Responsible Innovation

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1/5

Google responsible innovation team lead and founder Jen Gennai speaks at the Google Executive Summit in London, Britain, in September 2019. Google /Handout via REUTERS THIS IMAGE HAS BEEN SUPPLIED BY A THIRD...

Microsoft: Judgement Call

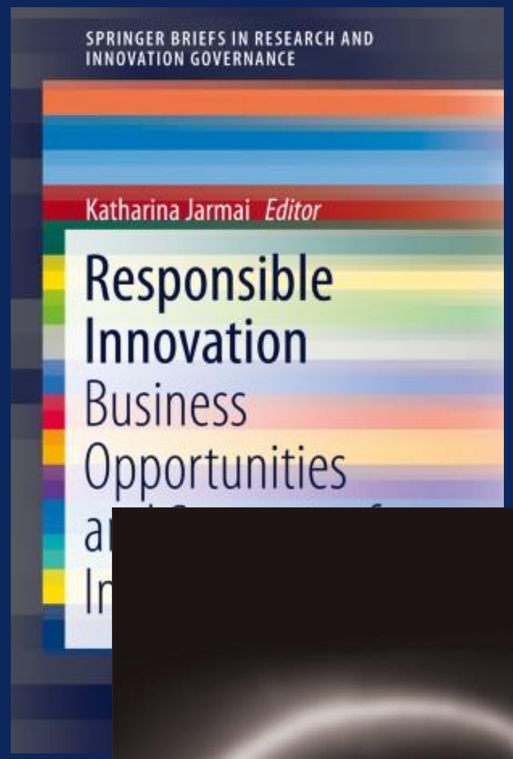
CATEGORY	TYPE OF HARM	CONTRIBUTING FACTORS	*Severity*
Risk of injury	Emotional or psychological distress		▲
	Physical or infrastructure damage		
Denial of consequential services	Economic loss		▼
	Opportunity loss		
Infringement on human rights	Liberty loss		■
	Privacy loss		
	Dignity loss		▼
	Environmental impact		
Erosion of social & democratic structures	Social detriment		
	Manipulation		

Responsible Innovation: The Next Wave of Design Thinking

Building your moral imagination to create a more ethical future

Mira Lane Follow

May 19, 2020 · 6 min read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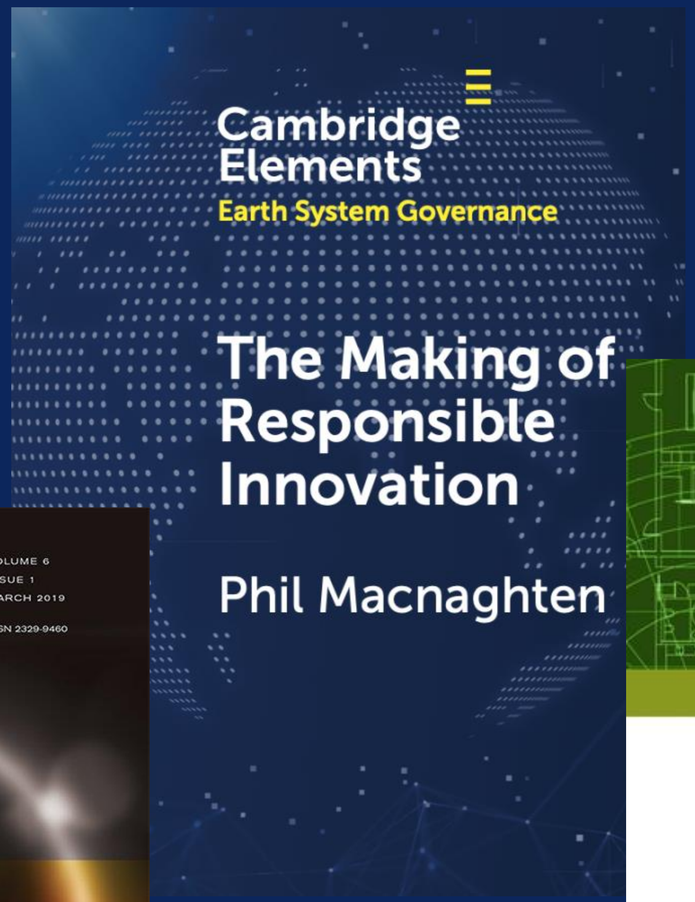
Cambridge Elements
Earth System Governance
The Making of Responsible Innovation
Phil Macnaghten

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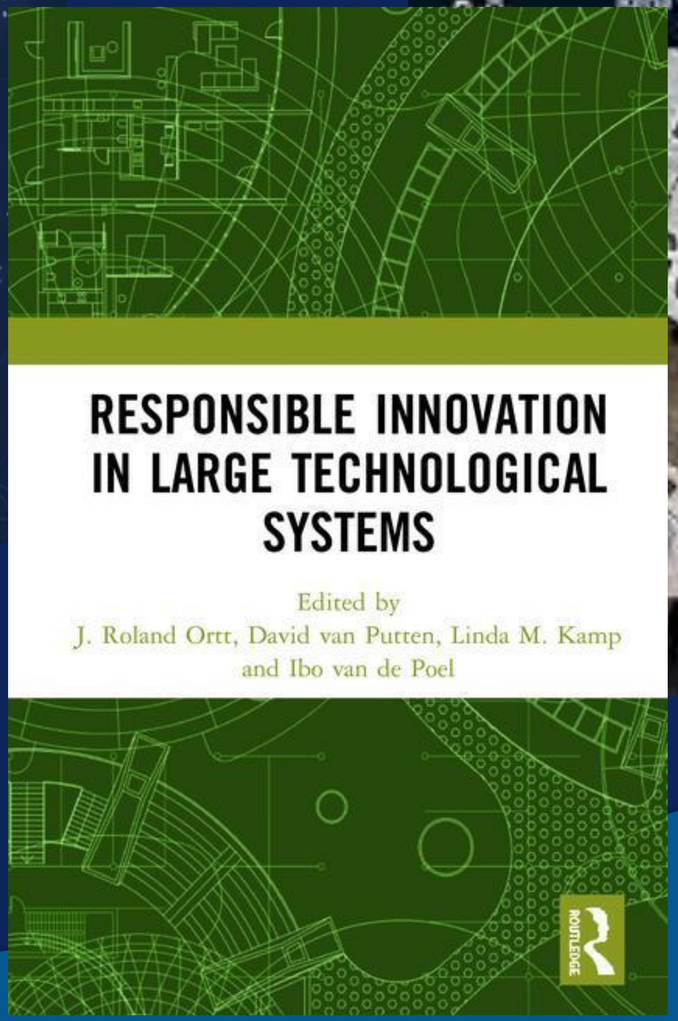
Routledge
Taylor & Francis Group


RESPONSIBLE INNOVATION IN LARGE TECHNOLOGICAL SYSTEMS
Edited by
J. Roland Ortt, David van Putten, Linda M. Kamp and Ibo van de Poel
ROUTLEDGE

INTERNATIONAL HANDBOOK ON
Responsible Innovation
A Global Resource
Edited by
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RESPONSIBILITY
GOVERNANCE
INNOVATION

Expert Group Report to European Commission (2011-2013)

Robert Jan Smits

Basic Idea

- We can try to solve large problems in society by thinking of new functionality, that will not introduce new problems or exacerbate old ones, while proceeding responsibly: i.e. not violating ethical principles or extant laws, and optimize conditions for responsibility of all involved.

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Start Asking:
“This is innovative, but is it good?”

