Dr. Moritz Gomm (Zühlke Engineering)

zühlke
empowering ideas

Products That Last

Sustainability Circle Kick-Off Event

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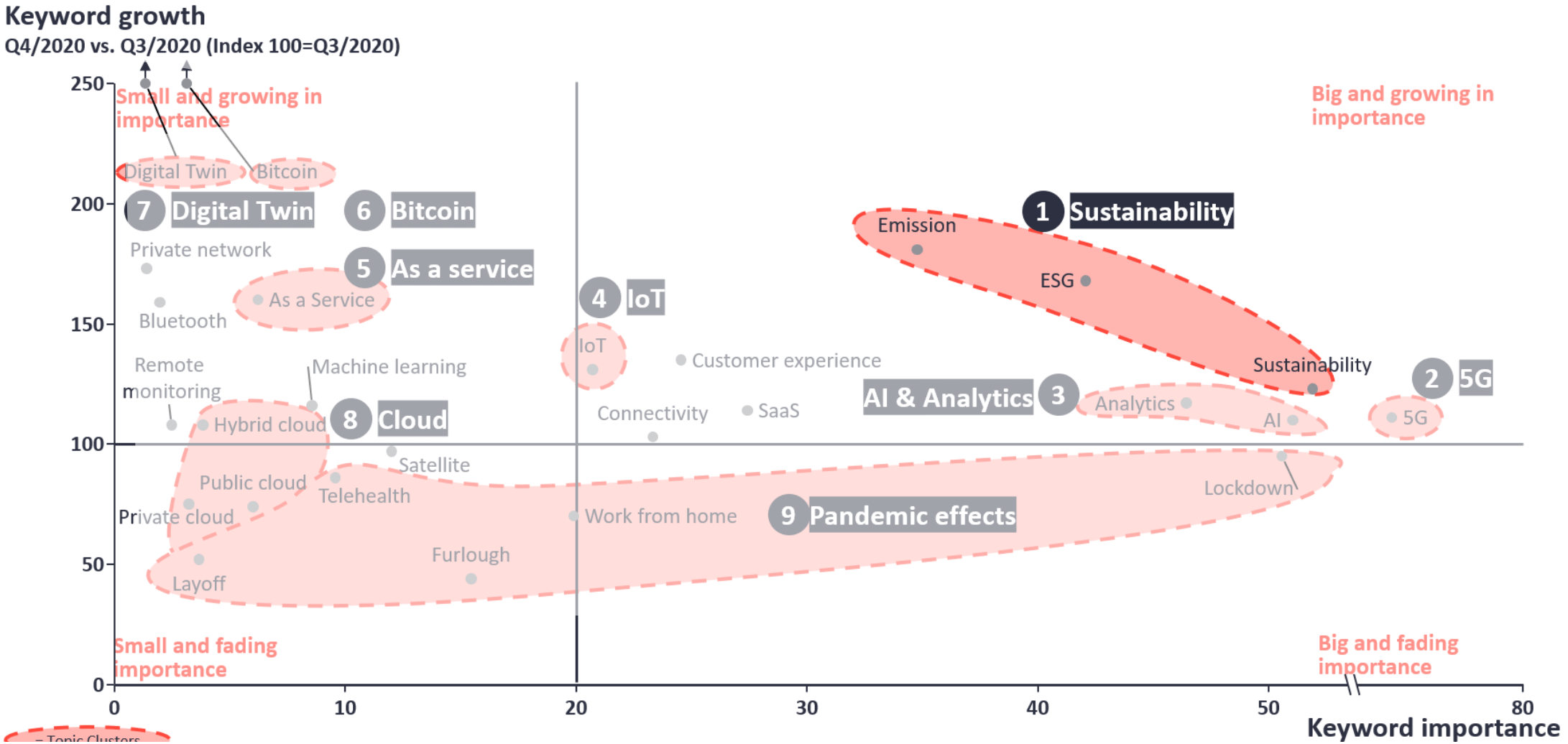
The Why?

Why Sustainability?

ESG = Environmental Social Governance

What CEOs talked about in Q4/2020 (vs. Q3/2020)



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Why Sustainability?

