

German Environment Agency

Umwelt   
Bundesamt

2021 EEAC Annual Conference: “Digital Transformation for a Sustainable Anthropocene: Ethical, Green and Inclusive”

# #SustainableDigitalAge

## Towards Our Common Digital Future

**#MarcelJDorsch**

“Digital Change and Sustainability Transformation”  
German Environmental Agency – President’s Office

# #SustainableDigitalAge

# WBGU

**WBGU**  
German Advisory Council on Global Change

**Flagship Report**

**Towards Our Common Digital Future**

**WBGU**  
German Advisory Council on Global Change

**Policy Paper**

**Digital Momentum for the UN Sustainability Agenda in the 21st Century**

**10**

**WBGU**  
German Advisory Council on Global Change

**Policy Paper**

**A European Way to our Common Digital Future**

**11**

**WBGU**  
German Advisory Council on Global Change

**Our Common Digital Future**

The report 'Our Common Digital Future' makes it clear that sustainability strategies and concepts must be fundamentally further developed in the Digital Age. Only if digital change and the Transformation towards Sustainability are constructively interlinked can we make progress with climate-change mitigation, Earth-system protection and human development, and with successfully protecting human dignity. Without formative political action, digital change risks further increasing resource and energy consumption and exacerbating damage to both the environment and the climate. Furthermore, uncontrolled digital change threatens to undermine important foundations of our democracies. It is therefore an urgent political priority to create the conditions needed to place digitalization at the service of sustainable development.

- The three Dynamics of the Digital Age**  
Three Dynamics illustrate very different structural challenges and the kinds of formative action that will have to be taken in the future.
- Place digitalization at the service of global sustainability**  
The risks of digitalization should be contained by regulation and its potentials exploited for sustainability.
- A compass for the digitalized sustainability society**  
The research program aims to provide orientation with 4 categories: inclusion, dignity, sustaining the natural life-support systems and dignity.
- Arenas of digital change**  
Selected areas of digital change show the diversity of challenges and the possibilities of sustainable design.
- Sustainable shaping of the Digital Age**  
The sustainable shaping of the Digital Age requires a global framework for action.
- Charter for Our Common Digital Future**  
A charter for sustainable digital change should serve as an international system of principles, goals and standards.
- Research for a sustainable digital transformation**  
Research should compile the knowledge needed to shape digital change and to underpin public debates.

**#SustainableDigitalAge** **WBGU**  
German Advisory Council on Global Change

**Transforming our World in the Digital Age**

Digitalization fundamentally changes the possible pathways for future development. At the same time, implementing the 2030 Agenda for Sustainable Development requires a fundamental transformation of the economy and society. So what could be more appropriate than to harness the momentum of digitalization to launch decisive stimuli for the Transformation towards Sustainability? What interventions and collaborations does this require? And what are the risks if such a technological revolution is not properly monitored? The world society is only gradually beginning to discuss such questions. Yet it's high time. This is an invitation.

[www.wbgu.de](http://www.wbgu.de)



**WBGU**  
German Advisory Council on Global Change

**Our Common Digital Future**  
**Draft Charter for a Sustainable Digital Age**

**Preamble**

Conscious of the responsibility of all societies for our common digital future, conscious of the urgent need for decisive action to limit anthropogenic climate change and sustain the natural life-support systems, and conscious of the responsibility of humankind in the new geological epoch of the Anthropocene, endeavouring to work towards a humane vision for a networked global society of the Digital Age in which civilizational and human potential can fully unfold, recognizing the Universal Declaration of Human Rights, the report of the World Commission on Environment and Development, the United Nations Conference on Environment and Development, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the United Nations-sponsored World Summit on the Information Society, the United Nations 2030 Agenda with its Sustainable Development Goals, the Paris Agreement and similar processes launched by informal initiatives, the undersigned acknowledge and commit to the implementation of the following goals, principles, freedoms, rights and obligations.

**Goals and principles**

- Human dignity shall also be inviolable in digital space. Everyone shall have the right to digital identity, sovereignty, data protection and privacy. This shall also include the right to evade digitalization in the private sphere and the right to be informed if an interaction partner is not a human being but a technical system.
- The development of digital technologies and digitalized infrastructures shall always be geared towards sustaining the natural life-support systems. The planetary goal rules must be observed, global and local environmental problems must be avoided. The polluter pays, cooperation, integration and precautionary principles must be observed as guiding principles.
- The development of digitalized infrastructures shall always be oriented in such a way that it is accessible to all and offers equal opportunities for social participation and realisation. For the underlying technologies such as microelectronics, tele- and data-communication networks, data processing and artificial intelligence, information on the basic functions should be accessible to all worldwide.
- The rights of the individual to the protection of individual freedom of development in the digital space shall be guaranteed. These rights shall include informational self-determination, the protection of freedom of expression and digital identity, the protection of minorities and protection against discrimination. All people shall have the fundamental right to inspect and correct data stored about them, to determine their use and to have them deleted. These rights shall be legally enforceable.

[wbgu.de/en](http://wbgu.de/en)

# #SustainableDigitalAge

## #SustainableDigitalAge Our Common Digital Future

German Advisory Council on Global Change

Our Common Future with the title of the Special Report, which was published by the UN in 1987, is turned the basis for a worldwide discussion on sustainability. The 2030 Agenda of the UN, with its 17 Sustainable Development Goals (SDGs), is entitled 'Transforming Our World'. In view of the changes, which are described as disruptive, caused by the digital technology revolution, the WBGU's strategic approach relates to the Transformation towards Sustainability. This chart illustrates the WBGU's assessment of the current state of digitalisation in relation to achieving the SDGs.

**PLANET**  
Digital Innovation Needs Direction and a Framework

**PEOPLE**  
Future-proof Education for Digital Literacy

**PROSPERITY**  
Establish a Digitally Supported Circular Economy Worldwide

**PLACE**  
Charter as a Normative Reference Point

**PARTNERSHIP**  
Modernize Sustainability Governance

## Transforming our World in the Digital Age

German Advisory Council on Global Change

Digitalisation fundamentally changes the possible pathways for future development. At the same time, implementing the 2030 Agenda for Sustainable Development requires a fundamental transformation of the economy and society. So what could be more appropriate than to harness the momentum of digitalisation to search for a sustainable future? What interventions and call-laborations does this require? And what are the risks if such a technological revolution is not properly managed? The world society is only gradually beginning to discuss such questions, but it's a high time. This is an invitation.