Some innovations: good to have

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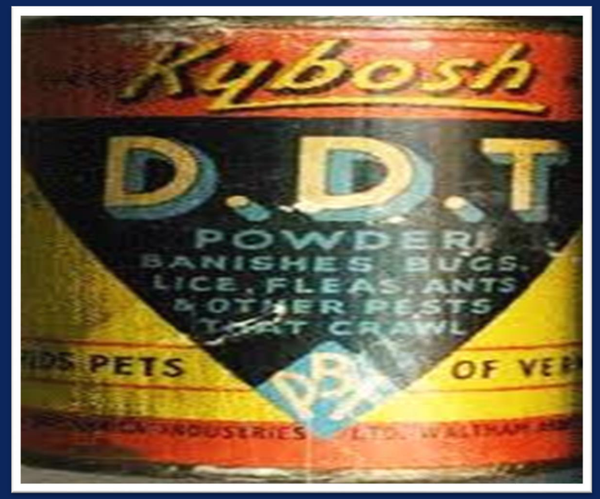
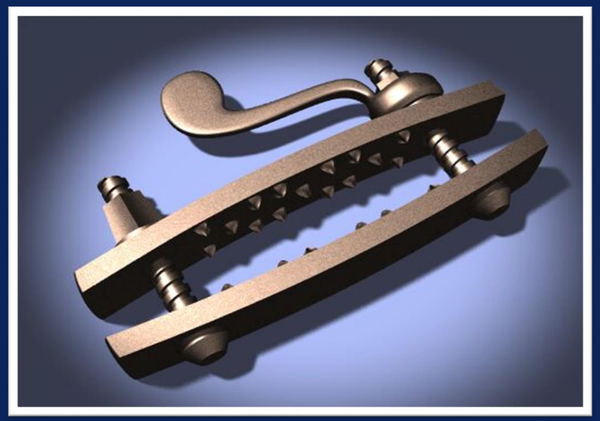
Other innovations: not so good to have





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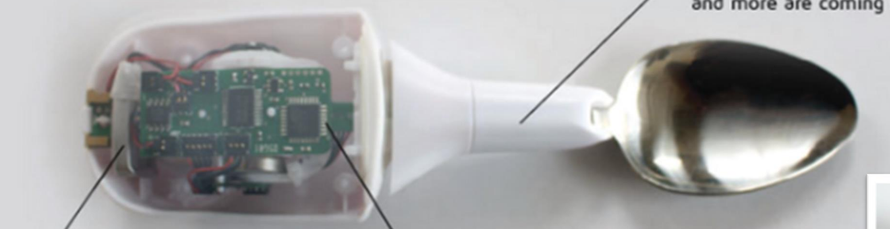
Engineered to Simplify Your Life



Multiple Attachments
Fork, soup spoon, keyholder, and more are coming soon.

Stabilizing Technology
Cutting-edge electronics will work to actively detect and stabilize your tremor.

Battery
Ultra-thin rechargeable battery will last for several days on a charge.

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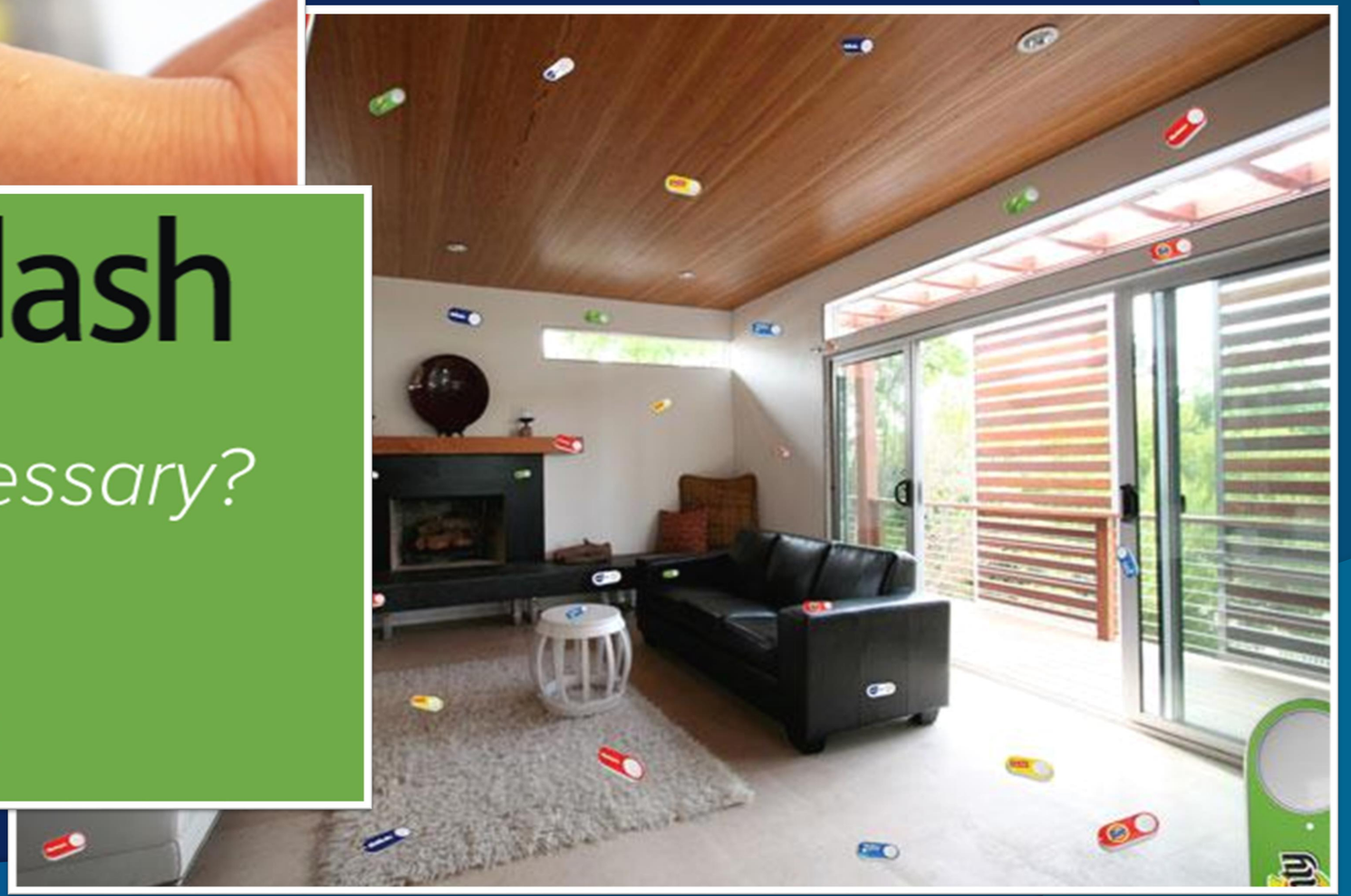
amazondash

Useful or Unnecessary?



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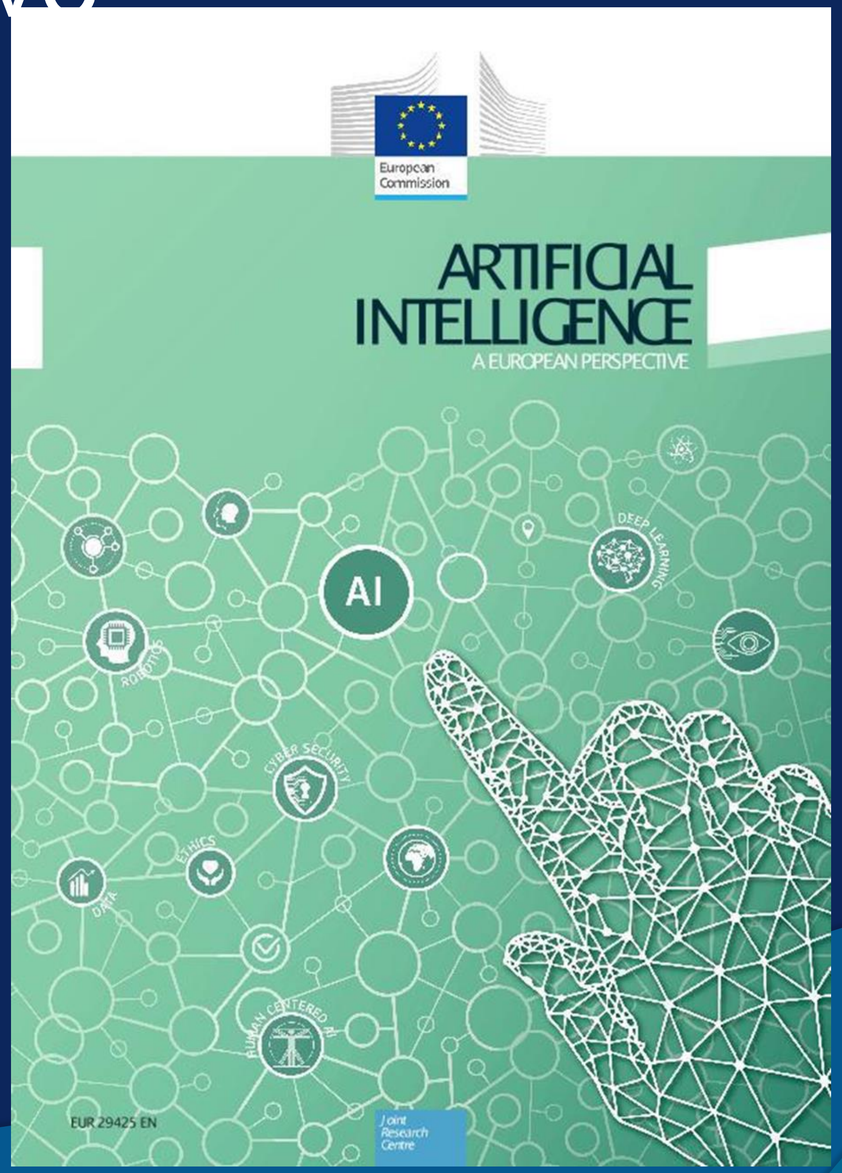
Can we (please) aim at solving urgent and important problems, where we can really make a difference!

