

We are in the Drivers Seat – A Magic Carpet Ride

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Congress



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Agenda

- ▶ On Tectonic Plates
- ▶ Three Stories
- ▶ First Story: Take-Make-Waste
- ▶ Second Story: A Green Wonderland
- ▶ Third Story: A Magic Carpet Ride
- ▶ Conclusions



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Project Management and the Anthropocene

- ▶ At the 2008 IPMA World Congress, Mary McKinley stated in her key-note address, that “The further development of the Project Management Profession requires Project Managers to take Responsibility for Sustainability”.
- ▶ 2002: Nobel Laureate Paul Crutzen defines the ANTHROPOCENE ...



concepts

Geology of mankind

Paul J. Crutzen

For the past three centuries, the effects of humans on the global environment have escalated. Because of these anthropogenic emissions of carbon dioxide, global climate may depart significantly from natural behaviour for many millennia to come. It seems appropriate to assign the term 'Anthropocene' to the present, in many ways human-dominated, geological epoch, supplementing the Holocene — the warm period of the past 10–12 millennia. The Anthropocene could be said to have started in the latter part of the eighteenth century, when analyses of air trapped in polar ice showed the beginning of growing global concentrations of carbon dioxide and methane. This date also happens to coincide with James Watt's design of the steam engine in 1784.

Mankind's growing influence on the environment was recognized as long ago as 1873, when the Italian geologist Antonio Stoppani spoke about a 'new telluric force' which in power and universality may be compared to the greater forces of earth,

referring to the "anthropogenic era". And in 1926, V. I. Vernadsky acknowledged the increasing impact of mankind: "The direction in which the processes of evolution must proceed, namely towards increasing consciousness and thought, and forms having greater and greater influence on the surroundings." Teilhard de Chardin and Vernadsky used the term 'noosphere' — the 'world of thought' — to mark the growing role of human brain power in shaping its own future and environment.

The rapid expansion of mankind in numbers and per capita exploitation of Earth's resources has continued apace. During the past three centuries, the human population has increased tenfold to more than 6 billion and is expected to reach 10 billion in this century. The methane-producing cattle population has risen to 1.4 billion. About 30–50% of the planet's land surface is exploited by humans. Tropical rainforests disappear at a fast pace, releasing carbon dioxide and strongly increasing species extinctions. Dam building and river diversion have become commonplace. More than half of all accessible fresh water is used by mankind. Fisheries remove more than 25% of the primary production in upwelling ocean regions and 35% in the temperate continental shelf. Energy use has grown 16-fold during the twentieth century, causing 160 million tonnes of atmospheric sulphur dioxide emissions per year, more than twice the sum of its natural emissions. More nitrogen fertilizer is applied in agriculture than is fixed naturally in all terrestrial ecosystems; nitric oxide production by the burning of fossil fuel and biomass also overrides natural emissions. Fossil-fuel burning and agriculture have caused substantial increases in the concentrations of 'greenhouse' gases — carbon dioxide by 30% and methane by more than 100% — reaching their highest levels over the past 600 millennia, with more to follow.

So far, these effects have largely been caused by only 25% of the world population. The consequences are, among others, acid precipitation, photochemical 'smog' and climate warming. Hence, according to the latest estimates by the Intergovernmental Panel on Climate Change (IPCC), the Earth will warm by 1.4–5.8 °C during this century.

Many toxic substances are released into the environment, even some that are not toxic at all but nevertheless have severely damaging effects, for example the chlorofluorocarbons that caused the Antarctic 'ozone hole' (and which are now regulated). Things could have become much worse: the

ozone-destroying properties of the halogens have been studied since the mid-1970s. If it had turned out that chlorine behaved chemically like bromine, the ozone hole would by then have been a global, year-round phenomenon, not just an event of the Antarctic spring. More by luck than by wisdom, this catastrophic situation did not develop.

Unless there is a global catastrophe — a meteorite impact, a world war or a pandemic — mankind will remain a major environmental force for many millennia. A daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behaviour at all scales, and may well involve internationally accepted, large-scale geo-engineering projects, for instance to 'optimize' climate. At this stage, however, we are still largely treading on terra incognita.

