



SUPPORTING MATERIAL FOR THE TEACHING FORMAT "FUTURE SCENARIOS FOR SUSTAINABLE BUSINESS SOLUTIONS"

Marina Schmitz, IEDC-Bled School of Management, 2022



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Module Description

Business and Management Studies
International Business (Master)
Future Scenarios for Sustainable Business Solutions

Type	Frequency	Semester
Elective	Every year	3
Length	Examination Format(s)	Group Size
14 Weeks (blocked in biweekly sessions of 2x90mins)	Reflective journal (30%) Scenario presentation in podcast/video format (70%)	10-25
ECTS-Credits	Hours per week	Workload (presence hours and self-study hours)
3	2	presence: 21 self-study: 54 total: 75
Language	Responsible of Module	Lecturer(s)
English	Marina Schmitz	Marina Schmitz

Requirements	Strategic Management, Business Management
Learning Objectives <ul style="list-style-type: none"> • Cognitive* • Socio-emotional (including social skills as well as self-reflection skills, values, attitudes & motivation)* • Behavioral (action competencies)* 	Cognitive (<i>"comprises knowledge and thinking skills"*; problem and solution based knowledge</i>) <ul style="list-style-type: none"> • Understand current social, environmental and economic developments • Understand the connection between sustainable development, SDGs and business • Evaluate business sectors in regards to current global challenges • Be familiar with the field of scenario development and future studies • Develop scenarios of potential desirable futures, evaluate them and be able to use them in strategic decision making
	Socio-emotional (<i>"includes social skills that enable learners to collaborate, negotiate and communicate ... as well as self-reflection skills, values, attitudes and motivations that enable learners to develop themselves"*</i>) <ul style="list-style-type: none"> • Reflect on their learning experience and the creative and strategic solutions development process of the class • Collaboration skills through group work • Future Literacy (<i>"future literacy empowers the imagination, enhances our ability to prepare, recover and invent as changes occur"</i> (UNESCO))
	Behavioral (<i>"describes action competencies"*</i>) <ul style="list-style-type: none"> • Apply creativity techniques for brainstorming and ideation/prototyping • Communication skills through group work, presentations and report/reflective journal writing



<p>Content (Which are the main topics covered in the course?)</p>	<p>The course will provide a holistic picture of current social and ecological challenges as well as their implications for business sectors in the future. Through analyzing developments and trends as well as through creative methods (e.g., improv and Lego Serious Play workshops), students will develop future scenarios for business sectors and explore desirable futures. The teaching format aims to sensitize students toward the importance of clear visions for possible futures and the creation of compelling narratives for sustainable business development through the exploration of these possible future scenarios. Through analysis of retropolation and backcasting tools, students will then develop strategic implementation pathways for the respective business sectors. Besides scenario planning's usefulness as a strategic management tool, future literacy goes beyond that, as future studies can foster novel, creative and inclusive solutions.</p>
<p>Which SDGs does the course address?</p>	<p>All SDGs will be introduced to students as a basis for outlining the global challenges of today. The students will pick the respective SDGs they want to address in more detail respective to the student's project/sector focus.</p>
<p>Brief Course Structure/Outline</p>	<p>The overall course outline of the teaching format is structured along the phases of the future workshop ("Zukunftswerkstatt") method: Preparation-, Critique-, Visioning-, and Implementation- Phase. For a more detailed structure, please refer to the <i>Course Outline</i> section.</p>
<p>Pedagogical approaches (*guiding principles of designing learning processes**) e.g.:</p> <ul style="list-style-type: none"> • Lecture-based learning • Experiential learning (experience via projects, internships, community work, field trips) • Collaborative learning • Active learning (passive role of teacher) • Self-directed learning • Inter-/transdisciplinary learning • Creative learning • Other 	<ul style="list-style-type: none"> • Active learning: Many exercises highlighting the application of the brief lecture-based inputs ensured that student activity and engagement were high. • Experiential learning: Through the two workshops, LEGO® Serious Play® and improv theater, during which students could physically engage and elaborate on their sector visions and scenarios. • Collaborative learning: By assigning students to the different teams and sectors, collaboration and interaction was ensured.
<p>Teaching methods (*specific methods in line with teaching approaches*), e.g.:</p> <ul style="list-style-type: none"> • Lecture • Group discussion • Debate • In-class role play • Virtual reality simulation • Case study • Service-learning project (for community) • Sustainability-related consulting project (e.g. for NGOs) • Sustainability-related research project • Self-reflection task/exercise • Interdisciplinary team teaching • Vision-building exercise (e.g. future workshop, scenario analysis, forecasting and backcasting) • Field trip 	<ul style="list-style-type: none"> • Group discussion: Group discussions were fostered through various exercises during which students had the opportunity to work on their respective sector visions. • Vision-building exercise (e.g. future workshop, scenario analysis, forecasting and backcasting): As part of the teaching methods applied in the future workshop phases, trends analyses and foresight approaches were explored, among other tools. In the visioning phase, students are introduced to scenario development exercises, utopian/dystopian storytelling, science-fiction thinking, forecasting, and backcasting. These methods aim at envisioning possible, probable, or preferable futures. • Self-reflection task/exercise: After each session, journaling questions facilitated self-reflection, providing opportunities for students to reflect on, e.g., personal roles, attitudes, and responsibilities related to a range of sustainability issues.