The grand challenges of the 21st century

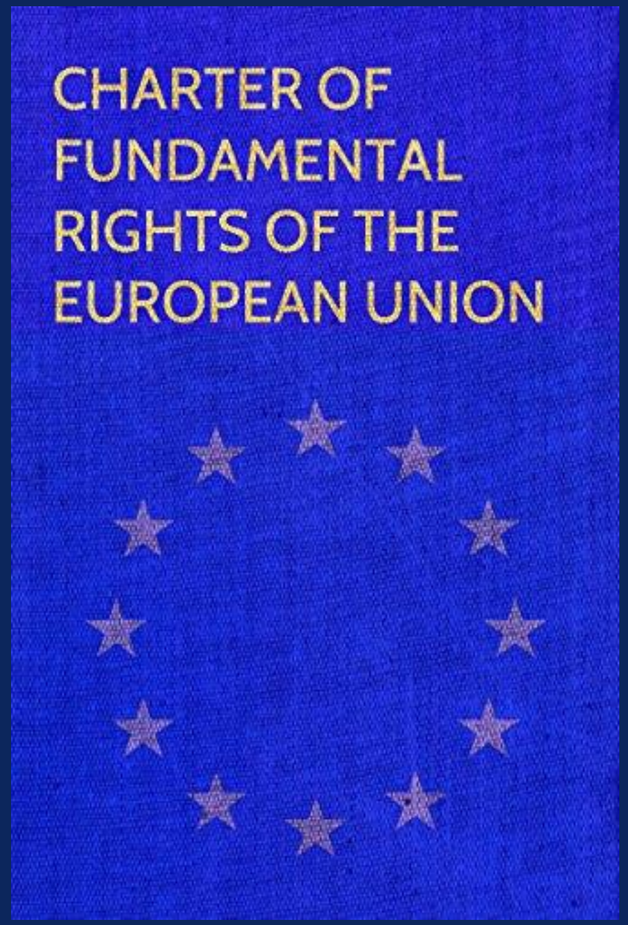
AI: A European Perspective

- “For the EU, it is not so much a question of winning or losing a race between the USA and China, but of finding the way of embracing the opportunities offered by AI in a way that is human-centred, ethical, secure, and true to our core values”.



Europe: The Third Way

Moral and legal Foundations



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Quo Vadis Europa?

Quo vadis, Europe?

Europe: Museum of the World ?

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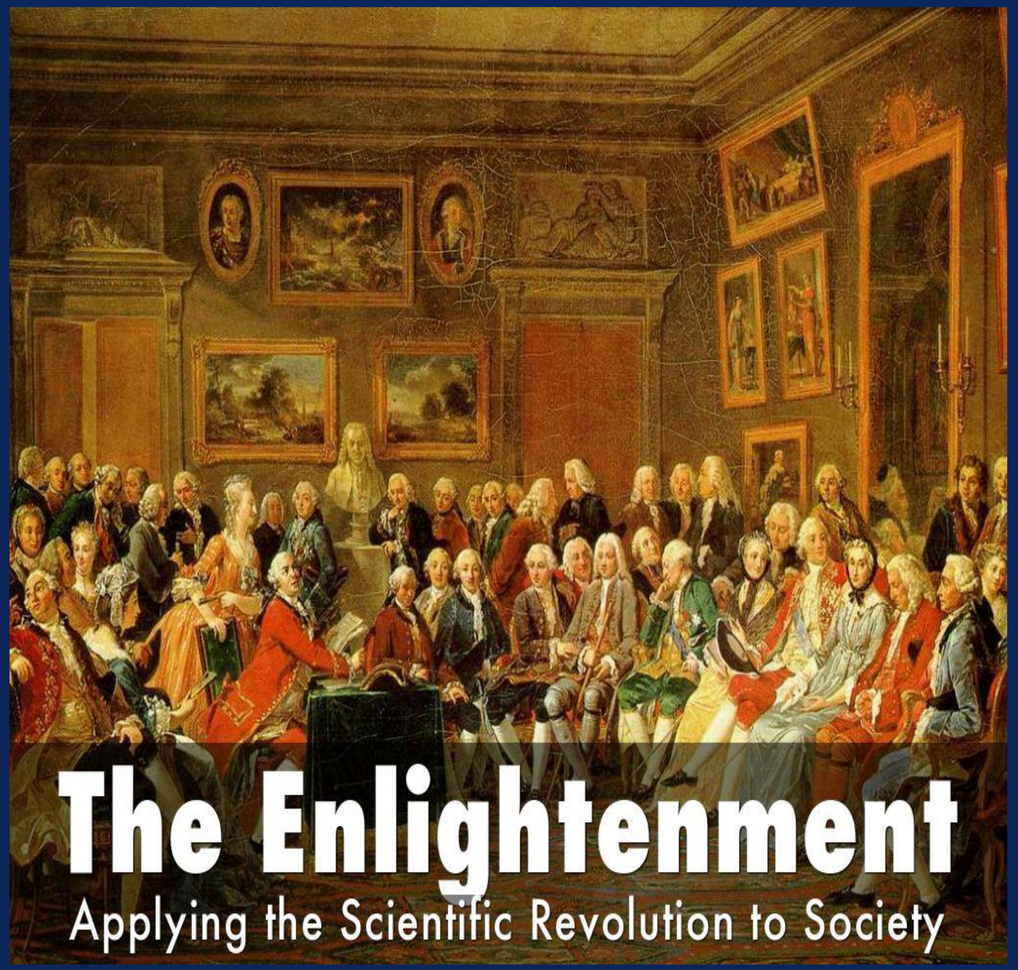
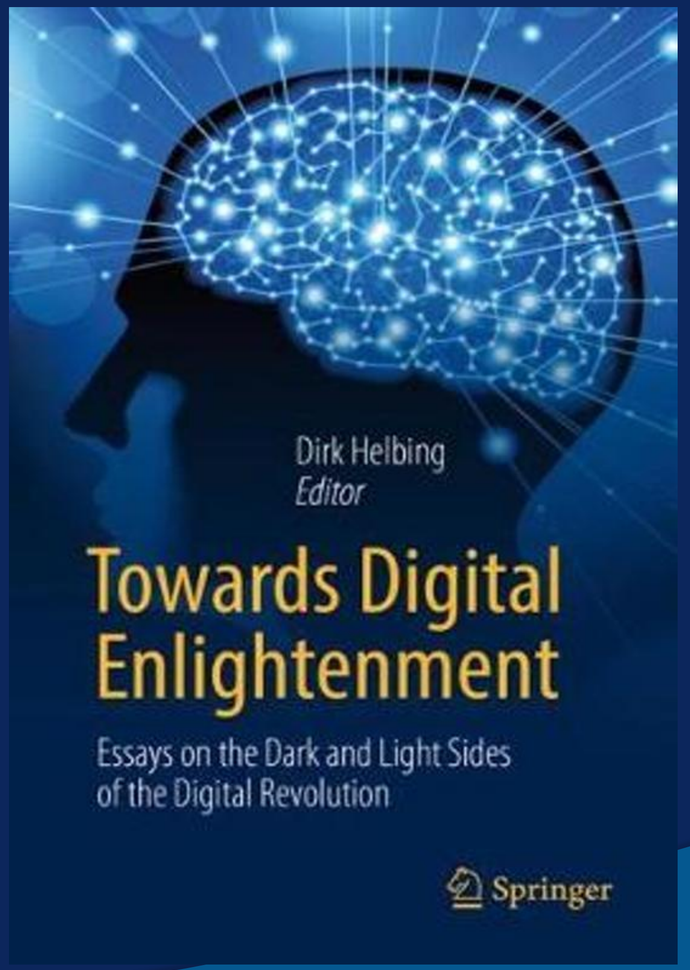
Europe: Cradle of Enlightenment 2.0?