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FURTHER READING

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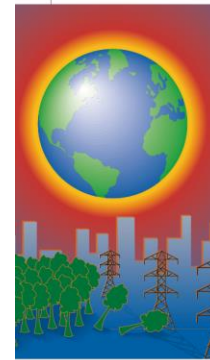
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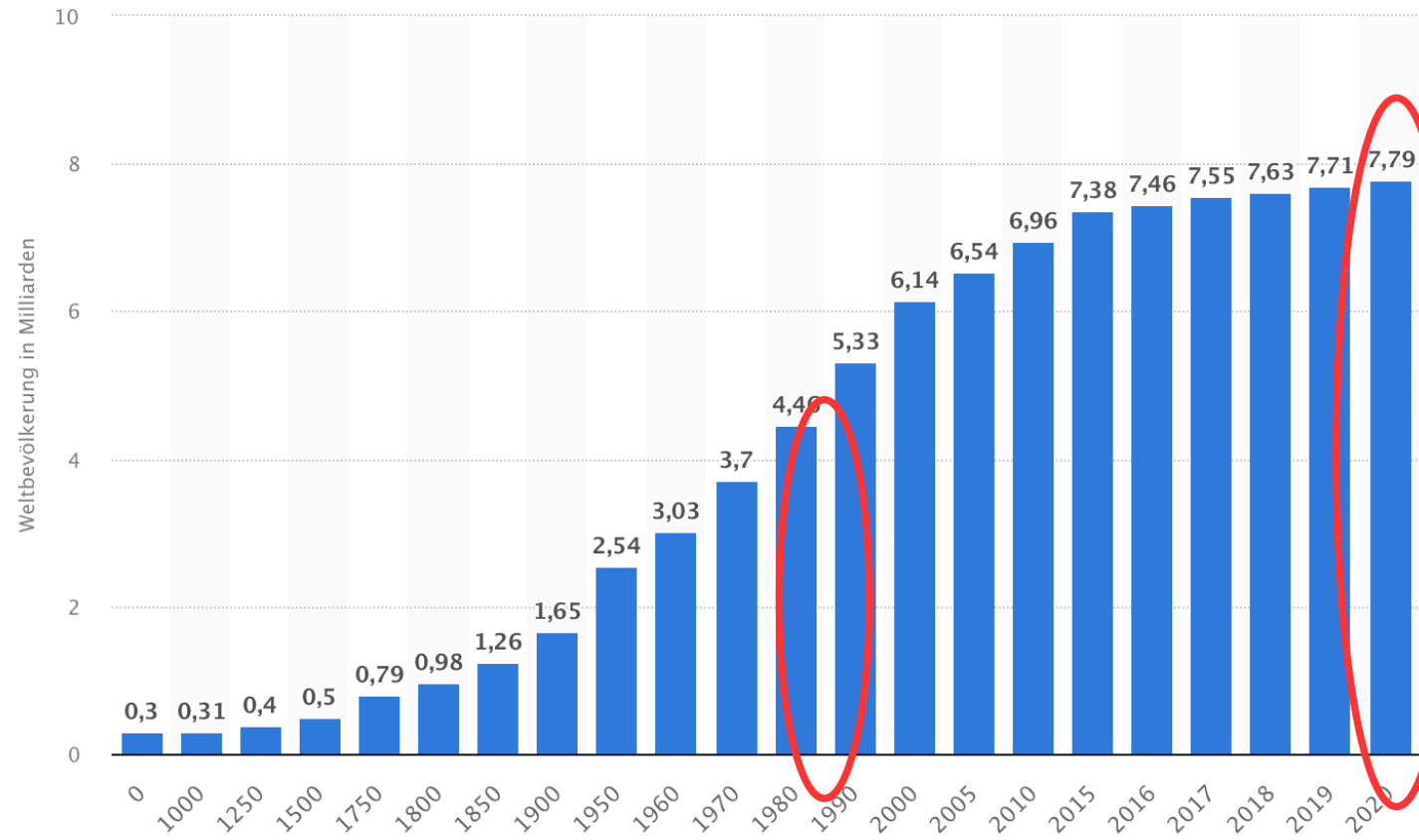
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On Tectonic Plates



Source: nature 2015



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On Tectonic Plates



How to manage planetary future of man?

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Three Stories

- ▶ First: Take-Make-Waste
- ▶ Second: A Green Wonderland
- ▶ Third: A Magic Carpet Ride



<https://www.circularity-gap.world/2023>

Ideology of Controllability

- Re-Planning Champs Elysee, Paris:
- „... challenge stakeholders to step out of their roles and advocate for more open and reflexive production practices.“

Philippe Chiambaretta, 2020; <https://www.pca-stream.com/en/>



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The First Story: Take – Make - Waste

- ▶ Delivery of Project Results into Closed Structures ...
- ▶ Projectmanagement not included in the strategic decision making process (Kerzner, 2019)



Quelle: Deutsches Bergbaumuseum

Take

Make

Waste

Circular Economy
Roadmap
for Germany

acatech/Circular Economy Initiative
Deutschland/SYSTEMIQ (Eds.)