**WBGU's Mission: Science for a Sustainable Future**

## Literacy and Agency Instead of 'Hope, Horror and Hype'

Digitalisation opens up a wide spectrum for our possible future, however, humanism is an embedded global society to just an unmanageable in a digital age. A lack of popular scientific education and speculative visions of the future reveals the immense spectrum that what kind of future do we want to be together?

**Digital Literacy**  
**Human Development**  
**Digital Empowerment**  
**Digital Inequality**  
**Inequality**  
**Digital Sustainability Society**

**Digital Change Needs to be Actively Shaped to Ensure Sustainable Futures**

## Shaping the Digital Age Sustainably

Many SDGs will remain relevant beyond 2030. The sustainability agenda therefore needs to be rethought and further developed over the long term in the context of digital change. The UN should prepare a grand plan for these challenges. It is a matter of the progress of a sustainable world society that lives with planetary goals and is based on global solidarity, intergenerational dimensions and a newly defined inequality. Appropriate levers for this would be:

**Decide of Action**

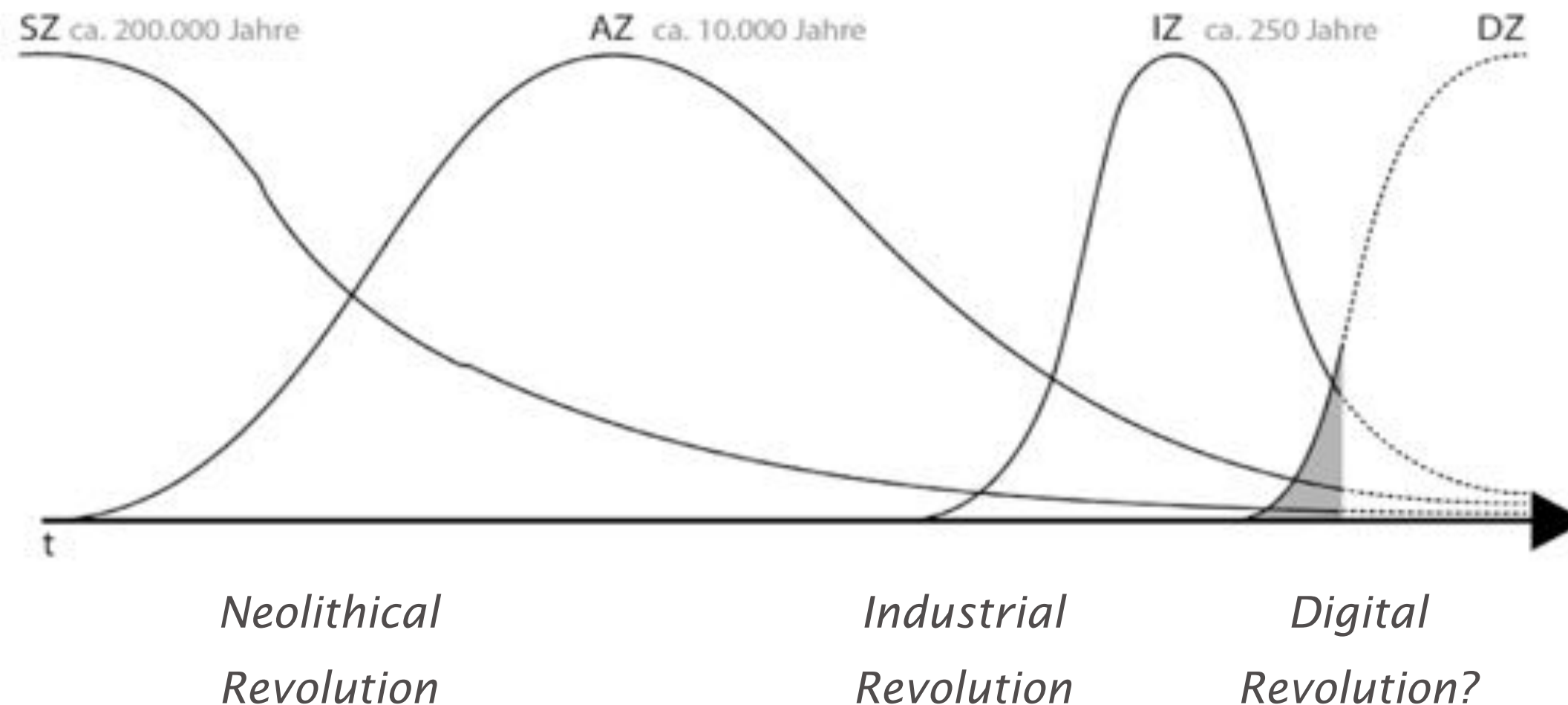
- Provide public-private AI and related digital systems
- Establish a model for digitalized sustainability
- Enable inclusive discourse across
- Strengthen research and innovation capability

All free to order or download [wbgu.de/en](http://wbgu.de/en)

# Transforming Our World: the 2030 Agenda



# “Digital Revolution”?



- > **Industrial Revolution** → prosperity *and* social misery, enlightenment *and* dialectics of enlightenment.
- > **‘Digital Revolution’** → new prosperity, new enlightenment, new enlivenment *while anticipating* bursts of environmental and social cohesion?