AI and Humanity

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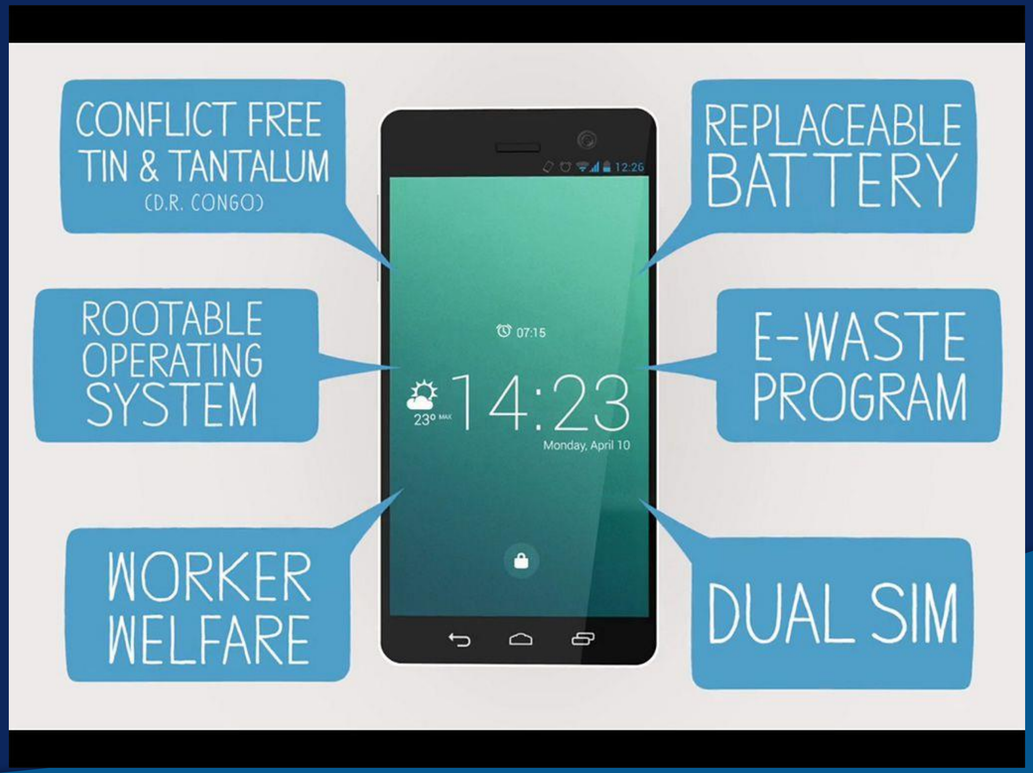
What are we talking about, concretely?

Some examples

‘Ethical’ fairphone

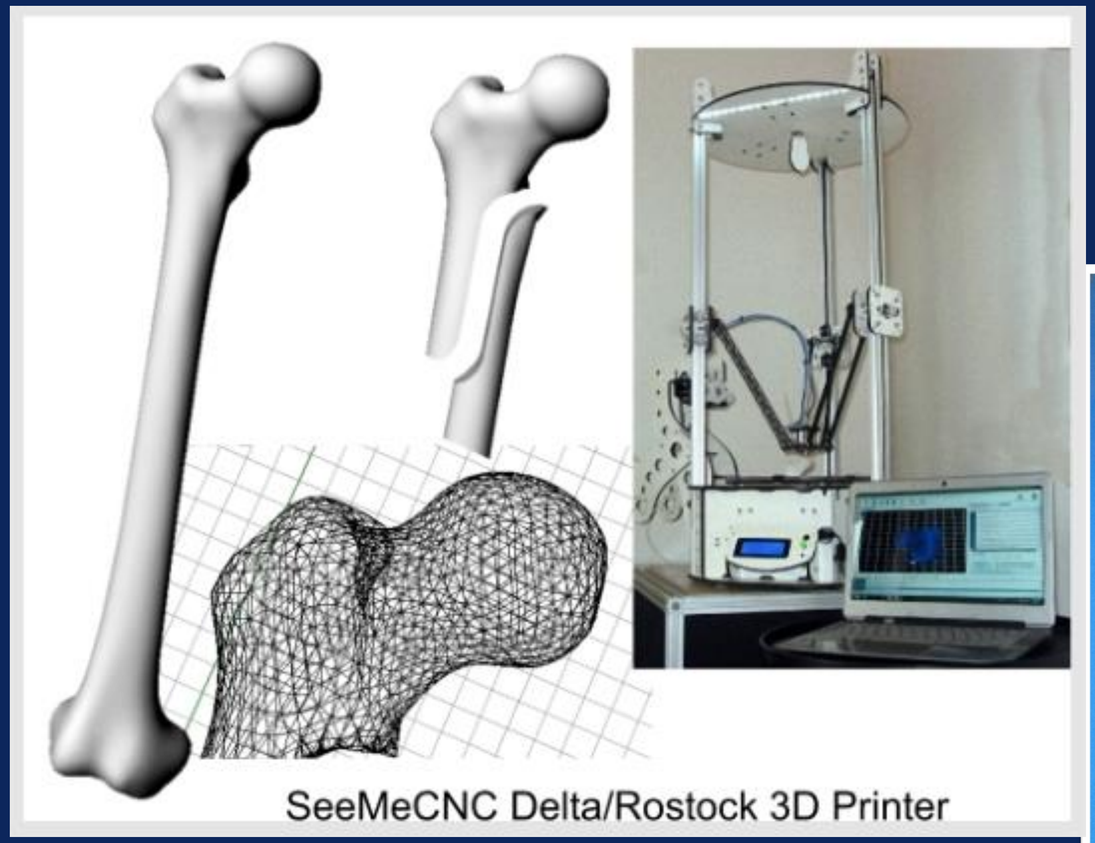
- Conflict-free metals
- Replaceable battery
- Worker welfare
- Recycling program

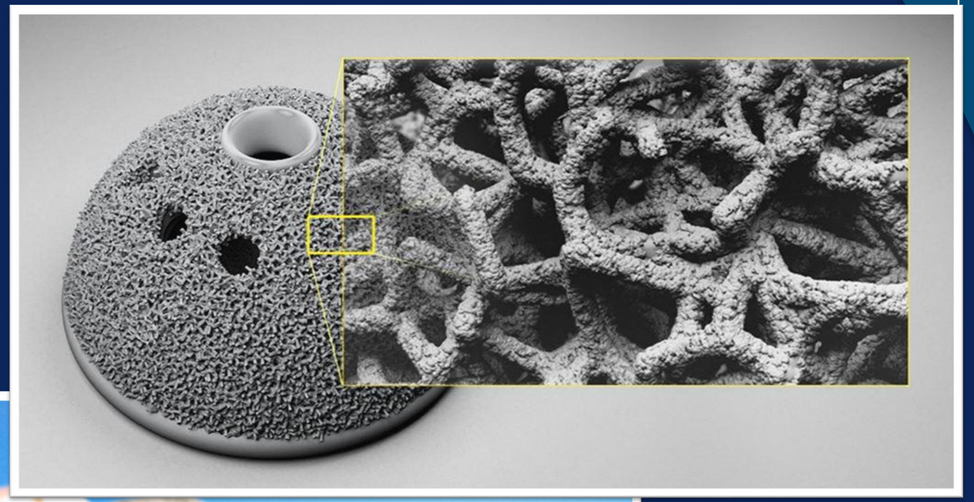


Bronchoscope

- Flexibility
- Reliability
- Accuracy
- Precision
- Speed
- Useability
- Minimally invasive
- Low cost
- Easy to sterilize

Angiogenesis, osteogenesis, bactericide





Innovative asphalt

- Silent in usage
- Safer (better grip)
- Sustainable (reflects light)

