SUSTAINABLE GALS











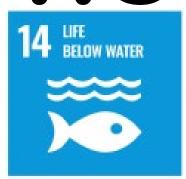




















Assignment 1: Digital transformation and sustainable development

- a) Select a theme of relevance for the SDGs, e.g., education, energy, health, etc. Some of these are included in the literature for the course.
- b) Write a report discussing the theme and a specific problem based on the course material and any other sources you find relevant.

You can discuss the theme and problem from a global perspective or a regional or local perspective.

Be critical and reflect on how did we get there?

What are the causes (always more than one)?

What are the options/scenarios/alternatives for the future?

What needs to be done?

Who are the stakeholders?

What are the risks and opportunities?

Maybe a SWOT table could be a way to end your report with a summary and concluding remarks.

The report should be maximum 3 000 words (500 words/page single-spaced = 6 pages), excluding references.



Assignment 2:

Implementing digital transformation for sustainable development through projects

Write a report. Discuss implementing digital transformation through projects in a selected area of your interest (for example higher education, health care, energy, transport) with a sustainability goal perspective.

Consider and use the conceptual framework and terminology in the literature.

Structure your text in a time perspective (history – present – future) and with a specific context; what is the current state?

What are the potentials in a specific socio-cultural context (geographic area - country, region – target group, stakeholders, culture etc)?

Risks and opportunities in the future?

How can change be achieved?

Consider also resistance to change.

Be creative, critical, constructive, realistic, visionary and innovative.

The Action
Digital transformation
A way forward
"A solution"

Maximum 3 000 words (500 words/page single spaced = 6 pages), excluding references.

The literature

Digital Transformation Organisations, Processes, Decisions

Mathias Cöster

Mats Danielson

Love Ekenberg

Cecilia Gullberg

Gard Titlestad

Alf Westelius

Gunnar Wettergren

Digital transformation

Social transformation

Environmental transformation

1. Introduction 5
 1.1. Roles of digitisation in operations 9 1.2. IT's informing function 12 1.3. Information and value 17 1.4. Type of business determines IT needs 21 1.5. Digital transformation and fundamental rethinking 23 1.6. Significance of systematic decision-making 25 1.7. A global perspective 26 1.8. The structure of the book 26
2. Organisational goals, strategies and digitisation 29
 2.1. Organisational goals 29 2.1.1. Goals, time perspectives and goal conflicts –examples 30 2.1.2. Organisational versus personal goals 35 2.1.3. Financial goals 36 2.1.4. Non-financial goals 37 2.1.5. To balance different goals 39 2.2. Organisational strategies 40 2.2.1. Challenges in strategy work 40 2.2.2. An example of strategy formulation 42 2.2.3. Strategy approaches 44 2.2.4. Coordinating strategies on different organisational levels 46 2.2.5. Strategic dialogues 49 2.3. Chapter summary 49 2.4. Reading tips 50
3. Business models and digitisation 53
3.1. The relationship between strategy and business model concepts 533.2. The different parts of a business model 553.3. Business model digitisation 57

3.3.2. Partners_subcontractors, activities and resources 59

3.3.1. Value proposition 57

5.5.5. Customers, customer relations and customer channels of 3.3.4. Revenues and costs 64 3.4. Digital business models 66 3.4.1. The roots of digital innovations 66 3.4.2. Digital intermediaries and network builders 68 3.4.3. Some common denominators for digital business models 75 3.5. Chapter summary 76 3.6. Reading tips 78 4. The organisation of digitisation 82 4.1. Background: A few questions surrounding digitisation 85 4.2. Who works with digitisation? 88 4.2.1. Who decides? 89 4.2.2. Combining perspectives from IT and operations 91 4.3. What does working with digitisation entail? 96 4.4. Social aspects of coordinating IT specialists and operations 100 4.5. Outsourcing and partnership with suppliers 106 4.5.1. What does the outsourcing of IT entail? 106 4.5.2. Reasons for outsourcing 111 4.5.3. Reasons against outsourcing 117 4.6. Management of outsourcing 120 4.6.1. Procurement competence 120 4.6.2. Continuous monitoring and management 122 4.7. Chapter summary 125 4.8. Reading tips 126 5. Structured decisions and decision processes 132 5.1. Rough analysis and improvement potential 135 5.2. The decision process 137 5.2.1. Identification and structuring 137 5.2.2. Information capture and modelling 138 5.2.3. Evaluation 141 5.2.4. Refinement of the decision basis 142 5.3. Extensions of the analysis 144 Henrik Hansson, IDOCOS (2023-02-08) 5.4. Chapter summary 145