# ‘Digital Revolution’ – what for?

## “Radical Radicalism”

- > Libertarian and totalitarian account of destroying the system including its functions
- > ‘Digitalization’ as radical disruption

## “Incremental Radicalism”

- > Road of unintended side-effects towards ruining the system
- > ‘Digitalization’ as creeping acceleration of given (unsustainable) trends

## “Radical Incrementalism”

- > Reshaping the system while keeping key functions (e.g. avoiding deep crisis, keeping up social integrity)
- > ‘Digitalization’ as a means for sustainability transformation

DYSTOPIA

BAU

GOAL

# 500 Pages in a Snapshot

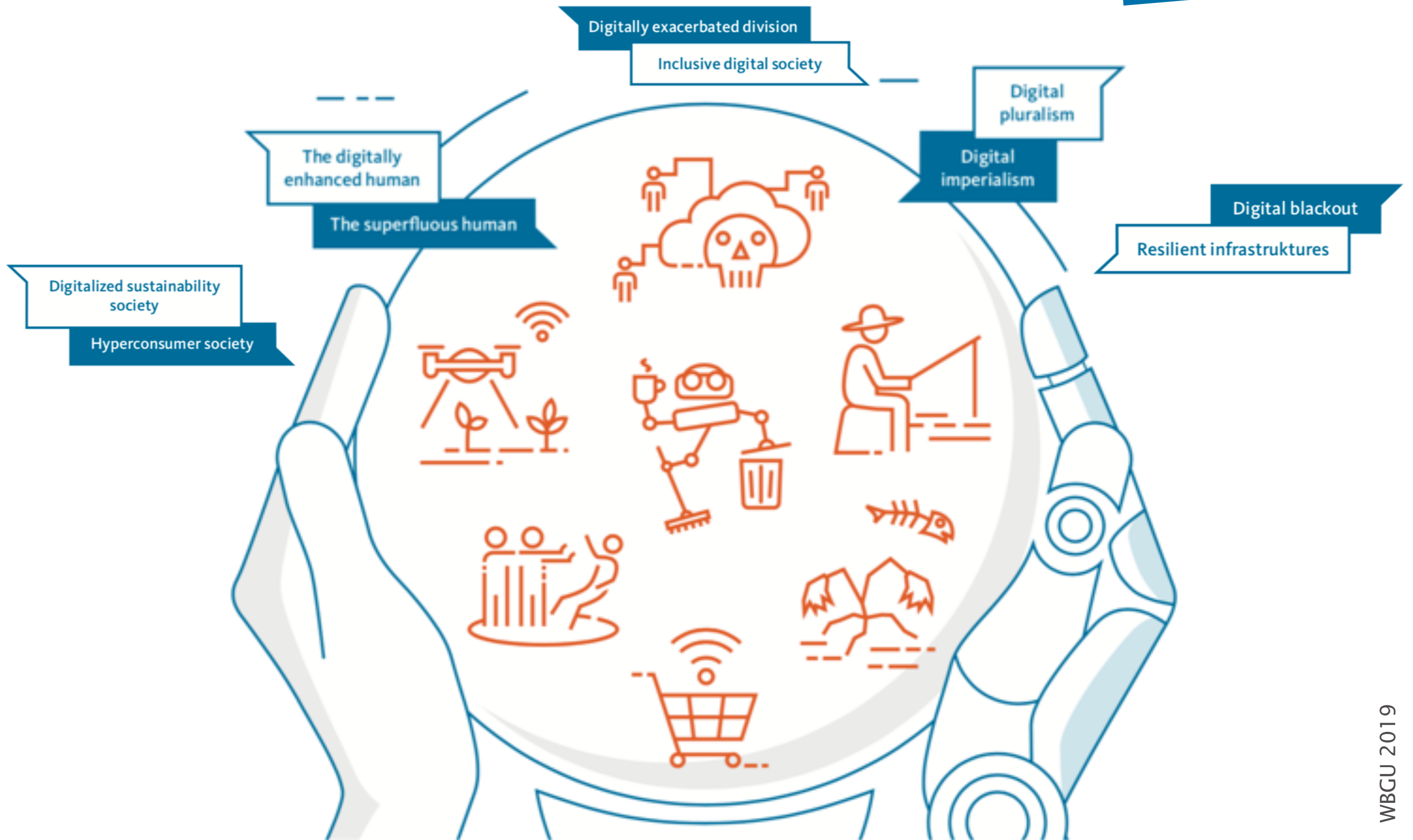
- > **UNMASK** – Deconstruct popular utopias and dystopias
- > **LITERACY** – Illuminate specific technologies, its core characteristics and its main reconfigurative effects on earth system, society, economy, individuals and tech
- > **DEEPDIVE** – Showcase and analyse specific issue areas
- > **AGENCY** – Address actors, their specific challenges and transformative potentials
- > **GUIDANCE** – Clarify transformative interest, provide a normative compass and general narrative
- > **GLOBAL GOVERNANCE** – Identify issues in need for global cooperation
- > **ACTION** – Provide policy and research recommendations