New dike designs

- Safety
- Recreation
- Environment

Tidal energy

- Flood defense
- Blue energy
- Ecosystem management

Foldable container

SUSTAINABILITY

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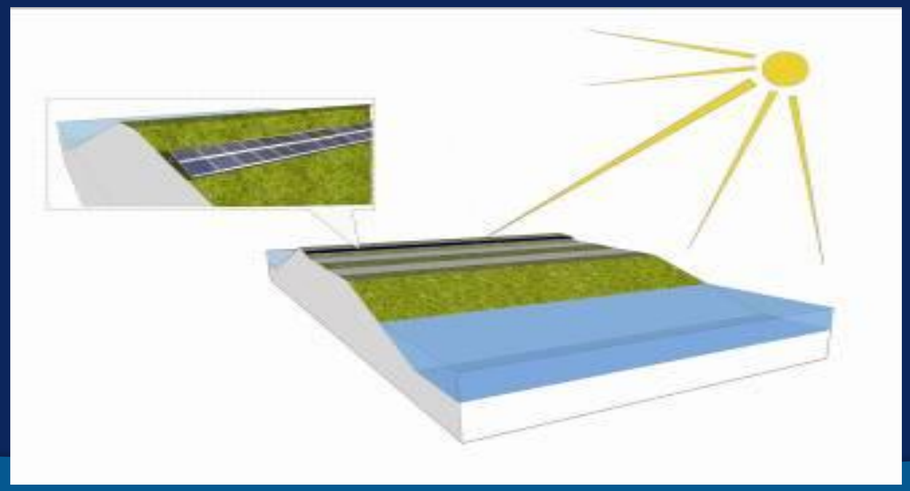
Afsluitdijk

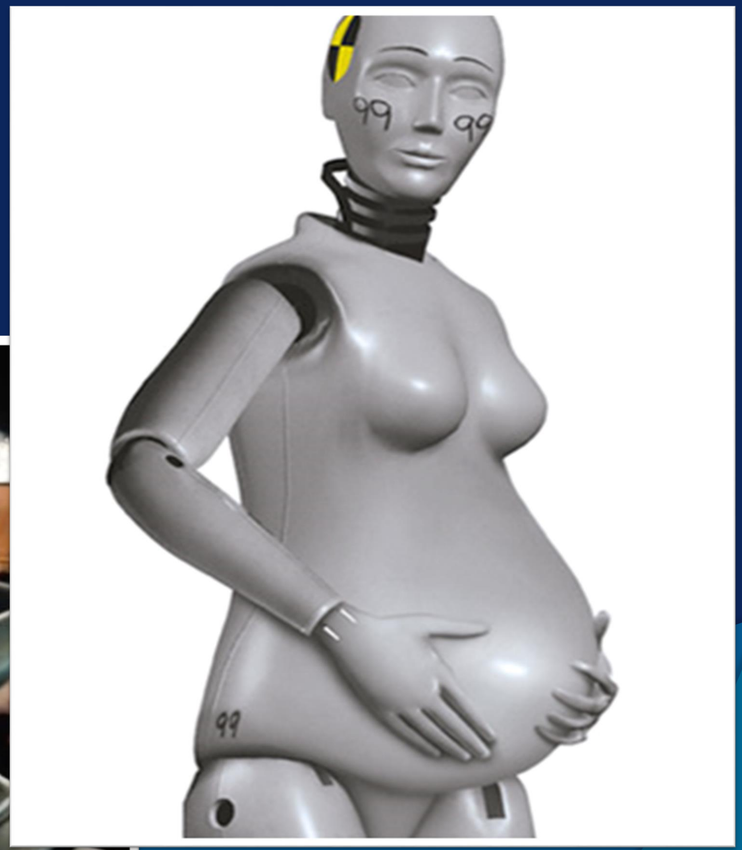
Renewable energy



Building with and for nature

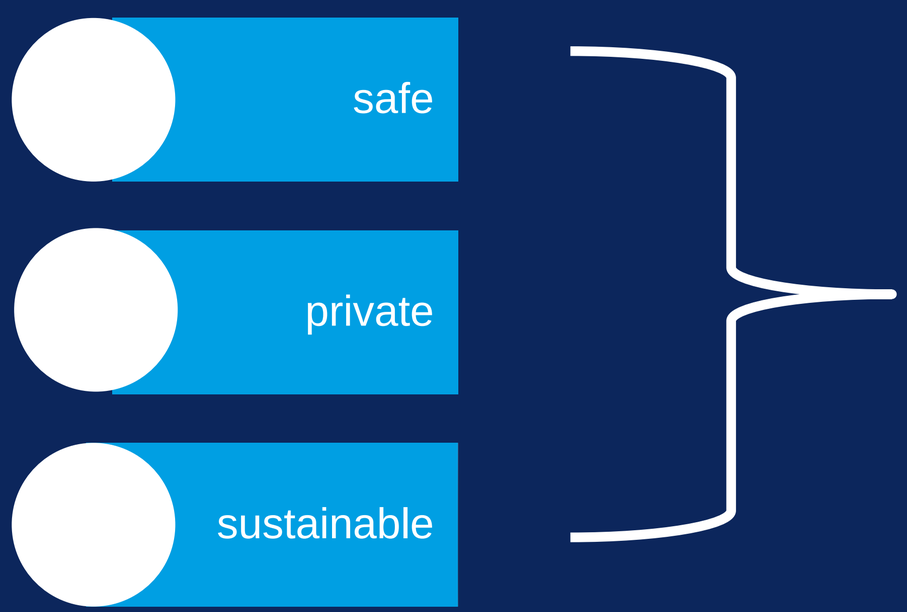
Mobility, recreation, wild life

Volvo: Safety and Inclusion



What are these examples examples of?

simultaneously accommodating multiple values



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Key feature of Responsible Innovation:

An expansion of the set of obligations (not just preferences) that we can simultaneously satisfy

Two Core Ideas

1. Values in Design
2. Innovation to reconcile conflicting values

L. Winner: Do artefacts have politics?

Bias in Search Engines

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Corinthia **Hotel** London
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www.guoman.com
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Map for **london hotels**