Update December 2021



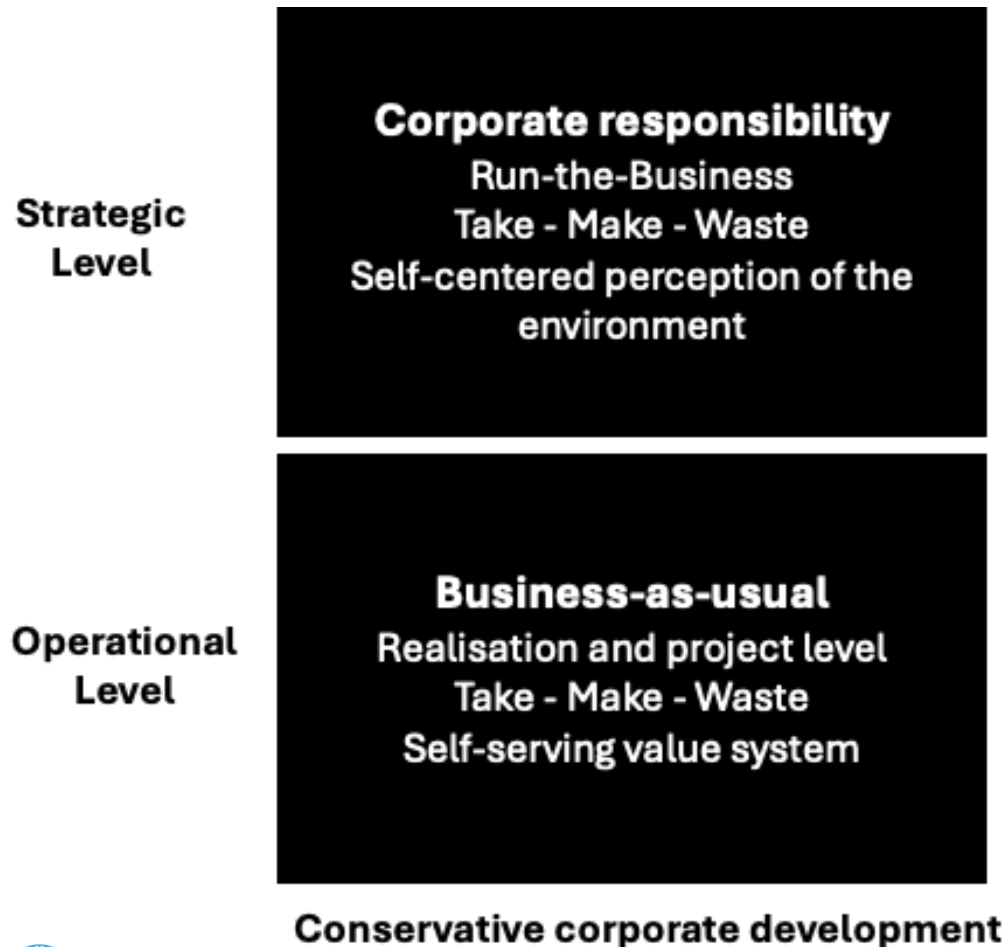
The First Story: Take – Make - Waste



Image Source: HANS HANSEN - FOTOGRAHER

The First Story: Take – Make - Waste

- ▶ Separation of the strategic levels from the operative levels ...



- > Natural capital remains intact ...
 - > Extraction of resources should not extend their restoration
 - > Waste avoidance
- (Gilbert et.al. 1996)

