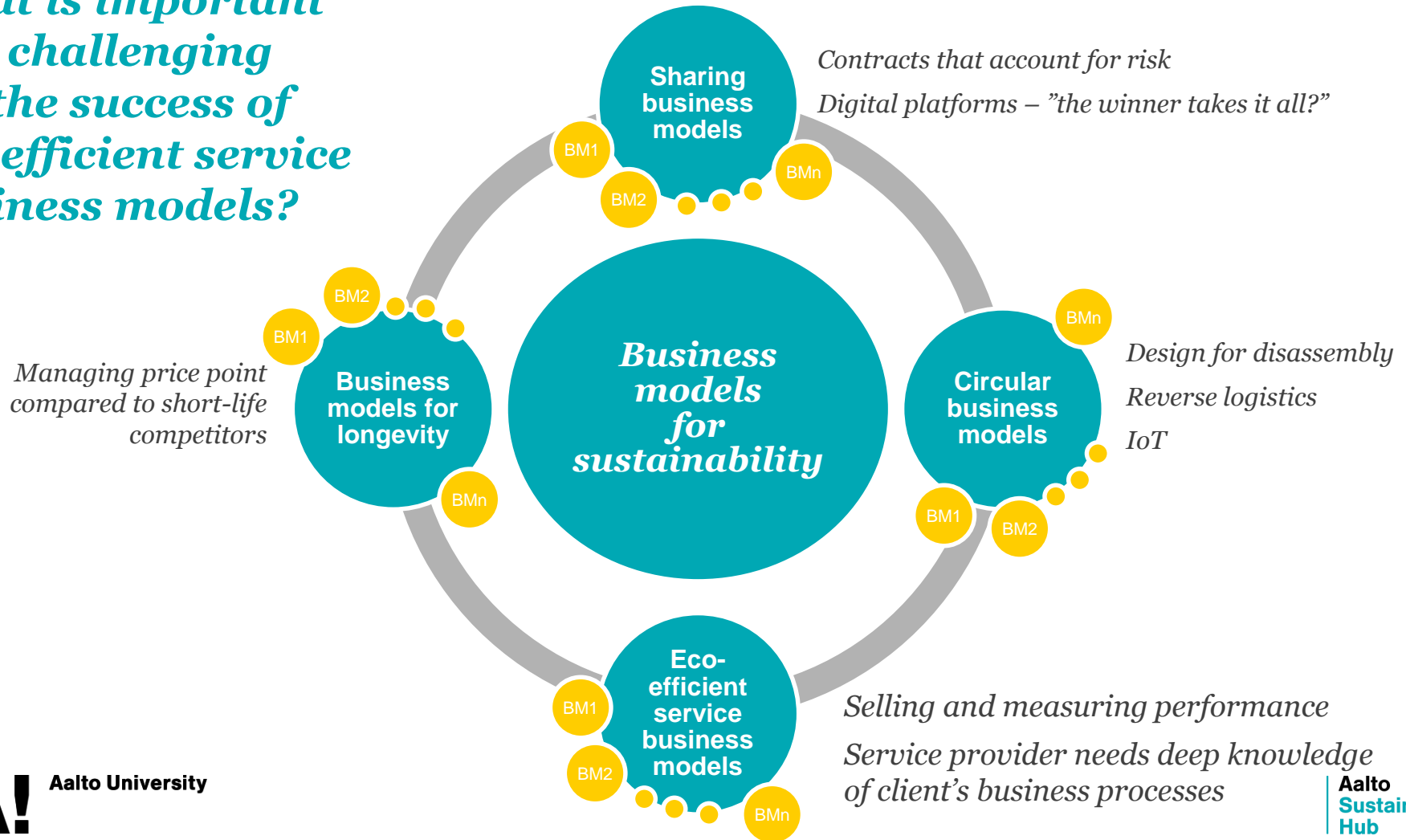
Chemical management services (CMS)

Supplier of CMS takes manages chemicals of its customers and strives to reduce the associated costs & risks
Sub-business models range from consultancy service to split-profit models

Product as a service

Smart lightning to offices, shopping centers, sport arenas, public spaces
Monthly payments for light
Savings through less energy use
Smart lightning: Adjusts itself according to use
Service 100.000 hours (typical household units 20.000 hours)

What is important and challenging for the success of eco-efficient service business models?



Key questions

Scaling

- Getting enough waste materials to scale circular product lines vs. waste reduction

Materials

- Retaining material quality for the most valuable next use versus immediate downcycling
- Consideration of sustainability in R&D for new materials
- Longevity

Consumption

- Effects at system-level, rebound effect
- *"More but differently"* - Can we keep on consuming without moderation?