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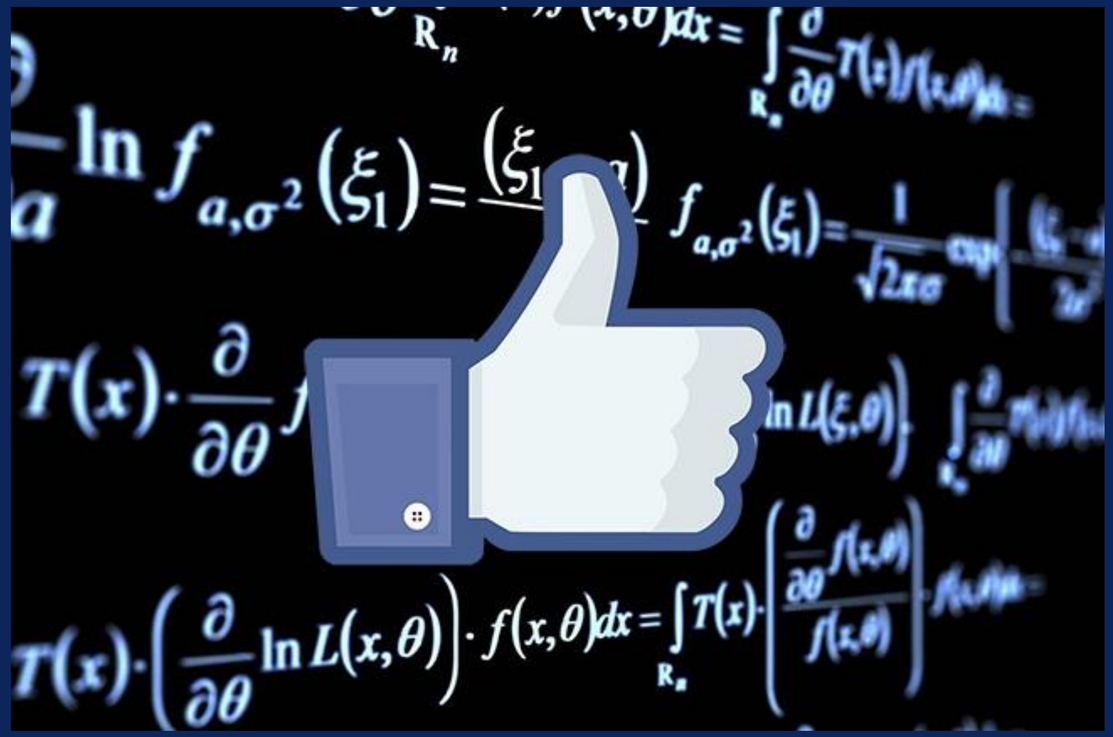
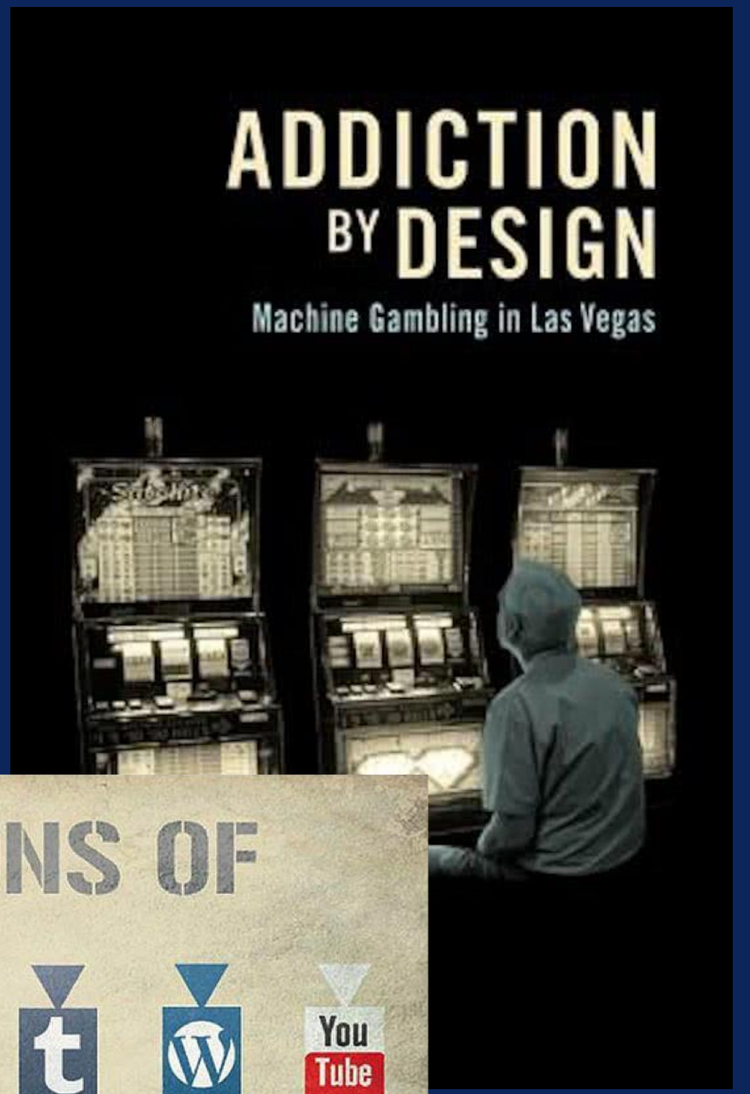
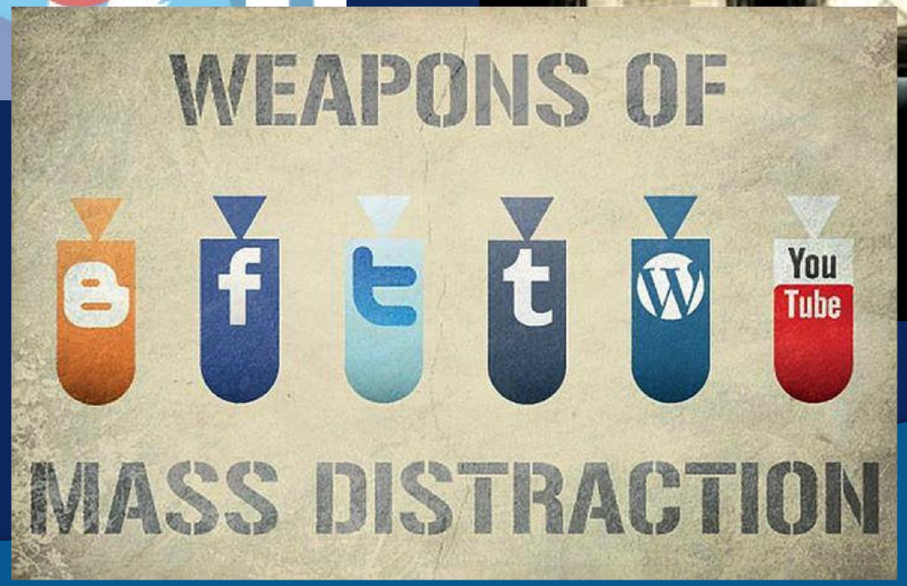
Algorithmic bias in Newsfeed



Hostile architecture

Design for Addiction





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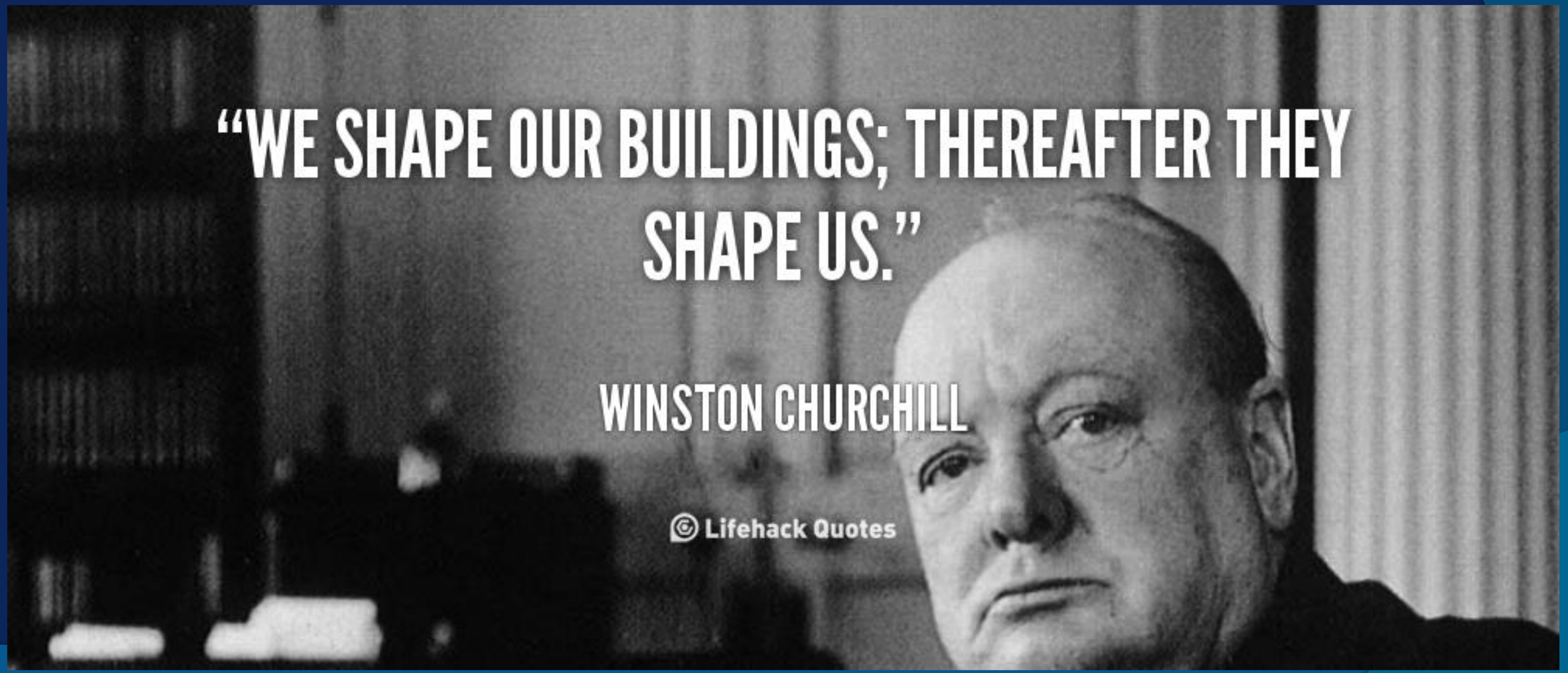
This Idea can and must be used responsibly!!