Larry Fink
CEO BlackRock
(7,4 Billionen US$)

Quotes from **BlackRock's letter to the CEOs** of its holdings:

[...] **Sustainability** will be BlackRock's **new investment standard**.

[...] we are facing a **fundamental transformation** of the financial world.

[...] **Climate change** is almost always the **most important topic** in discussions with our clients.

[...] we will see **faster changes in capital allocations** than in climate itself.

[...] We will **divest from investments that pose significant sustainability risk**, such as securities of coal producers.

[...] I have experienced a number of financial crises, all of which were temporary. **Climate change is a different story.**

[...] Companies, investors and governments therefore need to prepare for a **significant reallocation of capital**.

[...] **Every government, every company and every investor has to deal with climate change.**

Sources: www.blackrock.com/ch/privatanleger/de/larry-fink-ceo-letter
www.blackrock.com/ch/privatanleger/de/blackrock-client-letter

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Why Sustainability?







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Why our customers will embrace sustainability

New Competitive Advantage

Customers and Employees

Regulations (Green Deal)

Public Funding

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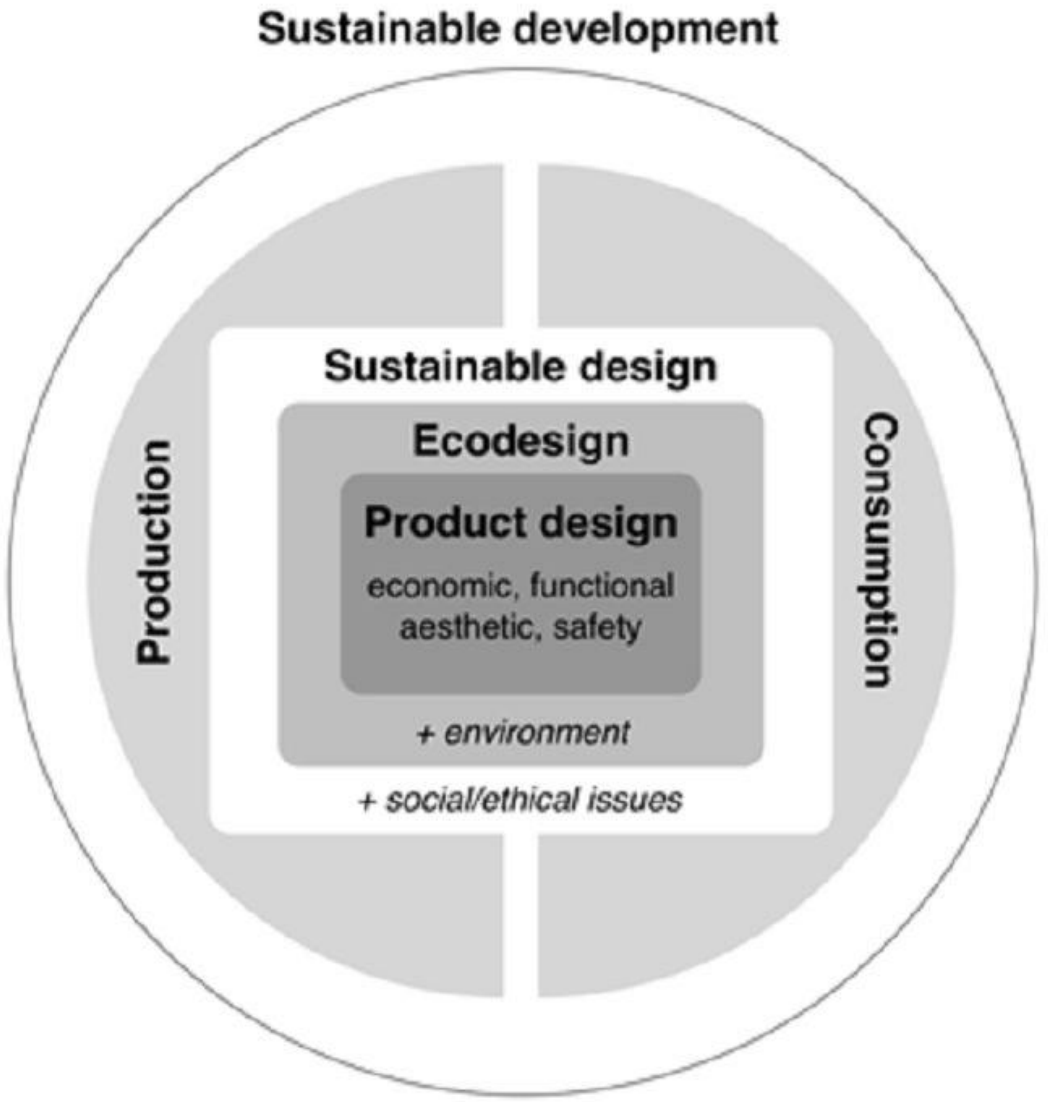
The How?