Governance

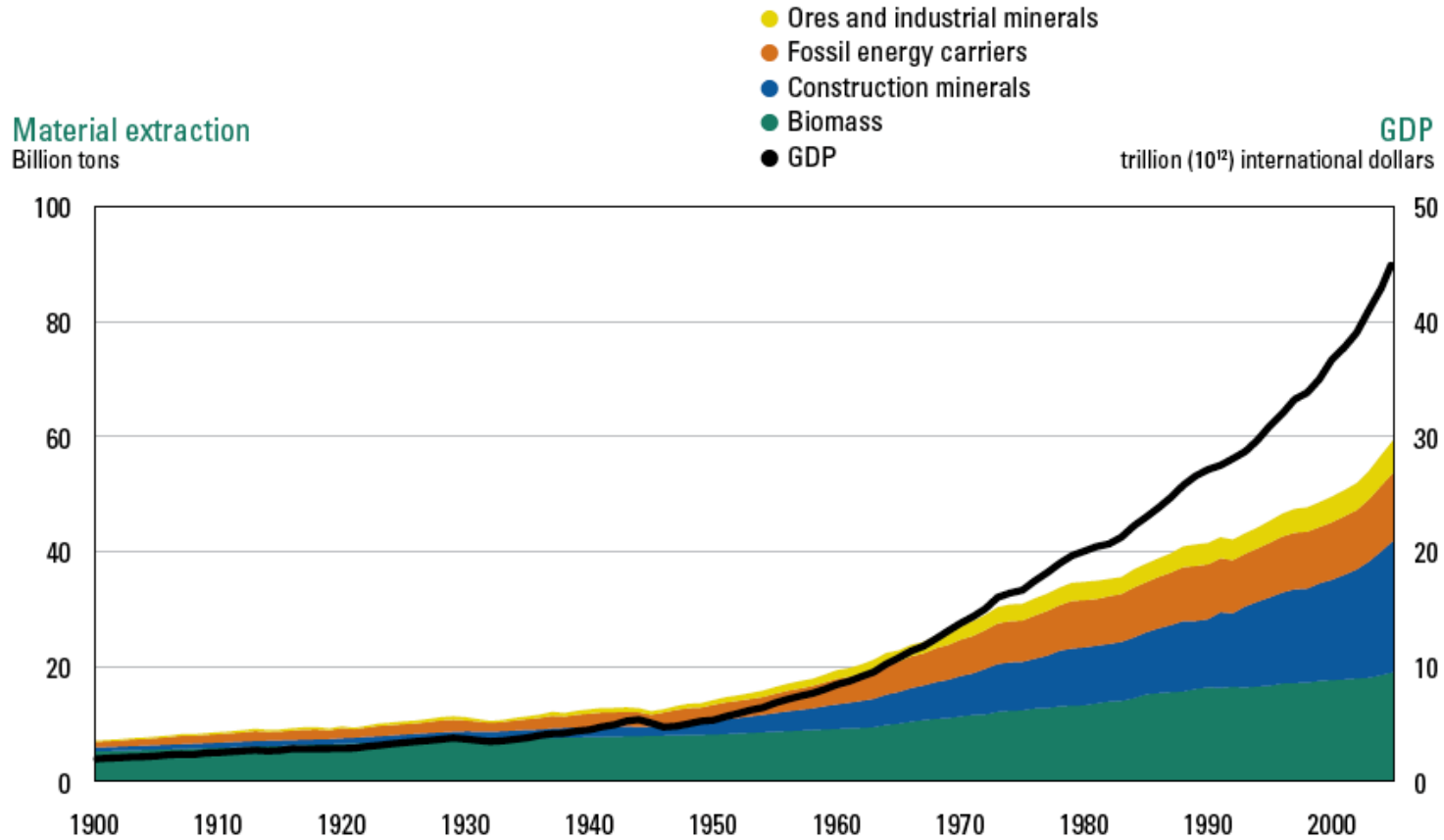
- Regulations and economic incentives may not be in line with sustainability
- Aligning stakeholders and alleviating information asymmetries

Rebound effect

The extent of the resource saving produced by an efficiency increase that is taken back by consumers in the form of higher consumption. For example:

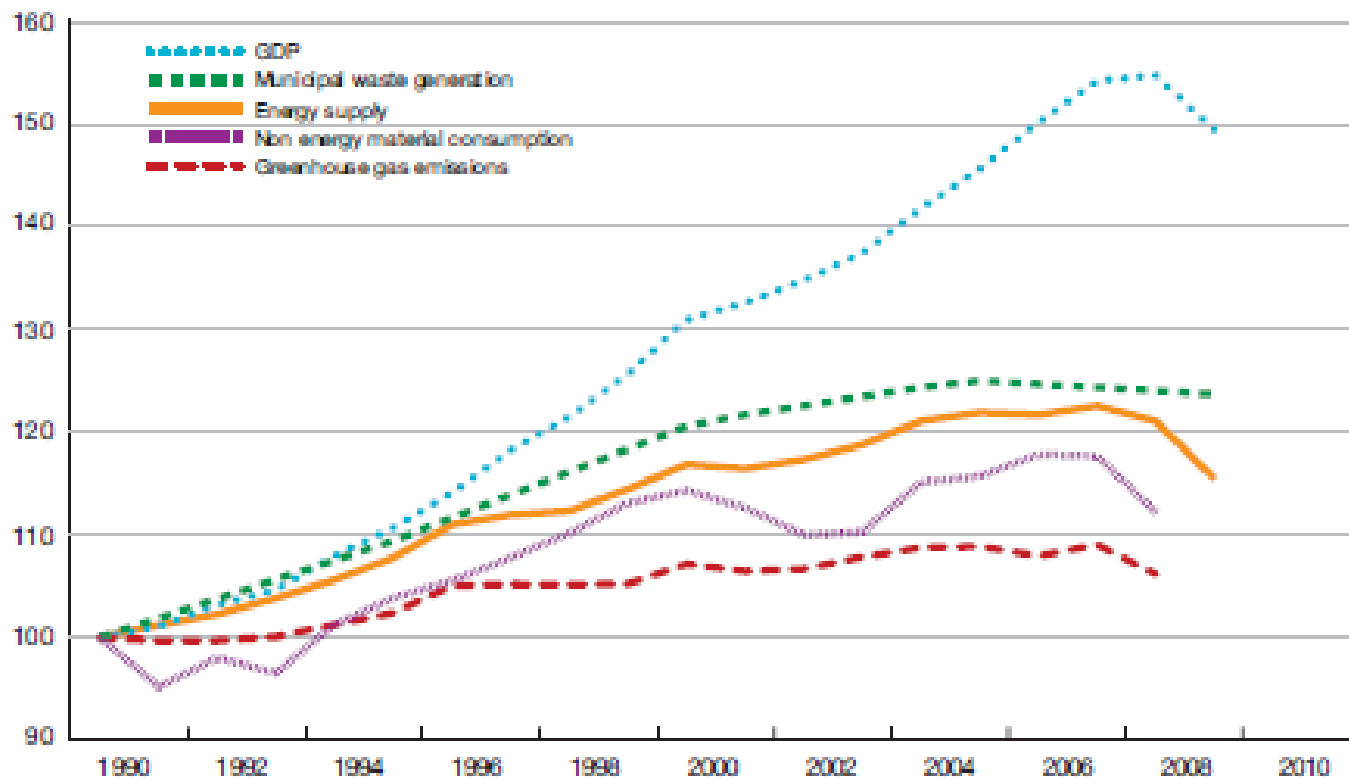
- More fuel-efficient car engines -> easily lead to more driving
- More electricity efficient lighting -> easily lead to keeping more lights on for longer hours

Consumer/user saves money through energy and material efficiency, but the saved money will be used for something. The target of money use determines the extent of rebound effect.



Decoupling trends, OECD

Index, 1990 = 100



Source: OECD and IEA environmental data.

Exercise:

Sustainable business model for H&M

Part 1 – identify unsustainability points

H&M is a multi-national fast fashion corporation

Identify which elements in the business model of H&M contribute to unsustainability



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Team work instructions

Team project instructions

Student teams design a **business model for an enterprise** that aims to address one of the **wicked sustainability problems** we crowdsourced during the first session. **Steps:**

1. **Narrowing down the wicked sustainability problem** chosen by the team: what will be the sustainability contribution of our business? What problem will it help to solve?
2. Selecting the **geographic context**: where will our enterprise operate?
3. Drafting the **business model** using Osterwalder Canvas or its modified version
4. Analysis of **challenges and pitfalls** of the enterprise and its business model
5. What can be done **to remove challenges** and pitfalls?
6. Can **Aalto students** set up this enterprise or participate in setting it up?