# “Deepdives” – Arenas of Digital Change

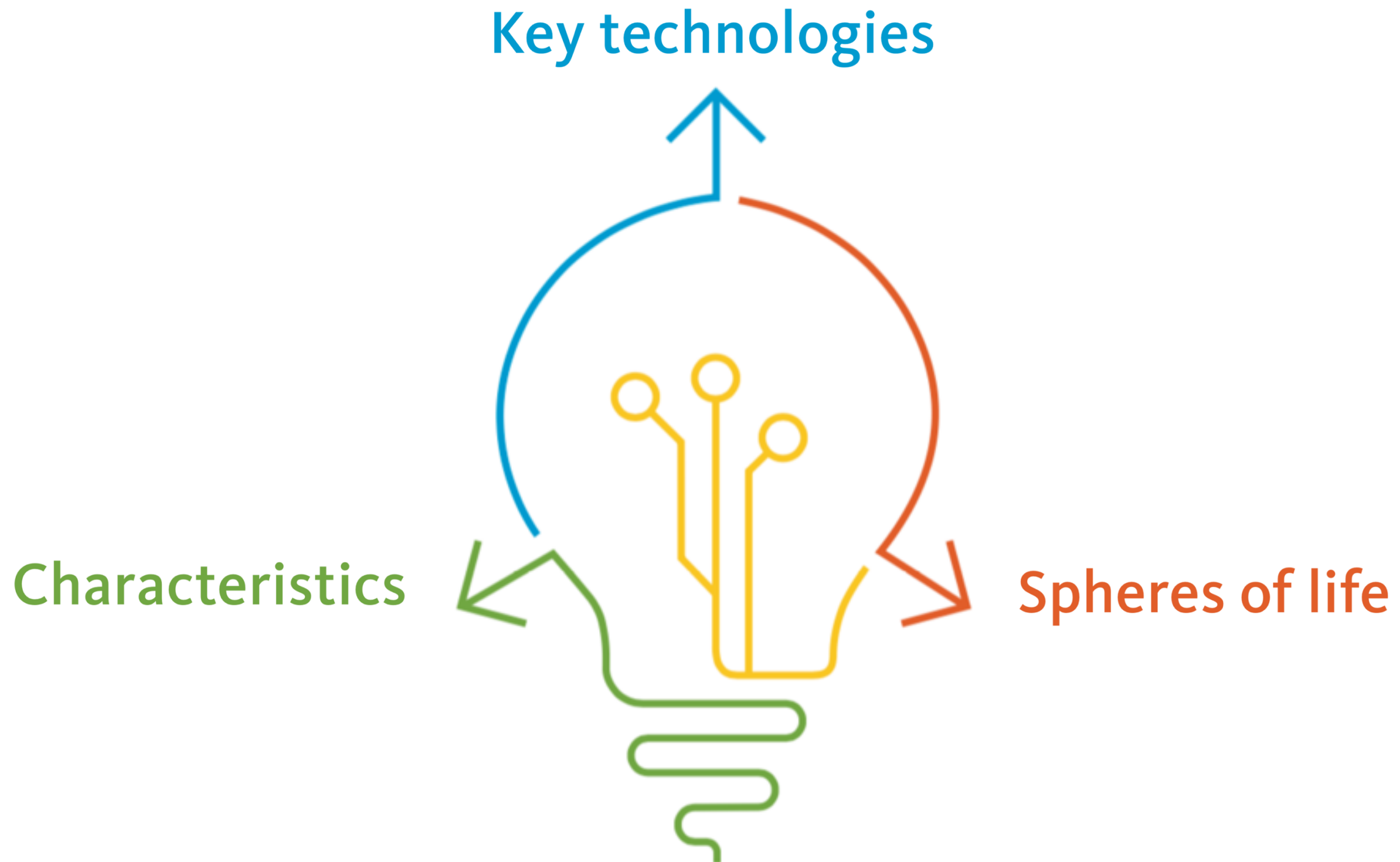




## “Unmask” – Hype, Fears and Visions

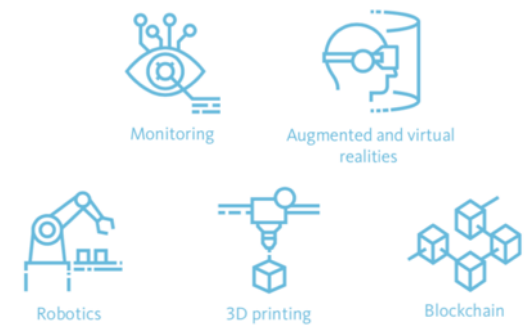


# “Literacy” – Understanding the Digital Age



# “Literacy” – Understanding the Digital Age

Key technologies



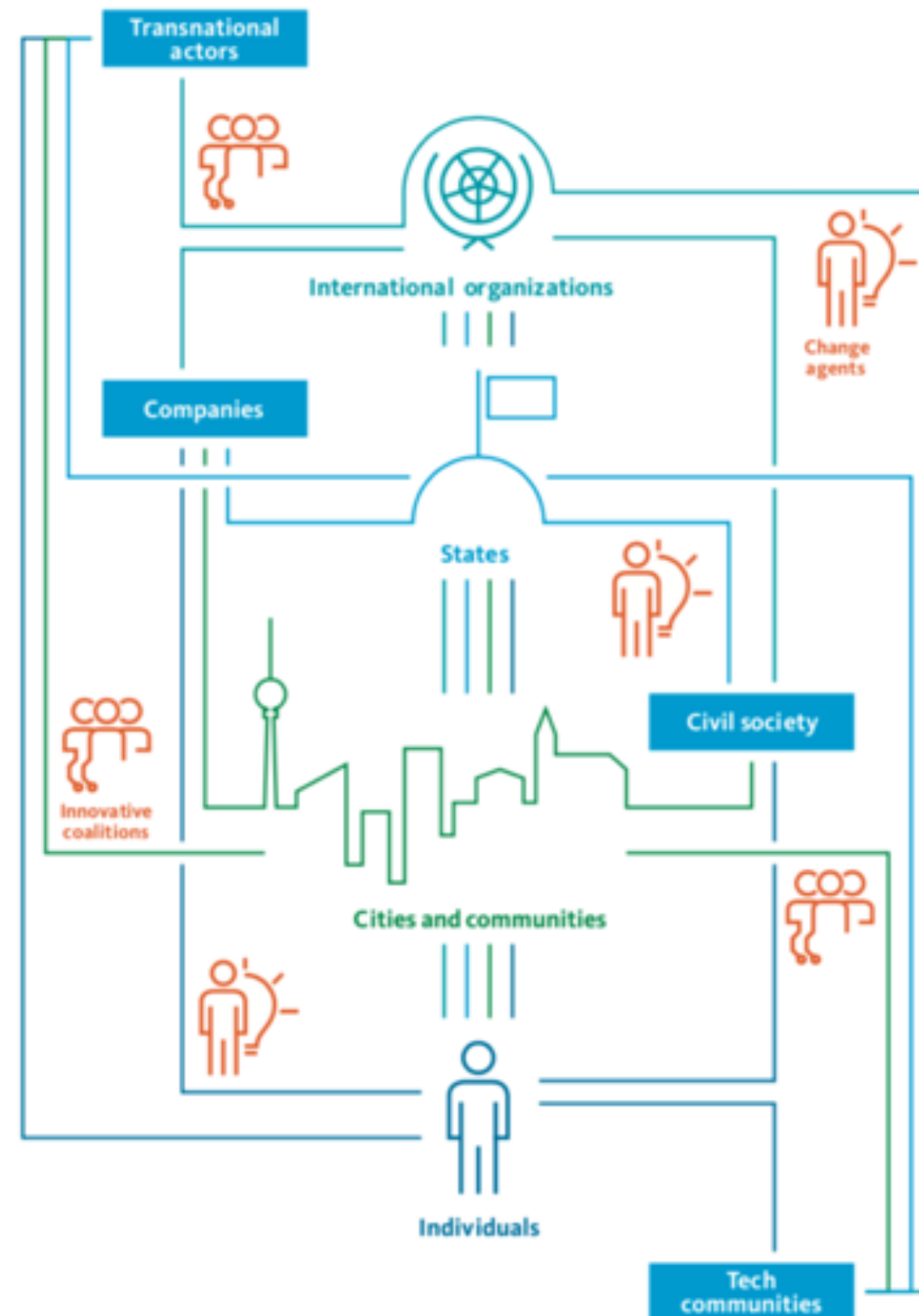
Characteristics



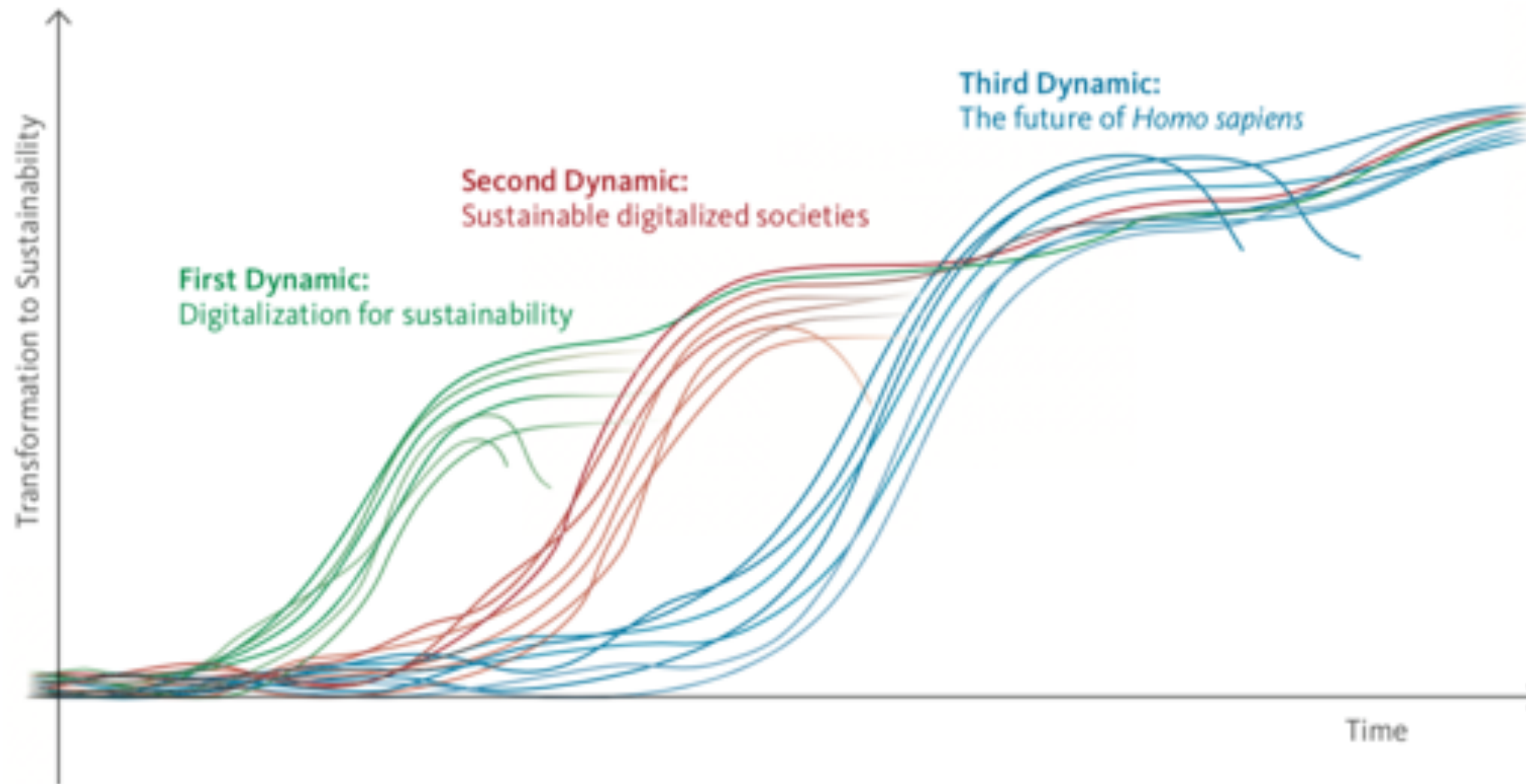
Spheres of life