Some important terms

- Ecodesign vs. Sustainability Design
- Cradle to Grave ➔ Cradle to Cradle
- Circular Economy (“Kreislaufwirtschaft”)
- Rebound effect
- Green Premium
- SGDs



Source: Ursula Tischner (2001)

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Some important terms

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Three generic approaches to sustainability

Efficiency

enhancing resource productivity

e.g., 2.500 miles on
1 liter of gasoline

Consistency

technologies consistent with nature

e.g., replacing fossil energy
with renewable energy

Sufficiency

a modest but adequate scale of living

e.g., minimalism, frugalism,
tiny houses, car-sharing

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Business Models

Sell more, sell faster

Circular Economy

"A framework for an economy that is restorative and regenerative by design."

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

➔ Economic activity that builds and rebuilds overall system health

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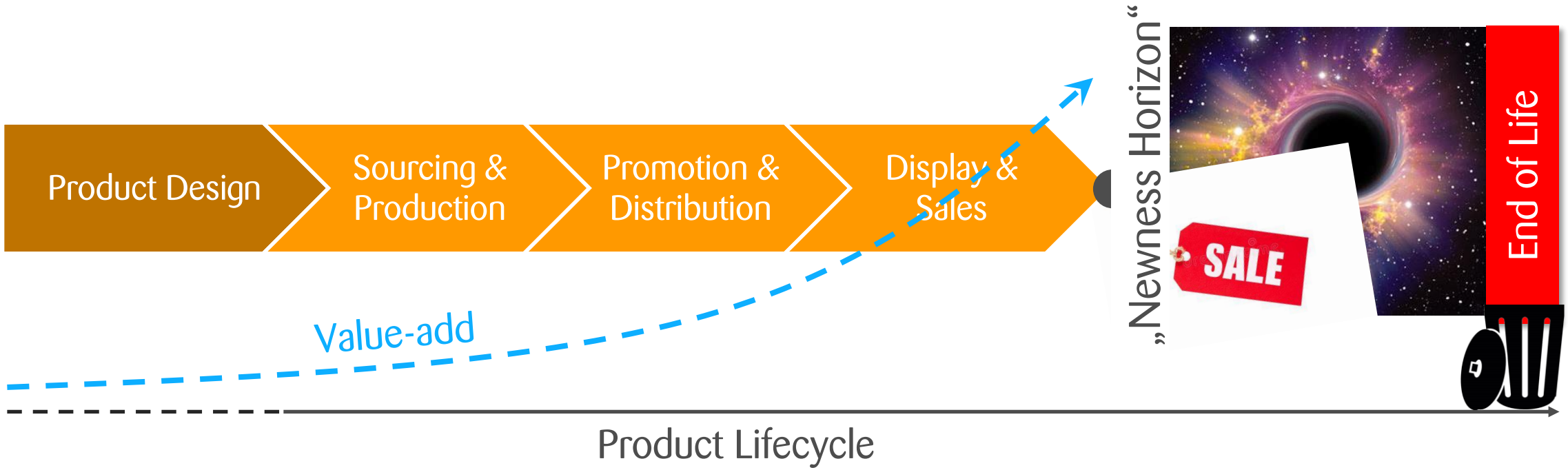
Business Models

Money made from selling new products
(classic perspective of designers and entrepreneurs)