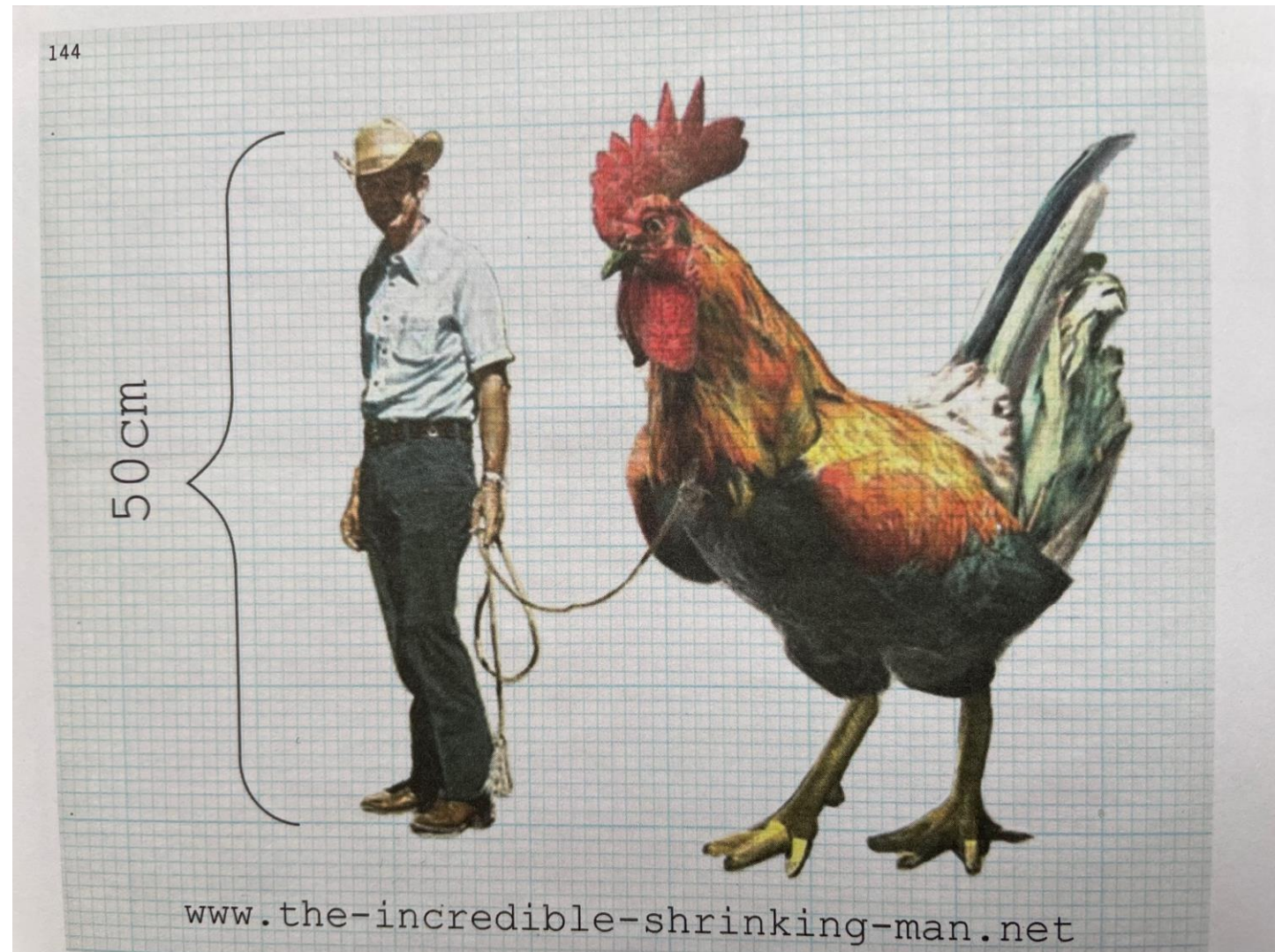
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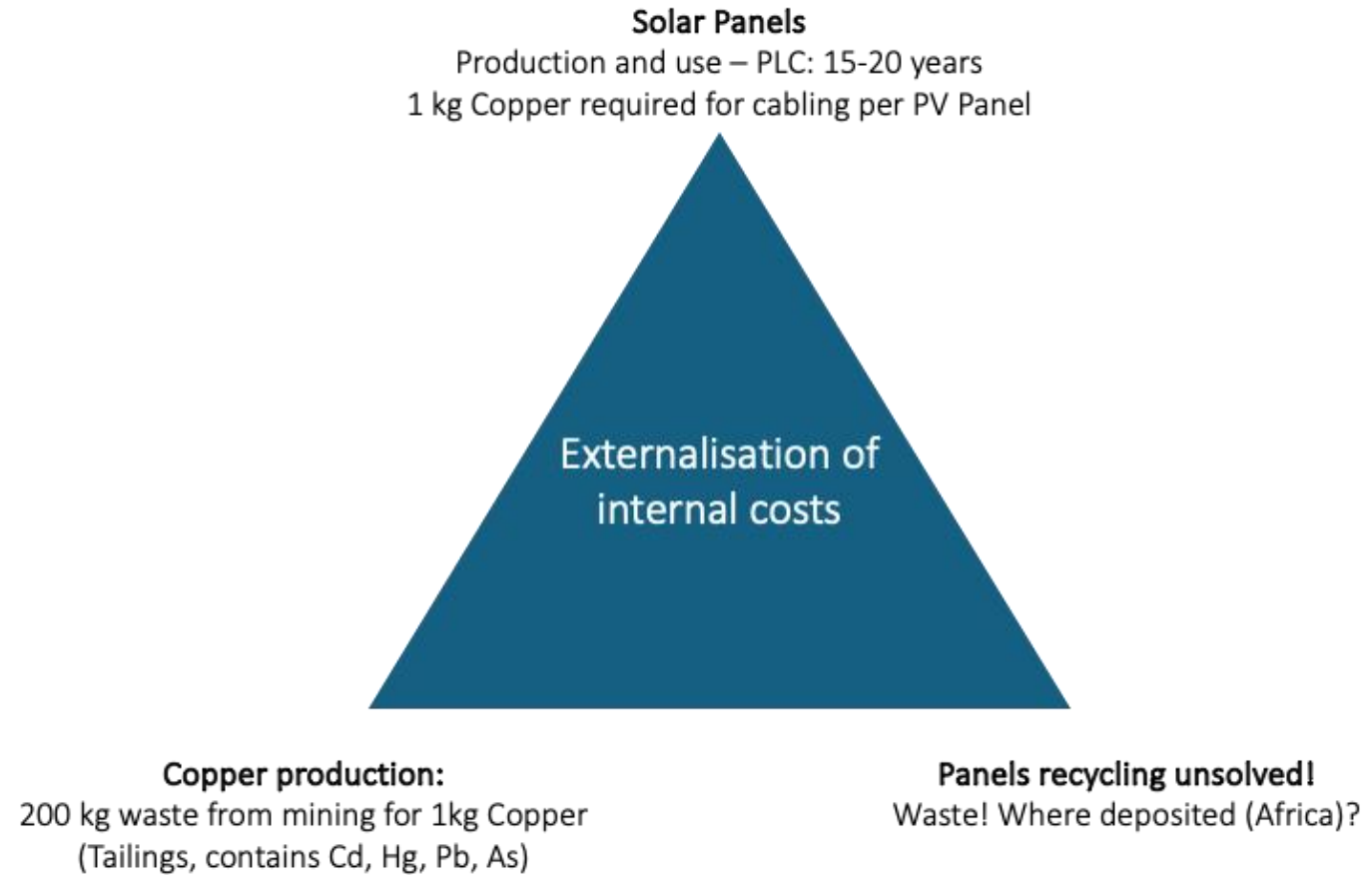
The Second Story: De-Growth