6. Procurement competence 146

- 6.1. The complexity of the procurement process 147
- 6.2. The evaluations of tenders 148
- 6.3. Evaluation criteria 151
- 6.4. Unreasonable precision 153
- 6.5. Shortcomings in the handling of value scales 155
- 6.6. Weights and value scales 156

7. Probability and risk management 166

- 7.1. Probabilities and decisions 166
- 7.2. Tree models 170
- 7.3. Realism in decision models 173
- 7.4. Sensitivity analyses 179
- 7.5. Tool support 183
- 7.6. Chapter summary 184
- 7.7. Reading tips 185

8. Project portfolios 188

- 8.1. The project portfolio and the organisation 189
- 8.2. Are we investing in the right things? 190
 - 8.2.1. Quantitative models 192
 - 8.2.2. Qualitative models 199
 - 8.2.3. Balancing the portfolio 201
 - 8.2.4. Strategic alignment and agility 207
- 8.3. Are we using our capacity correctly? 209
- 8.4. How well do we implement projects? 211
 - 8.4.1. Follow-up during project execution 211
 - 8.4.2. Follow-up after project completion 212

9. To manage projects 216

- 9.1. Goals and definitions 216
- 9.2. Project models 217
 - 9.2.1. Sequential project models 217
 - 9.2.2. Problems with the waterfall model 220
 - 9.2.3. Iterative methods focus on utility 221
 - 9.2.4. Problems with agile 227
 - 9.2.5. What to use and when 230
- 9.3. Common skills, tools and methods 231
 - 9.3.1. Conducting a feasibility study 231
 - 9.3.2. Working with and managing requirements 232
 - 9.3.3. Time estimates 234
 - 9.3.4. Risk analyses 236
- 9.4. Chapter summary 249
- 9.5. Reading tips 250

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10. Globally sustainable digital transformation 252

- 10.1. Digitisation in the higher education sector 255
- 10.2. The need for a higher education process framework 255
- 10.3. Align higher education frameworks to the SDGs 258
- 10.4. Chapter summary 260
- 10.5. Reading tips 261

11. What is this all about? 266

- 11.1. The ecology perspective and a strategic grip on digitisation 267
- 11.2. The business focus 272
- 11.3. Strategy, goal and business model 274
- 11.4. Organising of competences and resources 276
- 11.5. Decision-making and risk 277
- 11.6. Project portfolio and implementation 281
- 11.7. Sustainable development 282
- 11.8. Digital transformation and value 283

The literature



Kedirecting Technologies for the Deep Sustainability Transformation



Lead authors

Steffen Lange & Tilman Santarius

Authors

Lina Dencik

Tomas Diez

Hugues Ferreboeuf

Stephanie Hankey

- Lorenz Hilty
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- Marianne Ryghaug
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- Compare Compared Philipp Staab