Money made from products in use and product's afterlife



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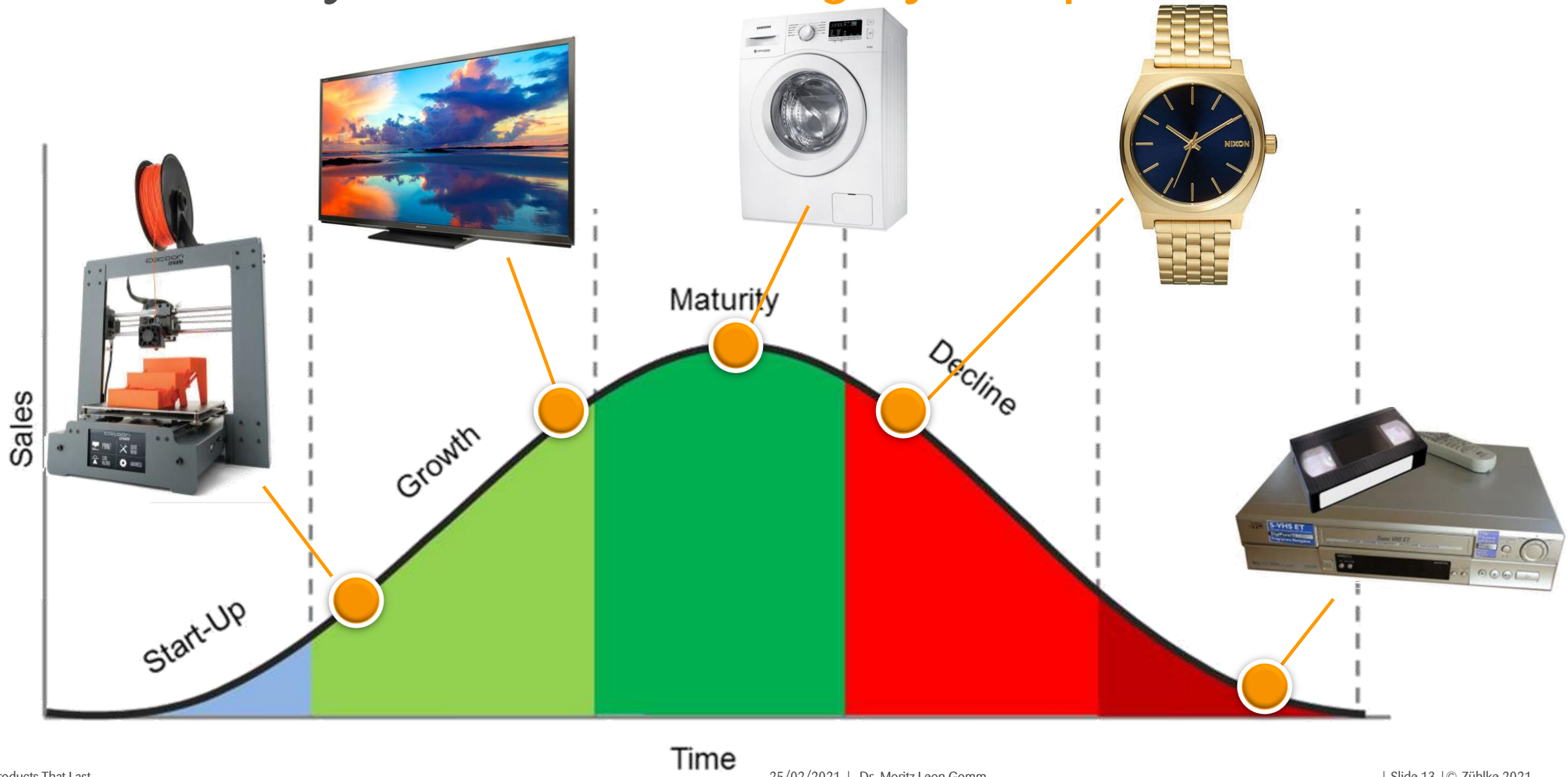
Product Lifecycle I (Product Category Perspective)