# “Agency” – Transformative Actors in the Digital Age

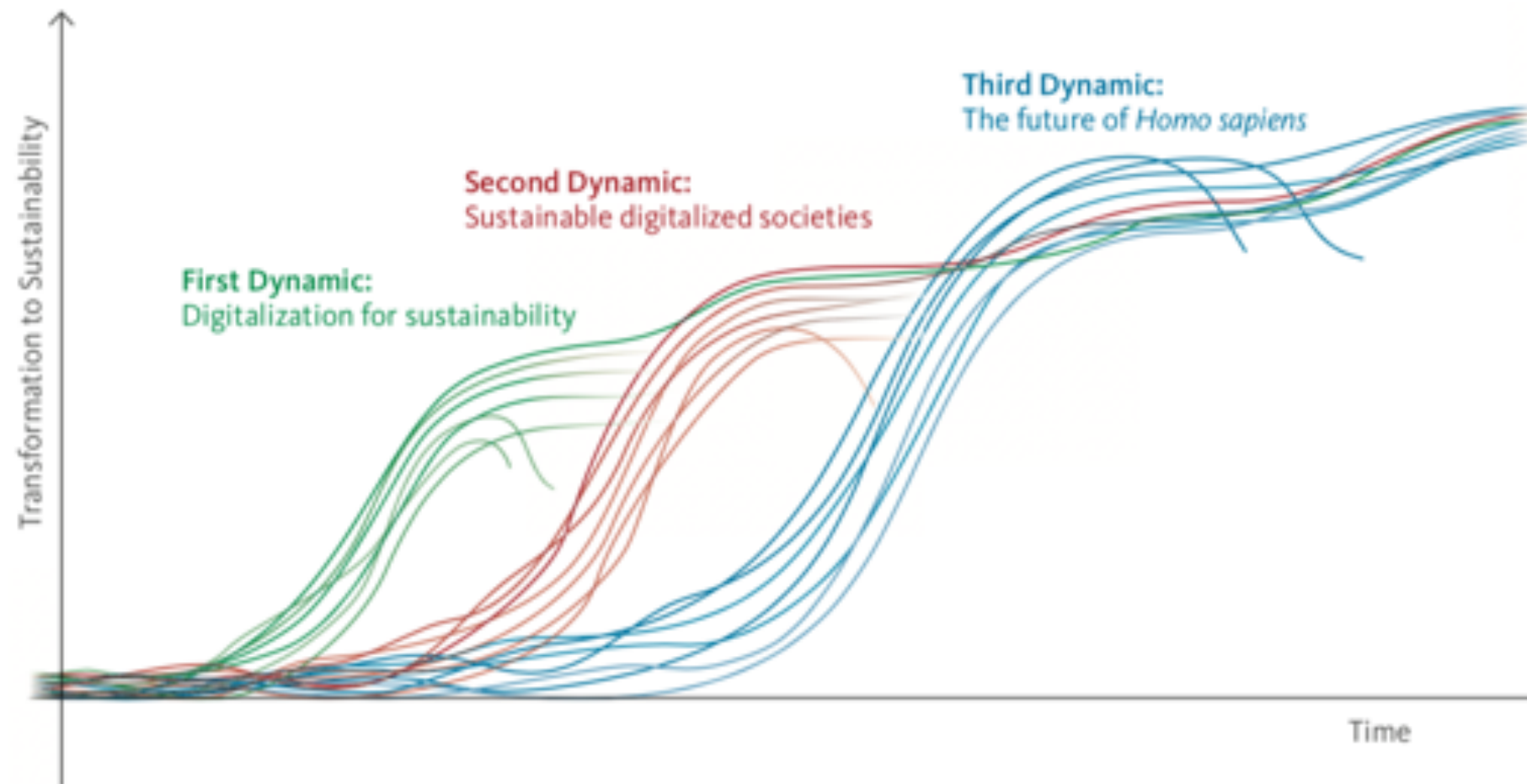


# “Guidance” – Three Dynamics of the Digital Age...



- > as a **synthesis** of the interrelations between digital change and transformation to sustainability.
- > to derive different, but acute **needs for action**.

# First Dynamic – Digitalization for Sustainability



## ↑ Digitally support sustainability

- Comply with planetary guard rails (climate, nature, soils, oceans)