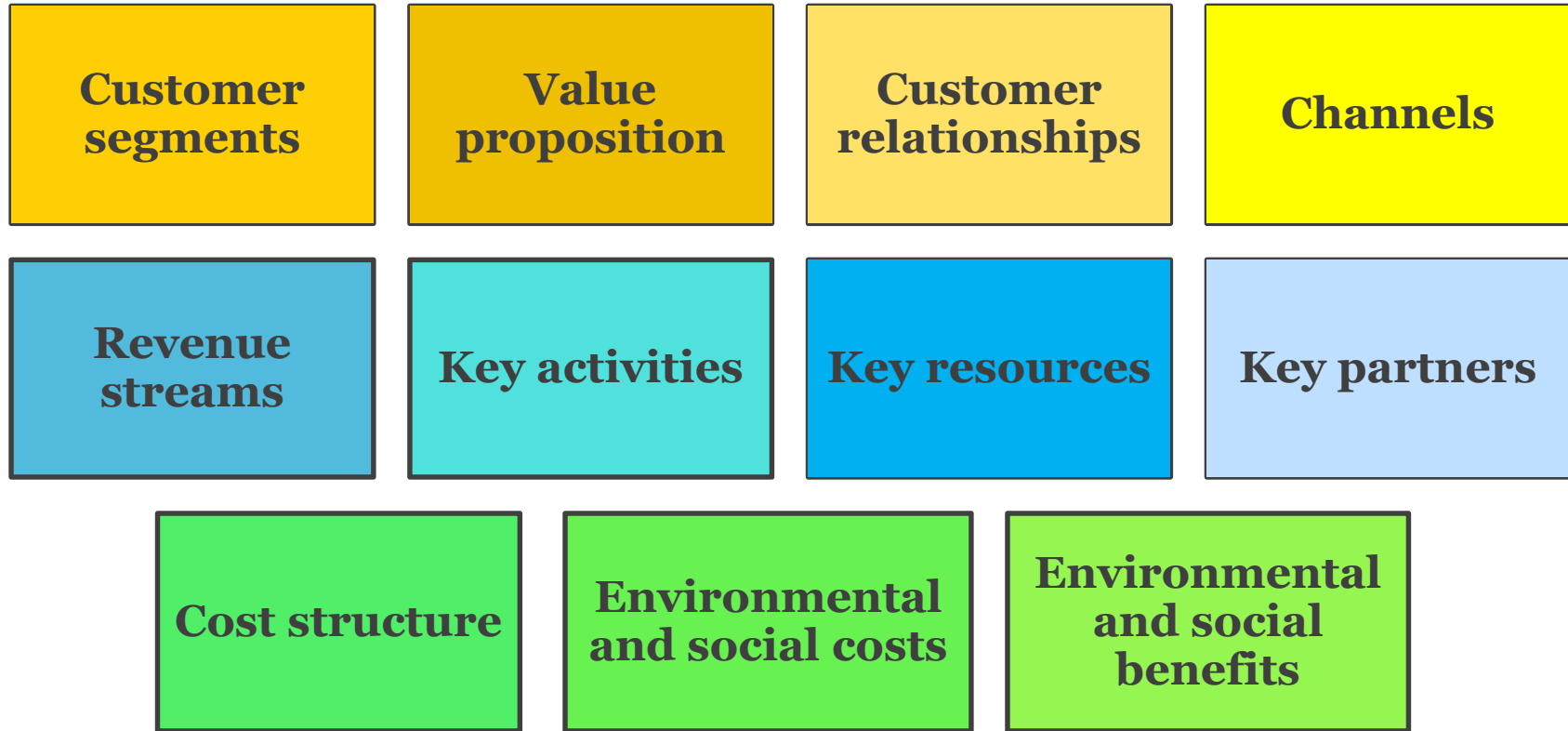
A”

Use of background
information

Relevance & credibility
of the model

Quality of sustainability
screening

Business model elements



Sustainability impact assessment

For this purpose, three optional sustainability impact assessment (SIA) models are available in MyCourses. You can use one of the following or combination that fits for the purpose.

- Two articles and one excel table:
- Halme et al. in *Ecological Economics* is a general model.
- Levänen et al. in *Sustainability* suits for developing country contexts
- Excel table suits for sustainability innovations in food, energy, mobility and living

The above are not obligatory. You may choose another framework.

You can provide the sustainability impact assessment as an attachment to your presentation. Only use the SIA to develop the environmental and social features of the business models and highlight only the main features in the presentation.