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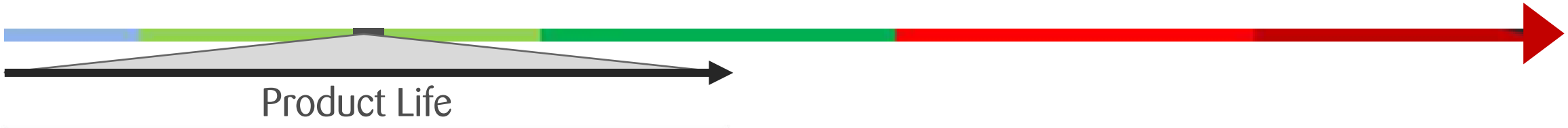
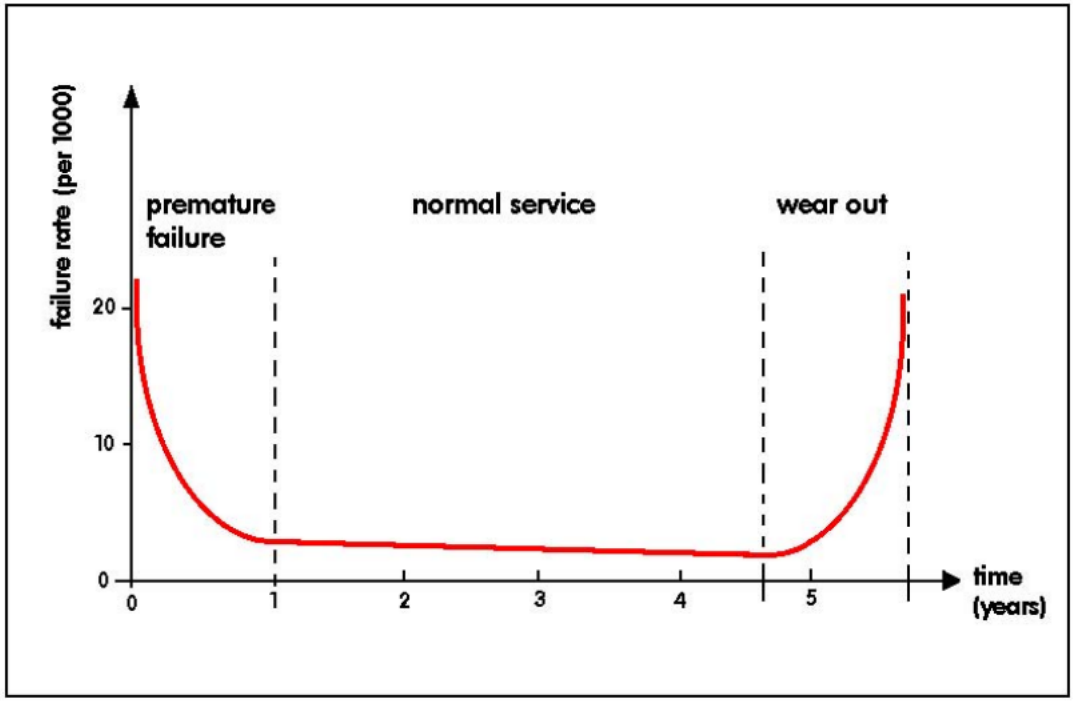
Product Lifecycle II (Single Product Perspective)