Smart cities

Churchill


“WE SHAPE OUR BUILDINGS; THEREAFTER THEY SHAPE US.”
WINSTON CHURCHILL
Lifehack Quotes

Values Built into (information) Systems

- Interfaces
- Infrastructures
- Algorithms
- Ontologies
- Code
- Protocols
- Integrity constraints
- Architectures
- Governance arrangements
- Identity Management Systems
- Authorization Matrix
- Procedures
- Regulations
- Incentive structures
- Auction mechanisms
- Voting mechanism
- Monitoring and inspection

What do we need to do and get better at? Design for Values

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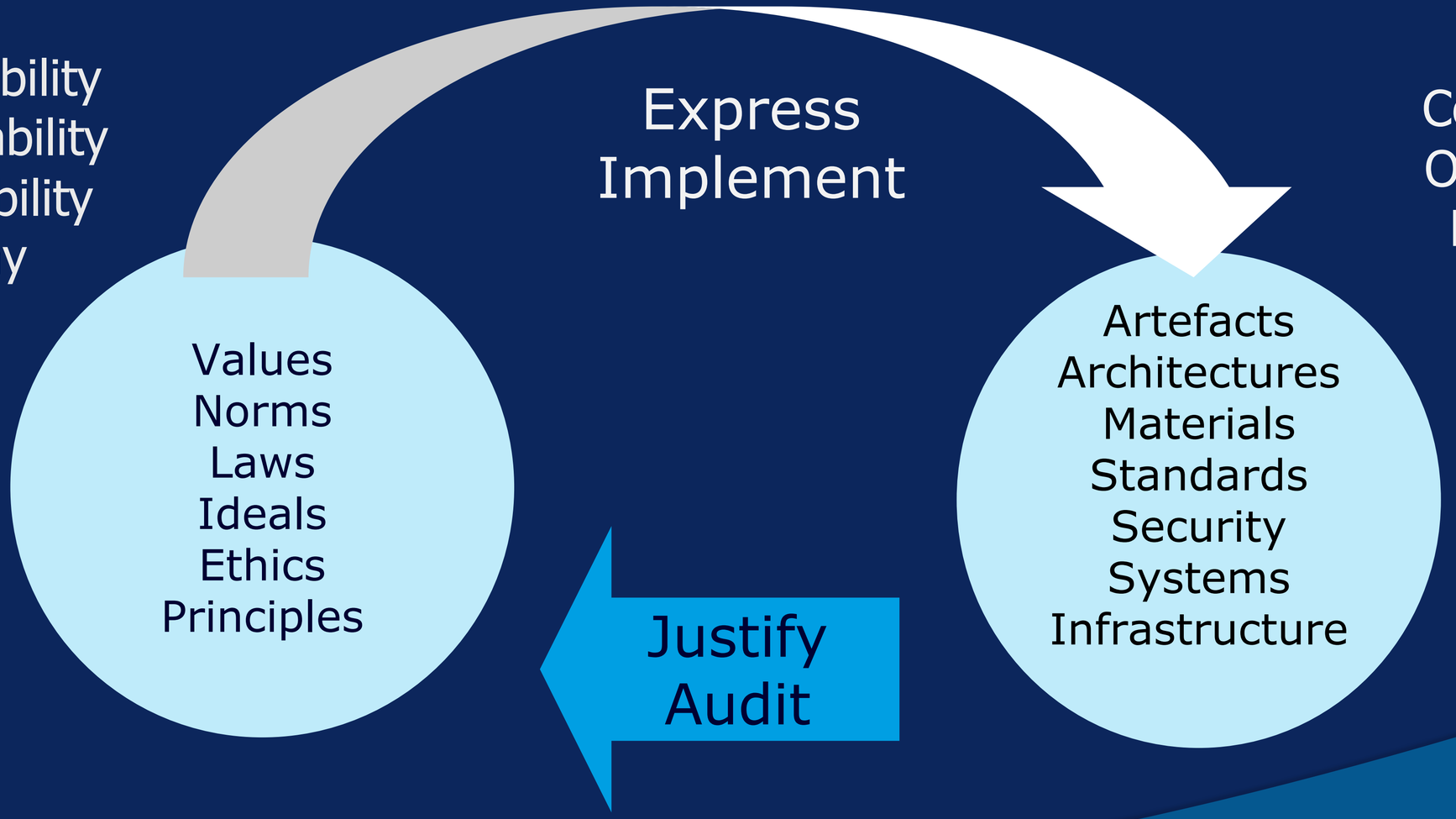
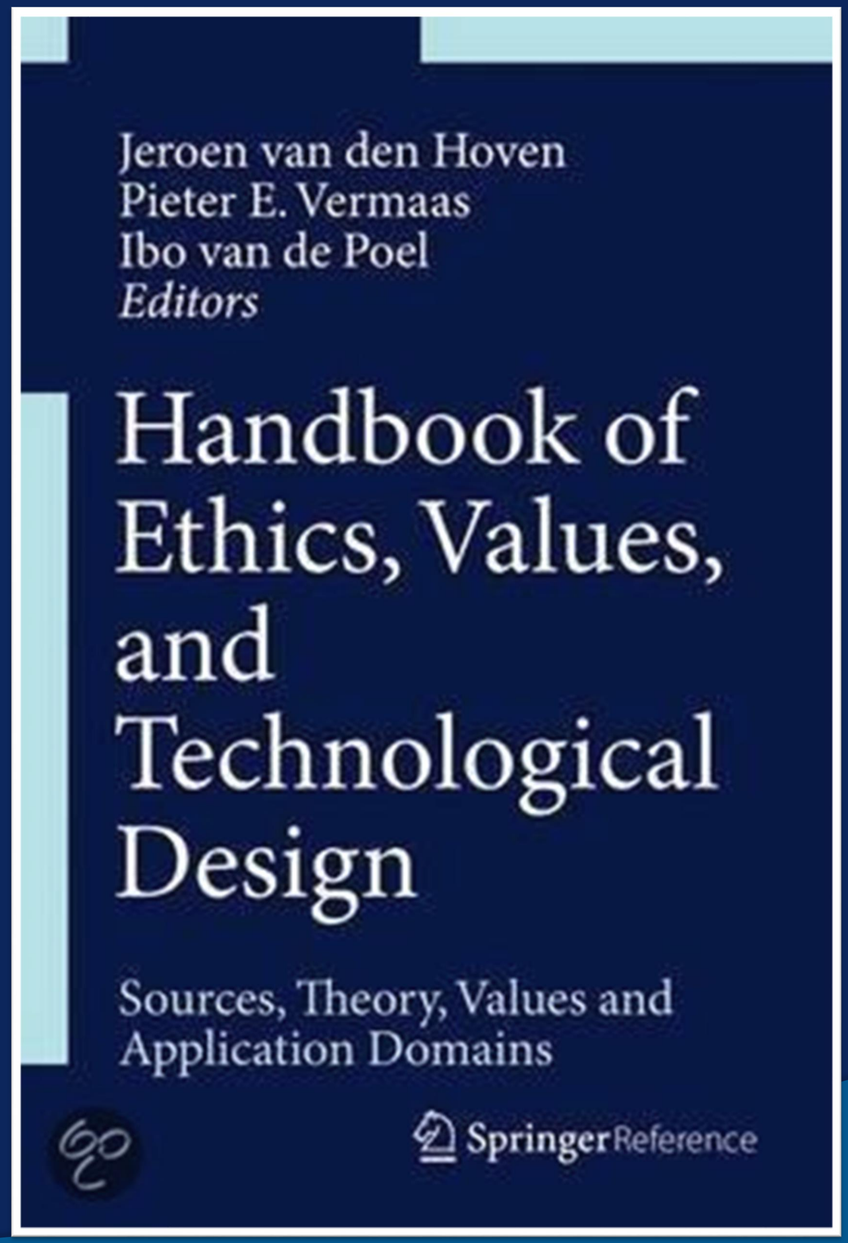
Responsibility
Accountability
Sustainability
Autonomy
Security
Agency
Privacy
Safety



Computers
Oil tankers
Electricity
Airplanes
Hospitals
Reactors
Internet
Roads
Grids

Design for Value X

- Design for privacy
- Design for security
- Design for inclusion
- Design for sustainability
- Design for democracy
- Design for safety
- Design for transparency
- Design for accountability
- Design for responsibility