- ▶ De-Growth?
- ▶ ESG / CSRD Regulations?



The Second Story: Fade Out's

► „The Dark Side of the Moon ...“



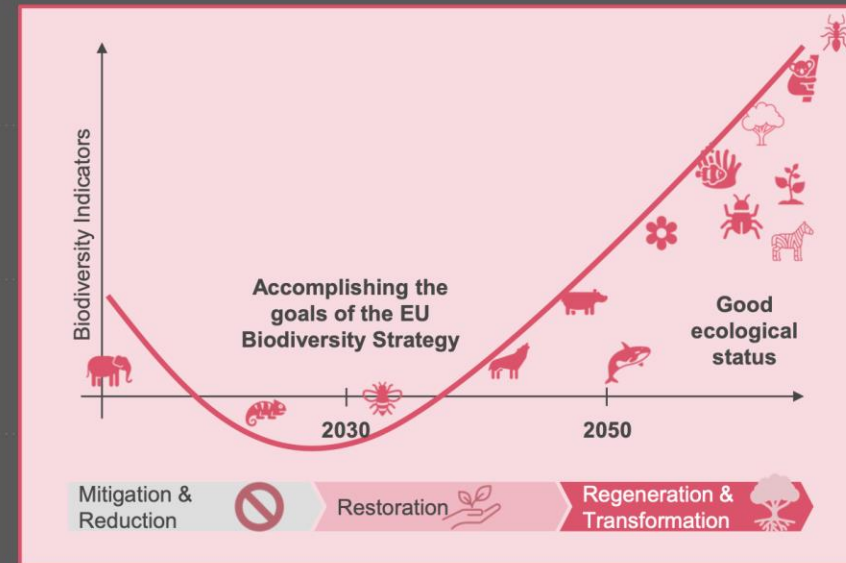
The Second Story: ESG & CSRD?

EU Nature Restoration Law (Proposal)

Concretisation of the EU Biodiversity Strategy and the Global Biodiversity Framework

Nature Restoration Law

- 1 Nature restoration measures should cover at least 20% of the EU's land and sea areas by 2030
- 2 Nature restoration measures should cover all ecosystems in need of restoration by 2050
- 3 The use of pesticides should be halved by 2030
- 4 Stopping pollinator population decline, restoring rivers and marshes, expanding urban green spaces



ESMT Sustainable Business Roundtable
PwC, Angela McClellan

25 May 2023

Source: ESMT Round Table / PwC

The Second Story: Challenges!

- ▶ The Challenge: Getting the Carpet to Fly!



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- ▶ We must understand: Strategic and operational management is not part of the problem, but part of the solution.

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The human epoch

Official recognition for the Anthropocene would focus minds on the challenges to come.

of sediment down rivers and onto the ocean floor. Fossil-fuel use and land clearance have already emitted perhaps a quarter as much carbon into the atmosphere as was released during one of the greatest planetary crises of the past, the Palaeocene–Eocene Thermal Maximum 55 million years ago. Now, as then, corals and other organisms are recording a global carbon-isotope shift. The increasing acidification of the oceans as they absorb carbon dioxide will dissolve carbonate

Humans may yet ensure that these early years of the Anthropocene are a geological glitch and not just a prelude to a far more severe disruption. But the first step is to recognize, as the term Anthropocene invites us to do, that we are in the driver's seat. ■

framework for considering global change and how to manage it.