Product Service Life = *the time a product is offered*



Product Life



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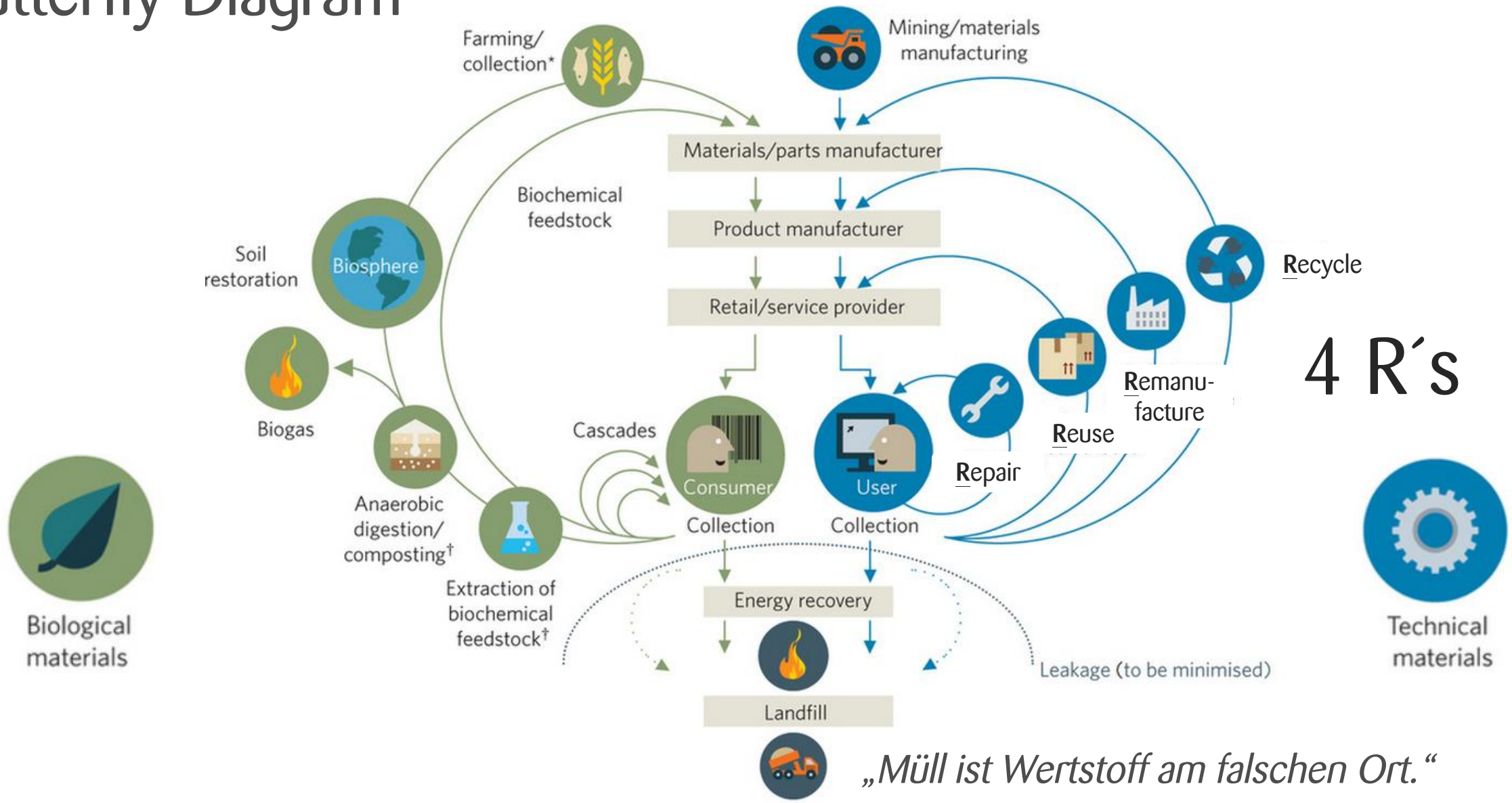
Butterfly Diagram



4 R´s

Recycle

Remanu-facture

Reuse

Repair

„Müll ist Wertstoff am falschen Ort.“

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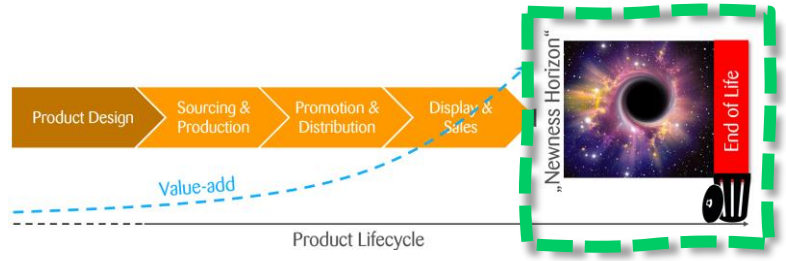
Sustainable Business Model Archetypes