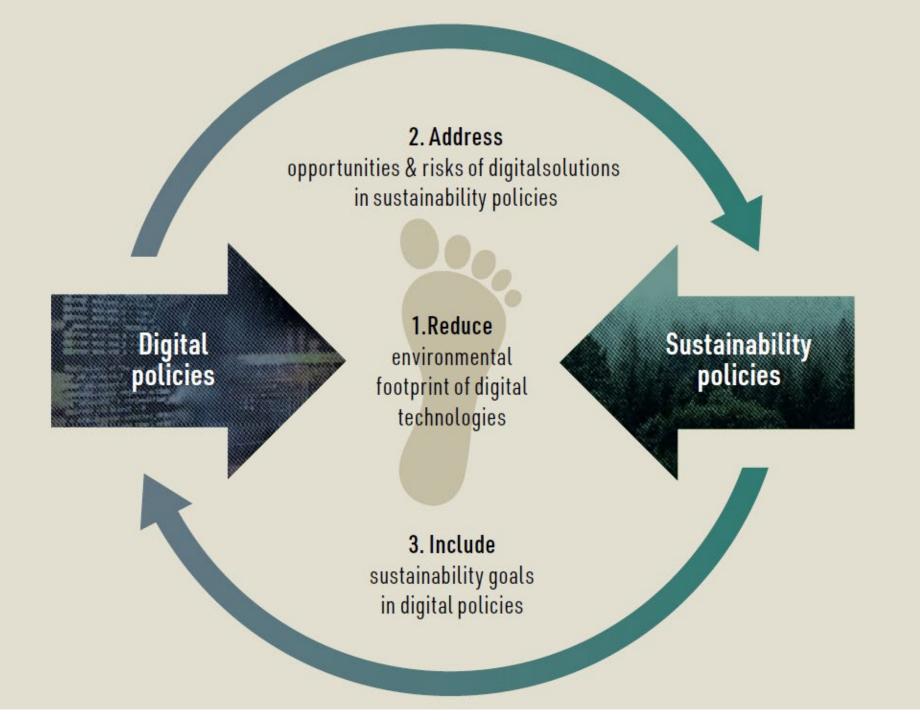
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\	Why Digitalisation Needs To Be Redirected	_
<<	Sustainability Challenges	
<<	Digitalisation Challenges	
<<	Taking Stock of Digitalisation for Sustainability	
«	Principles for a Digital Reset	
	How Digitalisation Can Support Deep Sectoral Transformations	
<<	Diverse and Embedded Agriculture	
<<	Multi-Modal and Equitable Mobility	
<<	Circular Industry Beyond Growth	
<<	Distributed and Flexible Energy Systems	
<<	Reduced Construction by Smart Buildings	
~	Shifting and Avoiding Consumption	
	How Digitalisation Can Become Sustainability-Oriented	
«	Sufficiency in Infrastructures and Devices	
<<	Business Models with Purpose	
~	Data Governance for Transformation	
«	Artificial Intelligence within Limits	
	Ten Lodestars for a Digital Reset	

Digitalization for Sustainability (D4S), 2022: Digital Reset.

Redirecting Technologies for the Deep Sustainability

Transformation. Berlin: TU Berlin.



Digitalization for Sustainability (D4S), 2022: Digital Reset.
Redirecting Technologies for the Deep Sustainability
Transformation. Berlin: TU Berlin.

Three policy strategies for a sustainable digitalisation

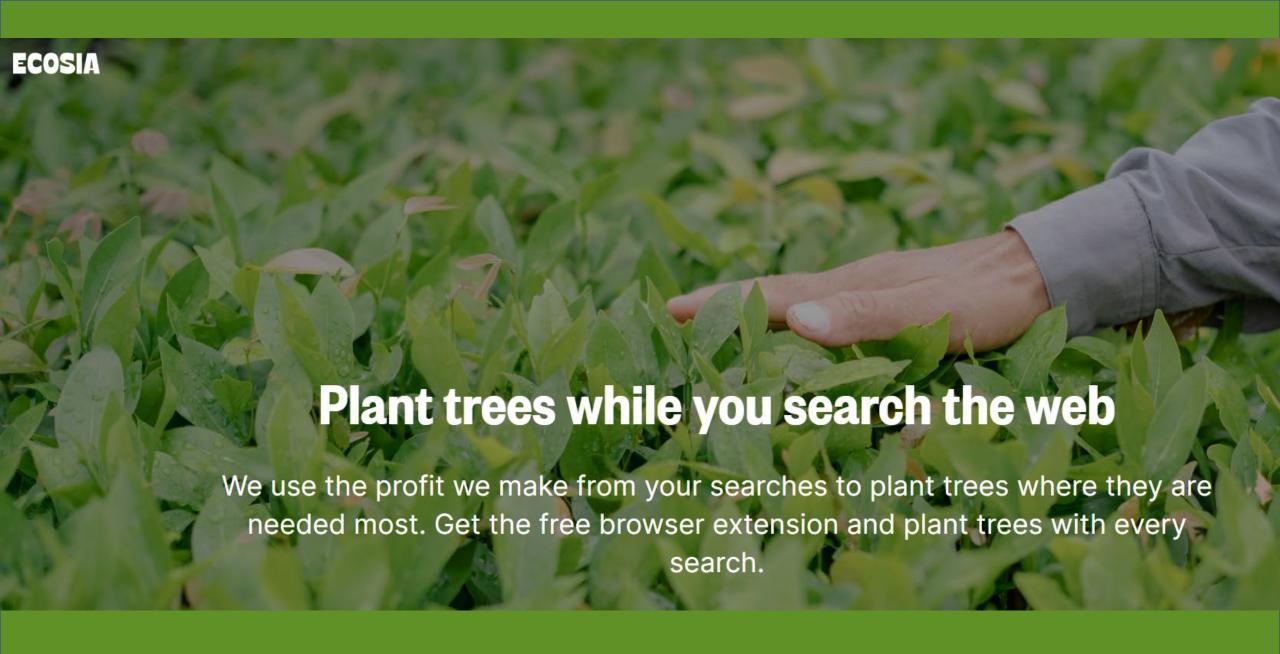
"Only if digitalisation is subordinated to, and becomes part of, a deep transformation can it contribute to sustainable development in a meaningful manner.