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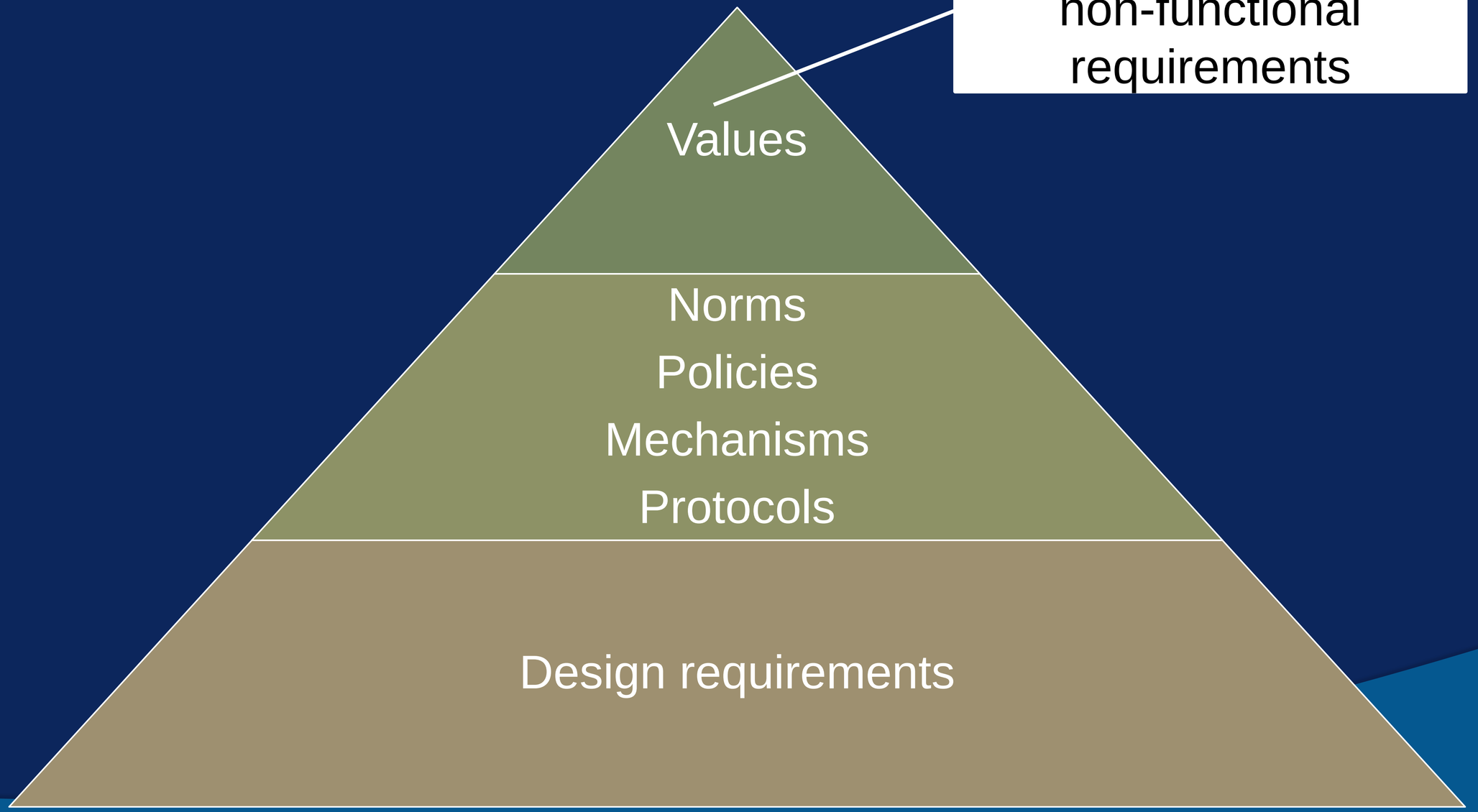
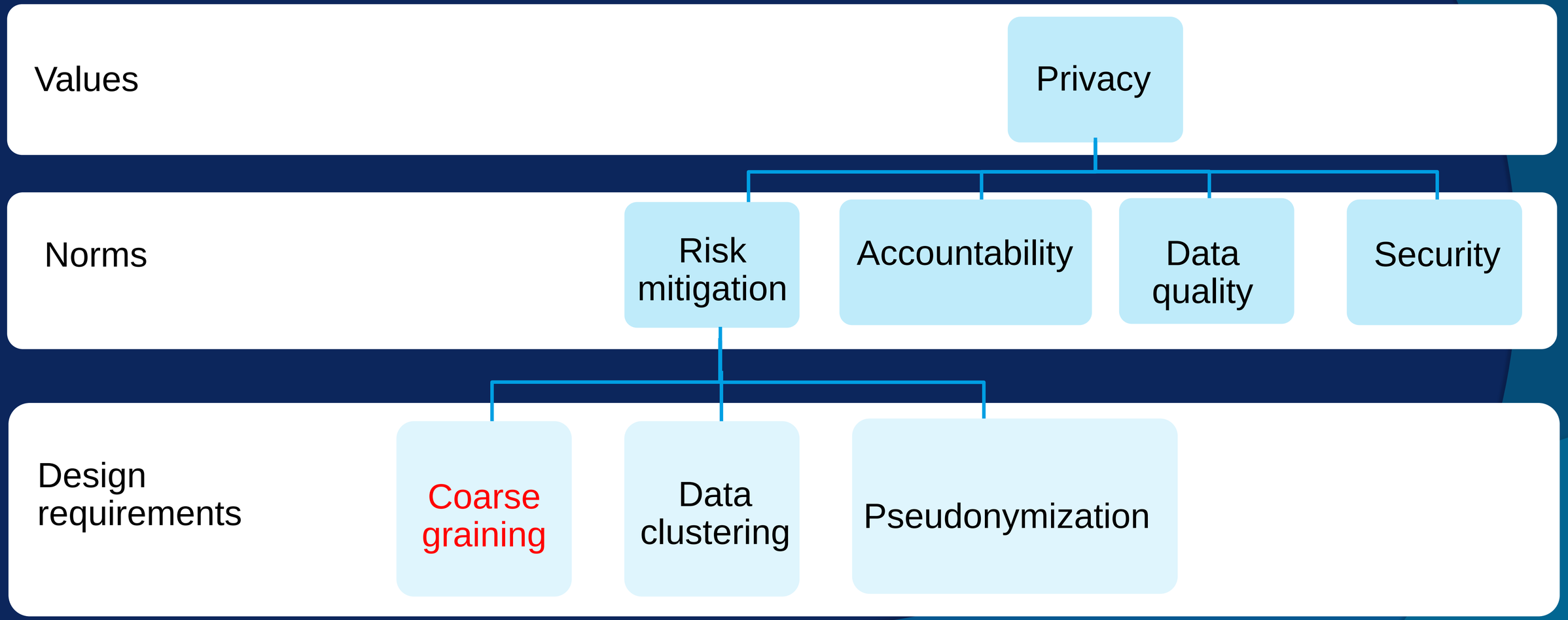
Values hierarchy



Example of a value hierarchy



Value pluralism as challenge and trigger....

- Privacy
- Autonomy
- Equity
- Justice
- Dignity
- Wellbeing
- Transparency
- Democracy
- Safety
- Security
- Sustainability
- Health
- Solidarity

… moral overload

- Prosperity **AND** sustainability
- Security **AND** Privacy
- Efficiency **AND** Safety
- Accountability **AND** Confidentiality

Safety vs. sustainability

A sustainable, but unsafe bus in the area of Delft

Privacy By Design

Suppose you have an

- Obligation to do A and
- Obligation to do B

- Then…..you have an
- Obligation to see to it that
- you can do both A and B

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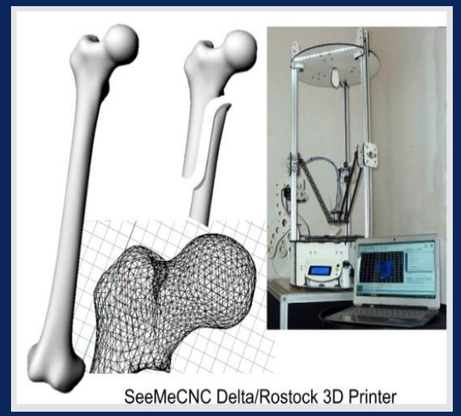

Moral axiom of Responsible Innovation

“If you can change the world by innovation today,

so that you can satisfy more of your obligations tomorrow,

you have a moral obligation to innovate today”

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We need to educate the responsible designers and engineers and applied scientists of the future