- Secure social cohesion (against hunger, poverty, inequality; for access to water, health, education, energy)

## ↓ Ecological and societal disruption

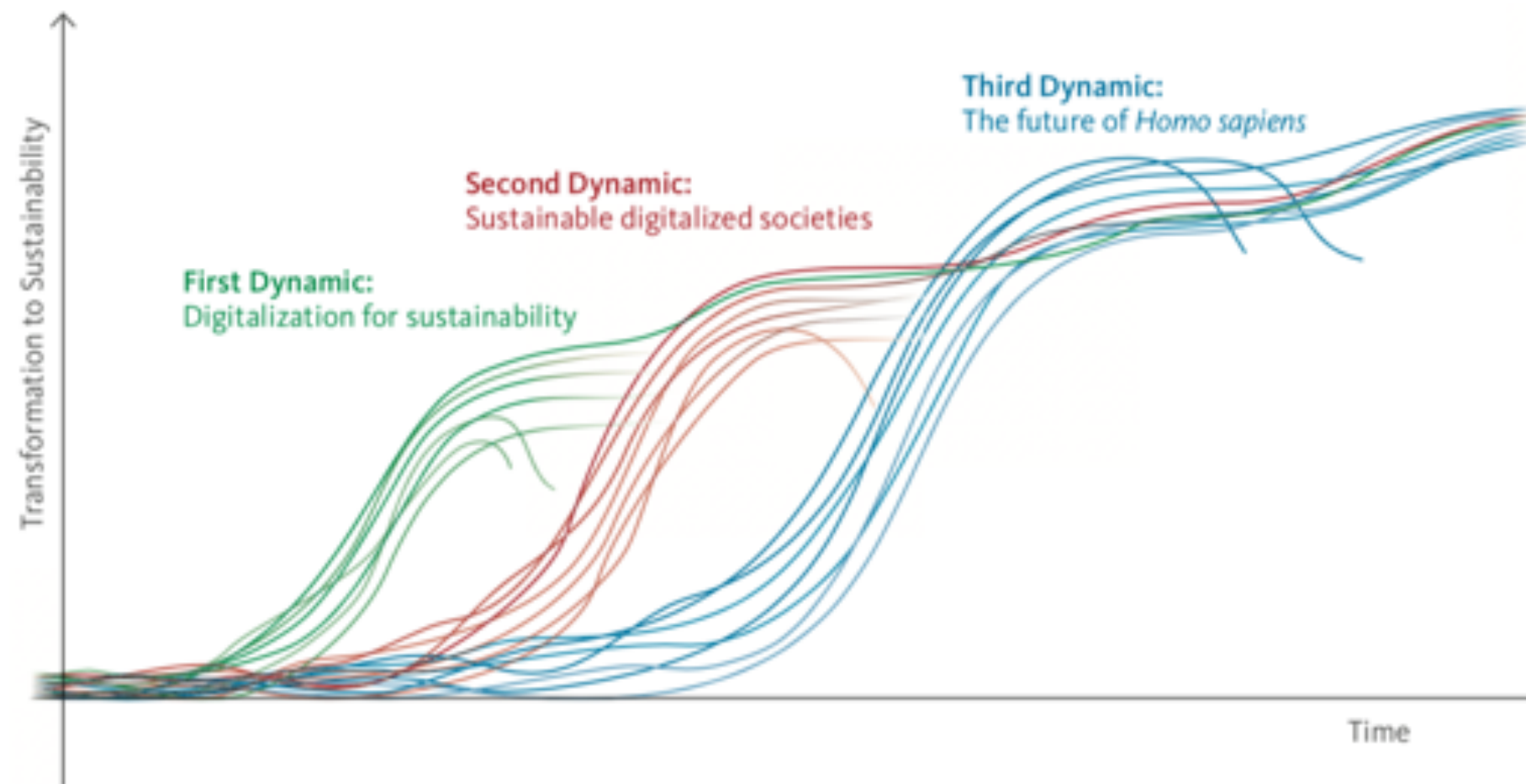
- More emissions and resource use
- More inequality
- Greater concentration of power
- Erosion of civil rights and privacy
- Erosion of the state's governance