<ul style="list-style-type: none"> • Outdoor, nature-related experience • Gamification (e.g. LEGO game) • Arts-based teaching and learning method (e.g. theatre, drawing exercise, music-based exercise) • Peer-teaching (e.g. student-led lecture) • Flipped classroom • Other 	
Teaching Characteristics (none, low, medium, high)	
• Degree of student participation / activeness	High
• Degree of student collaboration / group work	High
• Degree of student emotional involvement	Medium
• Degree of inter-/transdisciplinarity	Medium
• Degree of student (self-) reflection	High
• Degree of experience of real-life situations	Low
• Degree of nature-related experiences	Low
• Degree of stakeholder integration	Medium
• Degree of integration between theory and practice	Medium
How does the course foster the following (if applicable for each, otherwise put n/a):	
Systems Thinking Competency**	Students will be introduced to global challenges in context of current developments and the SDGs. There will be a session where students will work on developing a systemic view of the sector they will be focusing on (e.g., through systems mapping and trend analysis). The course aims to foster systems thinking competency through this approach.
Anticipatory Competency**	The course scores highly on this dimension, as the group work demands students to think into an unknown future. Students need to be open for the uncertainty of the future and get sensitized towards the reality of multiple possible futures within our complex and rapidly changing world.
Normative Competency**	Students will need to incorporate and discuss normative dimensions about what constitutes desirable futures for them.
Strategic Competency**	Students will develop a future scenario for a business sector and to develop strategic recommendations to business in the respective sectors, thus strategic thinking competency is fostered by the course.
Collaboration Competency**	Students will be working in teams throughout the course on a joint project/sector and collaboration competency will be encouraged through this experience.
Critical Thinking Competency**	The course will start by introducing today's global challenges and students will be asked to critically reflect on those in regards to their chosen business sectors. Moreover, all tasks concerning the analysis of current situation, thinking about possible and desirable futures, and connecting them back to current strategic thinking will require students to apply critical thinking.
Self-Awareness Competency**	The course will be accompanied by reflection exercises along the scenario development process and final strategic recommendations. Students are asked to reflect on their procedure and outcomes to foster self-awareness.