...Digital Reset: To fundamentally reevaluate digital technologies and redirect them for the urgently required sustainability transformation."

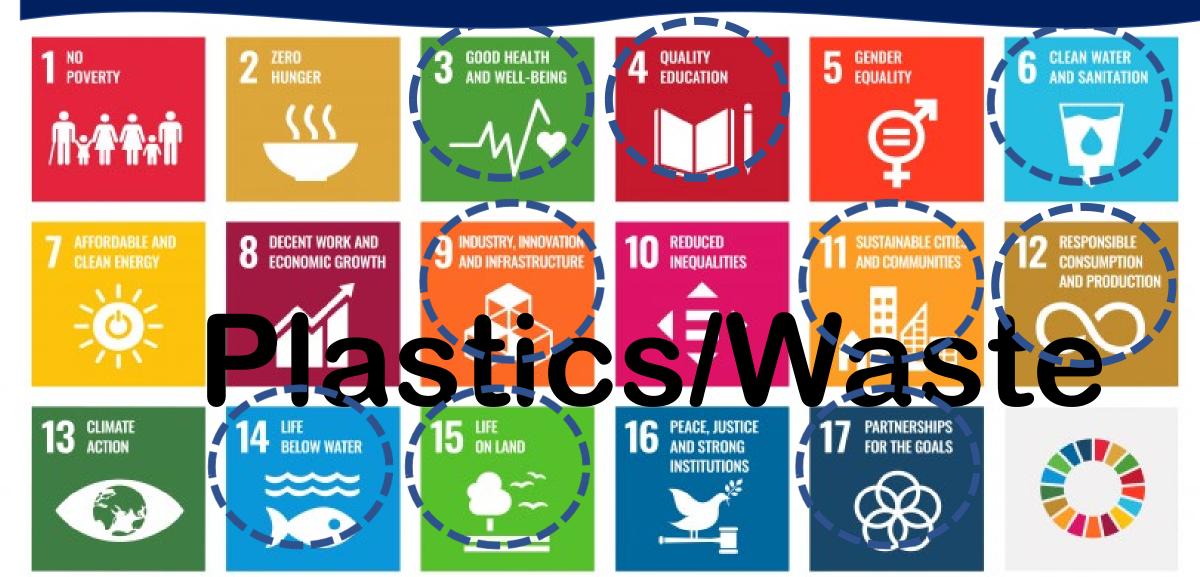
Digitalization for Sustainability(D4S), 2022: Digital Reset. Redirecting Technologies for the Deep Sustainability Transformation.

Berlin: TU Berlin, page 11

Helpful to achieving the objectives	Harmful to achieving the objectives
<u>S</u> trengths	<u>W</u> eaknesses
<u>Opportunities</u>	<u>T</u> hreats



Resistance to change



SUSTAINABLE GALS





































NOVEL ENTITIES CLIMATE CHANGE BIOSPHERE E/MSY STRATOSPHERIC OZONE INTEGRITY **DEPLETION** BII (Not yet quantified) **ATMOSPHERIC AEROSOL** LAND-SYSTEM LOADING **CHANGE** (Not yet quantified) **OCEAN ACIDIFICATION** FRESHWATER USE N (credit: J. Lokrantz/Azote based on Steffen et al. BIOGEOCHEMICAL 2015) **FLOWS**

6 of 9 planetary boundaries are crossed over

A planetary boundary is an indicator - recognized and adopted at the European and international levels - which shows us the thresholds that must not be exceeded, as it risks causing abrupt environmental changes.