+

Understand nexus D/S & engage in shaping it, make digitalisation *itself* sustainable and make it a *means* to implement sustainability goals

# Second Dynamic – Sustainable Digitalized Societies



## ↑ New humanism

- Networked world society as a further advancement of Enlightenment and humanism
- Development of global (environmental) awareness
- Culture of cooperation, empathy, global solidarity

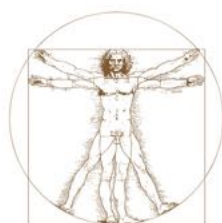
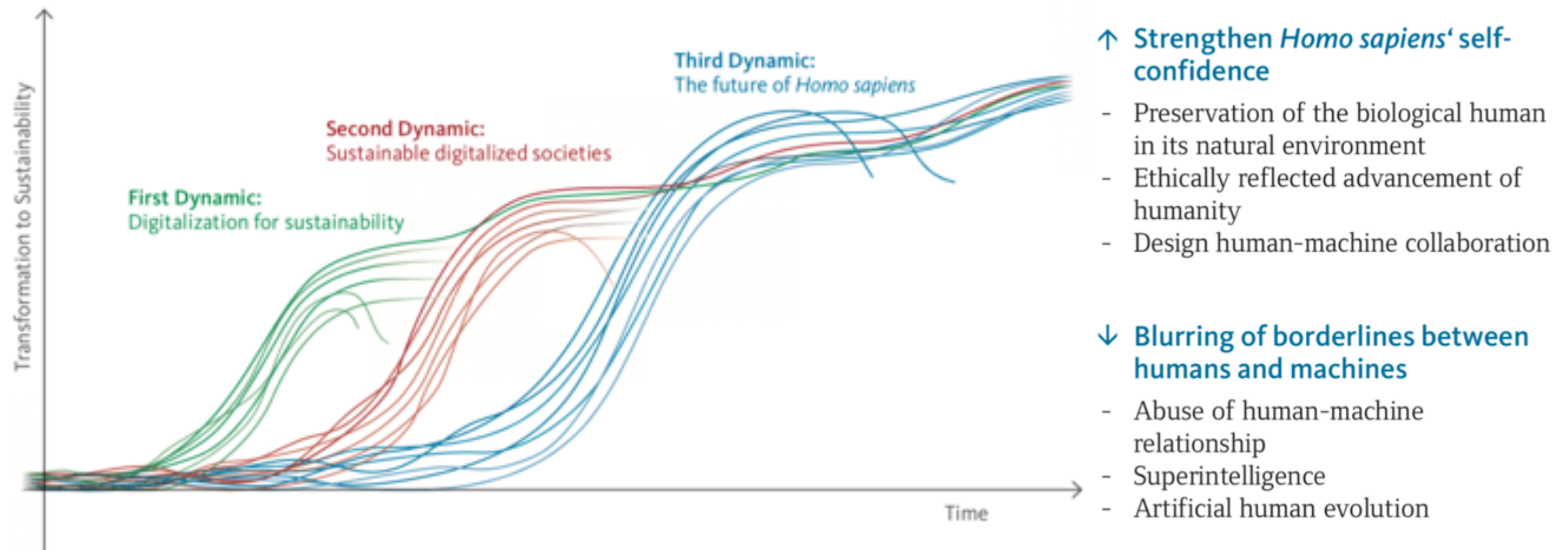
## ↓ Digitally empowered totalitarianism

- Hollowed-out democracies and digitally empowered autocracies
- Massive inequality, domination by elites, total surveillance and loss of freedom
- Environmental destruction and loss of social cohesion



Societal 'Update', anticipatory risk assessments & governance, but also overarching visions and specific goals for "sustainable digitized (world) societies