Sell more, sell faster

Throwaway products with s short lifespan

Long Life Model

Products with a long lifespan + after-sales services fees

Hybrid Model

Sales of a durable product + repeat sales of cheap products with a short lifespan (e.g. coffee pads, print cartridges, razor blades)

Gap Exploiter Model

Services on value gaps in existing systems (e.g. shoeshine, repair shops, eBay, up-cycler)

Access Model

Fee for access to durable products (e.g. carsharing, tool rental, leasing & renting)

Performance Model

Fee for predefined results (e.g. cloud, transport, turbines)

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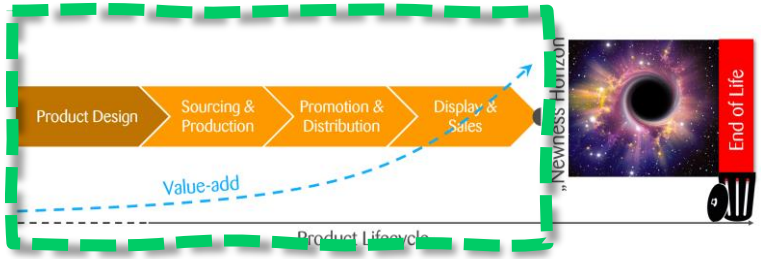
Circular Design Principles



Design for Attachment and Trust

Design for Durability

Design for Standardisation and Compability

Design for Maintenanace and Repair

Design for Adaptability and Upgradeability

Design for Dis- and Reassembly

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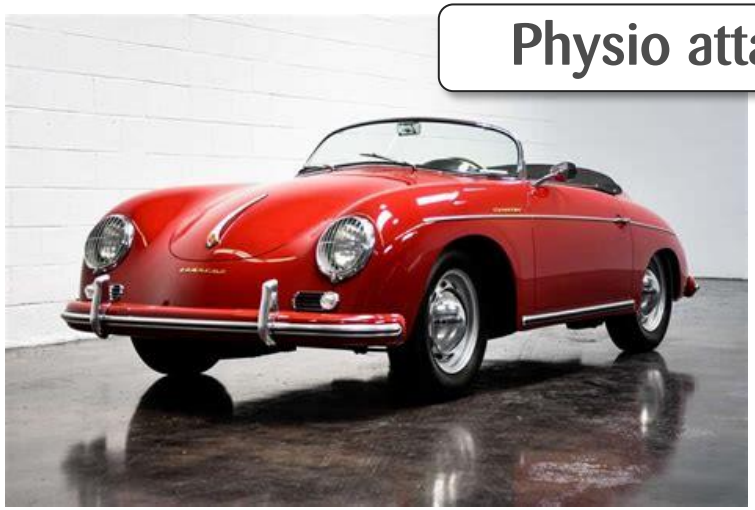
Design for Attachment and Trust



Physio attachment

Socio attachment

Ideo attachment

Psycho attachment

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Design for Durability

> 20 years

> 25 years

10-20 years

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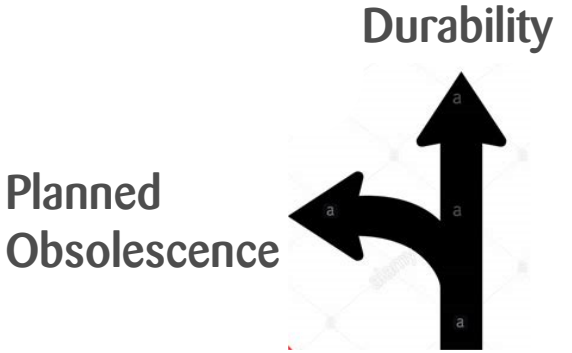
Planned Obsolescence



Designing a product with an artificially limited useful life

- use inferior materials or suboptimal component layouts which cause excessive wear
- Prevention of repairs and non-user-replaceable batteries
- Foster perceived obsolescence (e.g. fashion trends)
- Systemic obsolescence (e.g. no forward compatibility of software updates)
- Programmed obsolescence (e.g. printer cartridge “empty” notifications)
- Legal obsolescence (e.g. non-electric cars only in special areas)

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Design for Standardisation and Compatibility