Human activity is set to leave an indelible mark on the geological record. Deforestation, mining and road building have unleashed tides

➔ [NATURE.COM](#)

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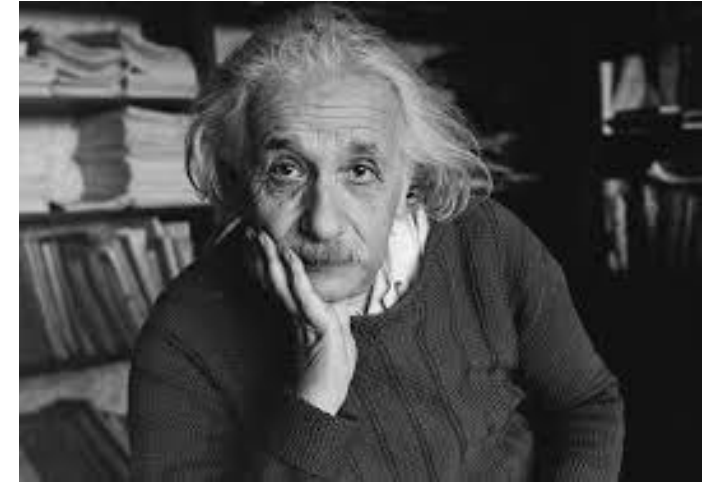
transformation now occurring but to take action to control it.

Humans may yet ensure that these early years of the Anthropocene are a geological glitch and not just a prelude to a far more severe disruption. But the first step is to recognize, as the term Anthropocene invites us to do, that we are in the driver's seat. ■

Paradigm Shift: From Ideology of Controllability to One World – Our Responsibility

- ▶ Problems cannot be solved with the same kind of thinking that created them!

Freely quoted from Albert Einstein



The Third Story: The Super Customer

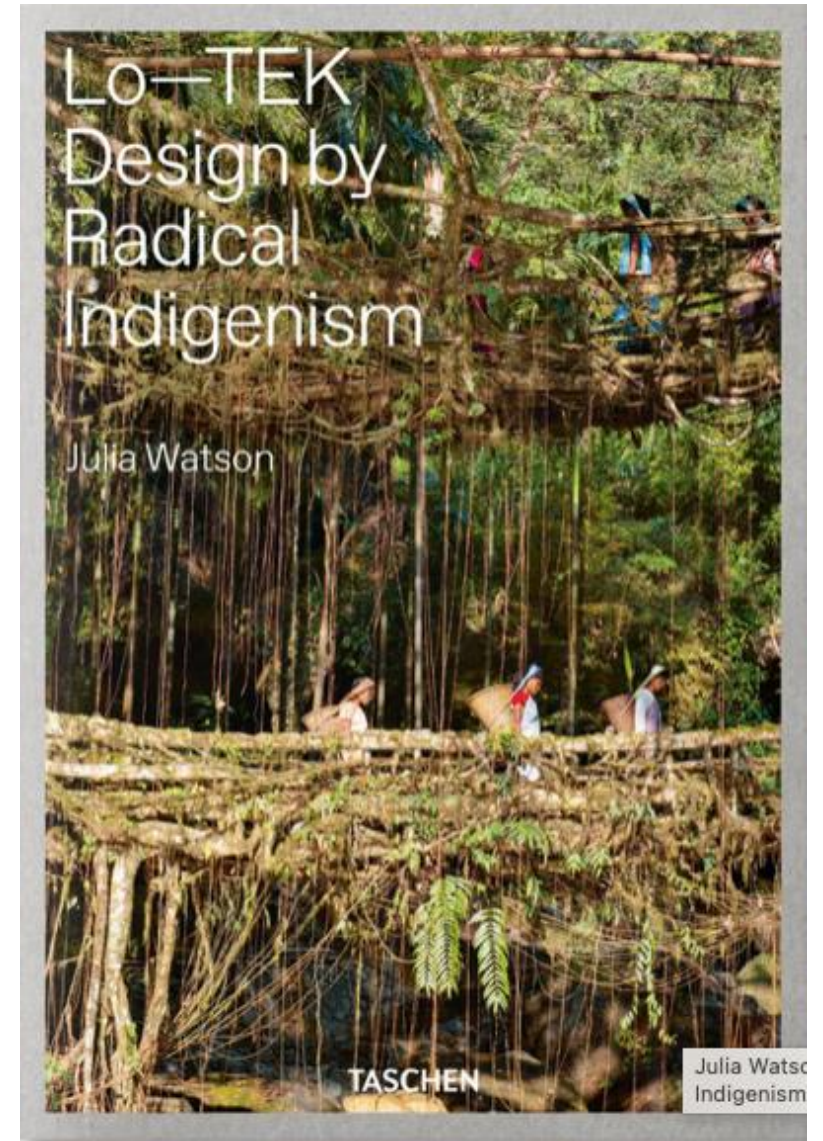
▶ Serve the Client!



Source: NASA

The Third Story : „It’s the Human Factor, Baby!“

- ▶ “This Book is dedicated to the next seven Generations“
- ▶ Project Management for the Next 7 Generations?
- ▶ See: Brundlandt, UN-Comission 1987



The Third Story: Re-Thinking Project Management

- ▶ "Today, we have the linear value chain to the end product, most of which we dispose of. The trick now is to build a circular economy. That starts with **using the products for longer**. On the customer side, **people's buying behavior has to change**. The issue of sustainability must therefore be a purchasing argument and must also be recognizable in the product. Then I have **to design the product differently so that I can do re-manufacturing**, for example - that is, replace components that are changeable. I have to design the components so that I can recycle them well. Only in last place should be waste incineration, where I use green hydrogen to make chemicals again."