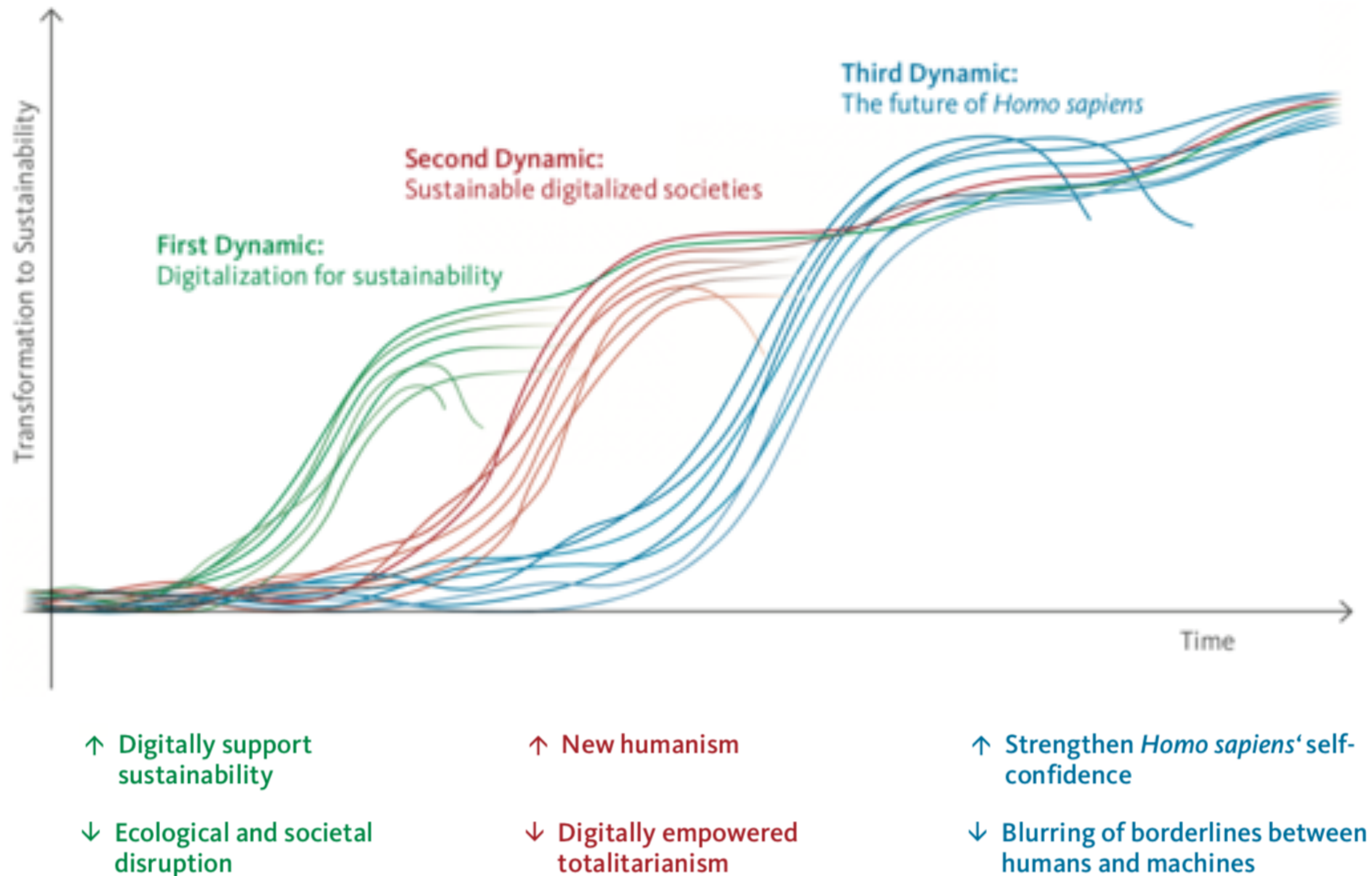
# Third Dynamik – The Future of *Homo sapiens*



Society-wide discourse on desirable futures, research, education and ethics around *homo digitalis*, *machina sapiens*, *natura futuris*



# “Guidance” – Three Dynamics of the Digital Age



# Some recommendation highlights

- > **Societal „Update“**

Sustainability and digital competencies as a modernization program

- > **Digital services for the public and public welfare**

Creating public-service ICT and digital commons,

- > **(Digital) literacy and cooperation**

Global (environmental) awareness, future-proof education, discourse arenas

- > **Digitally supported circular economy**

Recoupling of economic and natural processes

- > **EU as Pioneer: giving digital innovation a purpose**

Reinvigorating Europe's progress model: sustainability & public welfare as innovation quality (→ German EU Council Presidency 2020)

# Impact – Germany, EU, UN



Council of the European Union

Brussels, 11 December 2020  
(OR. en)

13957/20

ENV 793  
CLIMA 342  
TELECOM 260  
DIGIT 150  
ENER 489  
COMPET 628  
RECH 514  
MI 562

**NOTE**

From:	General Secretariat of the Council
To:	Council
No. prev. doc.:	13524/20
Subject:	Draft Council conclusions on Digitalisation for the Benefit of the Environment
	- Approval

United Nations A/74/821

**General Assembly**

Distr.: General  
29 May 2020  
Original: English

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Seventy-fourth session  
Agenda item 14  
Integrated and coordinated implementation of and follow-up to the outcomes of the major United Nations conferences and summits in the economic, social and related fields

**Road map for digital cooperation: implementation of the recommendations of the High-level Panel on Digital Cooperation**

Report of the Secretary-General

United Nations  
Office of the Secretary-General's  
Envoy on Technology

**Coalition for Digital Environmental Sustainability (CODES):  
Accelerating a Digital Planet for Sustainability**

In support of the UN Secretary-General's Roadmap for Digital Cooperation

31 March, 10:00-11:30 AM EDT

Join the launch event at [www.sparkblue.org/event/CODES](http://www.sparkblue.org/event/CODES)

# Still many Missing Links



## TOP 9 TAKEAWAYS



Artificial Intelligence  
Index Report 2021



**United Nations**

Secretary-General's Roadmap  
for Digital Cooperation



..., „twin transition“?

# Building the missing links

- 1. Shifting innovation, visions & patterns** of digital pioneers towards sustainability (universities, R&D)
- 2. Mobilizing markets** to drive digitalization towards sustainability (green tax reforms/ getting the prices right)
- 3. Shifting markets:** roadmaps to reduce emissions and resources consumption with digital tools
- 4. Modernizing the state** – building digital capabilities as a precondition for governing digital change
- 5. Building strong research networks** between digital and sustainability scientific communities
- 6. Creating dialogue structures** between civil society, state, business, science to shape digital and sustainable futures

# Building transformative coalitions for a #SustainableDigitalAge

*Some own examples*

- > Institutional literacy: UBA's **AI Lab for Sustainable Applications**
- > Cooperation between UBA and industry association on **Sustainable Industry 4.0**
- > Setting **strategic thematic focus** on sustainable digitalization, e.g. within EPA network or CCICED (China Council for International Cooperation on Environment and Development)
- > Stimulate academic debate, e.g. **call for paper**
- > Building strong international multi-stakeholder coalitions, e.g. **CODES**

# CODES – Coalition for Digital Environmental Sustainability



**International  
Science Council**  
The global voice for science



REPUBLIC OF KENYA  
MINISTRY OF ENVIRONMENT AND FORESTRY

Umwelt   
Bundesamt

**futureearth**  
Research. Innovation. Sustainability.



- > Global, multi-stakeholder **alliance**
- > “Make digital transformation a positive and exponential force for environmental sustainability and climate action!”
- > Part of the implementation process for the UN Secretary-General’s **Roadmap for Digital Cooperation**
- > Join **community**: [sparkblue.org/DigitalPlanet](https://sparkblue.org/DigitalPlanet)

**Thank you for your  
attention!**

PLEASE GET IN TOUCH  
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@WBGU\_Council

***#SustainableDigitalAge***