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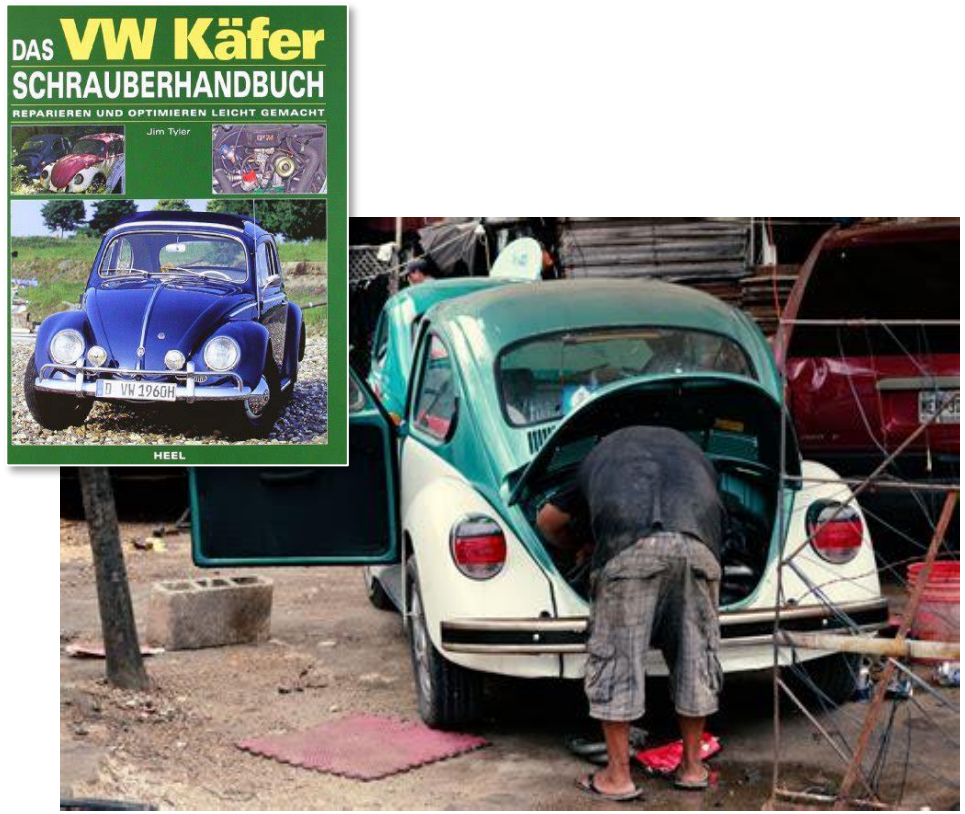
Design for Ease of Maintenanace and Repair



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Design for Adaptability and Upgradeability

FAIRPHONE

RAM „Riegel“

Apps

TESLA

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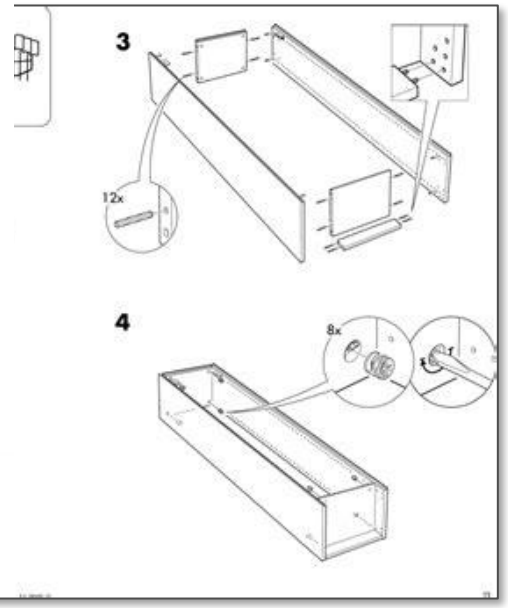
Design for Dis- and Reassembly

AXIOM
Open Source Cinema Camera

bugaboo

IKEA



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Design for Recycling

Choose recycled materials
Minimize number of materials used
Avoid paints, additive, surface treatments
Avoid disfavorable material combinations
Enable easy separation of hazardous, toxic, or not conventionally recyclable

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