Wilhelm Otten, Interdisciplinary Committee Digital Transformation at the VDI, in: Martin Ciupek, VDI Nachrichten, Jan. 2023



Figure 13: Circular Economy (Europarl)

The Third Story: The Infinite Minded Leader

- ▶ Understanding roles for strategic and operational management of Next7G Management for sustainable processes.



The Third Story: Control Systems

Horizon 1: Run-the-Business

Remain competitive
Project Management: Static
(„Waterfall“)
Identification of potential
developments (Products,
Services ...)
Knowledge Management
Risks/Barriers: Low

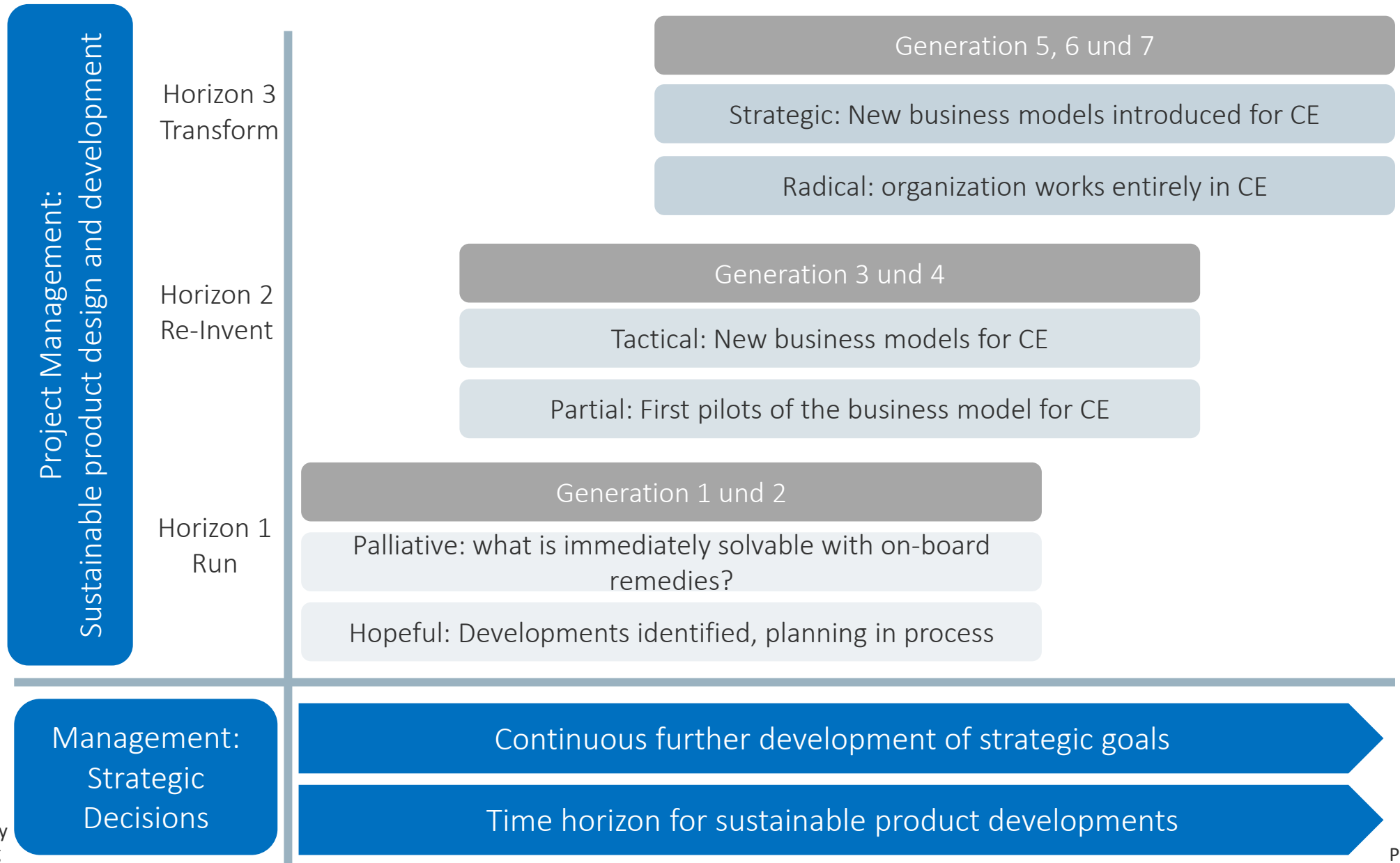
Horizon 2: Re-Invent the Business

Projects leaving „comfort
zones“
Project Management:
Hybride
Results delivered in clearly
defined and manageable
steps
Keeping competitive position
Risks/Barriers: Increased

Horizon 3: Transform the Business

Projects pursue visionary
goals (From Horizons 1 & 2)
Focus: Groundbreaking
developments and circularity
Unknown and new markets
Risks/Barriers: High

The Third Story: A Big Picture



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Conclusions: We are in the Drivers Seat!

From delivering project results into closed structures (stories 1 and 2) acting as a finite minded leader ...
With no links into strategic decions and further product development ... to

... becoming designers of the future ... with Project Life Cycle and Product Lifecycle in focus ... In cooperation with the strategy ...

.. to paradigma change:
Finite minded and delivering project results ... and infinite minded for designing the future, too ...

Conclusions: We are in the Drivers Seat!

Implications for Business Leaders

Business in the Era of Climate Change

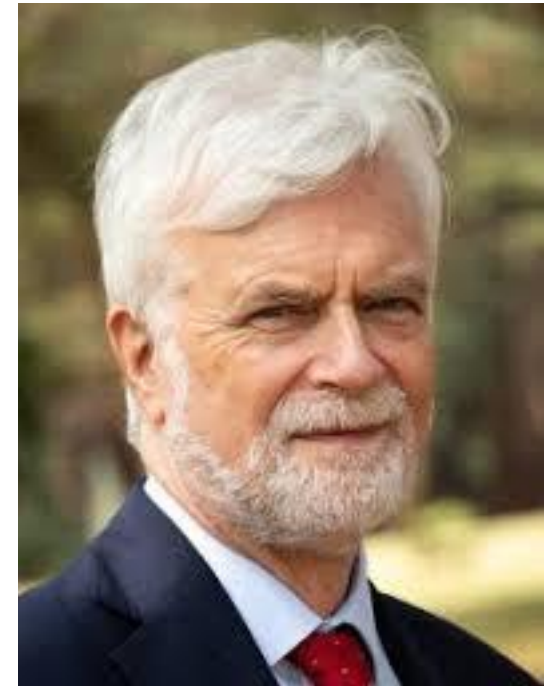
- In the future, climate change will impact business globally, much as technology has in the past, creating winners and losers in nearly every sector.
- Decarbonization will alter economies and geopolitics as countries compete to dominate emerging sectors.
- The low-carbon transition will provide business leaders with the opportunity and challenge of a lifetime.
- Business leaders rising to that challenge is critical if we are to avoid catastrophic climate change.



Conclusions: We are in the Drivers Seat! Let's Ride the Magic Carpet!

- ▶ „... constantly sending out the message that we are all doomed, it paralyses people and prevents them from taking the necessary action to deal with climate change.“
- ▶ „We should not despair if the world exceeds the 1.50 mark. It will not end then, even if it becomes more dangerous.“

Jim Skea – Chair IPCC



Conclusions: Let's Ride the Magic Carpet!

- ▶ "Because the people who are crazy enough to think they can change the world are the ones who do."

Steve Jobs, Stanford 2005



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Something like a resume ...



- ▶ For more than two decades, I sold my skin for others: as project manager, program director, department head, managing consultant in more than 100 projects, across industries at home and abroad. Along the way, I was a hand-holder, a tough manager, a pressure tanker, a shrink, a cook, a barista, an actor, a listener, a private coach, a frequent flyer, a samurai - I've forgotten the rest. Crises and conflicts were part of my daily business. I lived through them and survived them.
- ▶ Studies in Technical Chemistry and Biochemistry, doctorate TU Berlin. 30 years of experience in project and program management. Since 2005 university lecturer Project Management TU Berlin in the international master program Global Production Engineering - GPE, since 2022 lecturer Steinbeis-Next and FH Potsdam, FB Information Sciences.
- ▶ Member of the GPM specialist groups Project Management at Universities, SIG ESG IPMA

Personal Remarks

- ▶ These and all my other publications, lectures, etc. are the result of my personal interest in the subject. I do not receive any funding from official or private sources. My teaching duties at the Technical University of Berlin are honorary positions. I only receive support for travel expenses from the Deutsche Gesellschaft für Projektmanagement (GPM) and the IPMA. Thanks for that support. I'm a member of the IPMA's SIG ESG and the GPM's SIG PM at universities. Memberships extend only to these two organizations.
- ▶ In this context, I would like to thank the team of the IPMA's SIG ESG (Sara Bossi, Lana Butkovic, Gilbert Silvius and Peter Pürckhauer) and our team lead Max Panaro for their thematic support. For this and all other publications and lectures to date, I would also like to thank Mladen Vukomanowicz, Vladimir Obradovic, Peter Thuy, Ingrid Giel, Peter Renner, Konstantin Theile and Günther Seliger, the founder of the Global Production Engineering course at the Produktionstechnisches Zentrum of the TU Berlin. Of course, there are many more people with whom I have discussed these topics in a variety of ways. I would like to take this opportunity to thank them as well.
- ▶ My special thanks also go to all my students from 24 nations for discussions, suggestions and the now almost seventy master's theses over the past twenty years, particularly on the topics presented here.

▶ **THANK YOU!**