<p>Integrated Problem Solving Competency**</p>	<p>Students will develop strategic recommendations aiming to mitigate current challenges and leading into a desirable future, thus problem-solving competency will play a role within the students learning journey.</p>
<p>Literature & Resources (selection)</p>	<p>LITERATURE [please see section <i>Resource Overview</i> for further info]:</p> <ul style="list-style-type: none"> • Bergheim, S. (2021). <i>Futures - Open to Variety: A Manual for the Wise Use of the Later-Than-Now</i>. Zgf Publishers. • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. • Gidley, J. M. (2017). <i>The Future A Very Short Introduction</i>. Oxford: Oxford University Press. • Göpel, M. (2016). <i>The Great mindshift: How a new economic paradigm and sustainability transformations go hand in hand</i>. <i>The Anthropocene: Volume 2</i>. Springer Open. https://doi.org/10.1007/978-3-319-43766-8 • King, K., & West, J. R. (2018). <i>Futures Thinking Playbook</i>. https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final • Miller, R., Poli, R., & Rossel, P. (2018). <i>The discipline of anticipation: Foundations for futures literacy</i>. <i>Transforming the future: Anticipation in the 21st century</i>. Abingdon, Oxon: Routledge. • Zeddies, L. (2021). <i>Utopia 2048</i>. https://www.utopia2048.com/ <p>FURTHER READINGS:</p> <ul style="list-style-type: none"> • Rajaniemi, H., & Weisman, J. (2019). <i>The New Voices of Science Fiction</i>. Tachyon Publications. • Roland Berger. <i>Sustainarama – How sustainability will change the world in 2050</i> (2020). Retrieved Feb 18, 2021 from https://www.rolandberger.com/en/Insights/Publications/Sustainarama-How-sustainability-will-change-the-world-in-2050.html • Sachs, J. D. and Sachs, L. E. (2021). <i>Business Alignment for the Decade of Action</i>. <i>Journal of International Business Policy</i>, 4, 22-27. • Stanley, K. (2020). <i>The Ministry for the Future</i>. Orbit. • The Economist. <i>The World Ahead</i>: https://www.economist.com/the-world-ahead/ • The Economist. <i>The World If</i>: https://www.economist.com/the-world-if/ • Zietsma, C. (2020). <i>Why Business Should Imagine Utopia</i>. Retrieved Jan 17, 2021 from https://www.nbs.net/articles/why-business-should-imagine-utopia <p>PERIODICALS:</p> <ul style="list-style-type: none"> • European Journal of Futures Research • Foresight • Futures
<p>*UNESCO (2017). <i>Education for Sustainable Development Goals. Learning Objectives</i>. https://www.unesco.de/sites/default/files/2018-08/unesco_education_for_sustainable_development_goals.pdf</p> <p>** Rieckmann, M. (2018). <i>Learning to transform the world: Key competencies in Education for Sustainable Development</i>. In: Leicht, A., Heiss, J., & Byun, W. J. (2018). (Eds.). <i>Issues and Trends in Education for Sustainable Development</i>, UNESCO Publishing, pp. 39–59.</p>	



Course Outline

Structure		Session Focus	Homework
Preparation Phase	Week 1*	Course introduction, Intro to future studies, Administrative details, Team formation	<p>Students can meet with their team for a fun activity to get to know each other better. They can start by defining values for working together and write down team rules. Students are tasked to pick an industry and communicate it via teams within one week.</p> <p>Students are asked to read the following texts to prepare for the "critique phase."</p> <ul style="list-style-type: none"> • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. [Chapter 1: The Return of Utopia] • Gidley, J. (2017). <i>The Future. A Very Short Introduction</i>. Oxford University Press. [Chapter 6: Grand global futures challenges] <p>For the journaling exercise, students should reflect on the content of week 1 by sharing their thoughts on the following questions:</p> <ul style="list-style-type: none"> • What might be done in your context to pay attention to <i>different</i> futures? • Are they as <i>diverse</i> as they could be? • How might you explore or communicate the future(s) to which you are attending in greater <i>depth</i>?
Critique Phase	Week 2*	Grand challenges, VUCA/BANI world, Wicked problems, Megatrend, Systems Thinking, SDGs, Systems Mapping, Utopias	<p>Students should read the texts to prepare for the "critique phase."</p> <ul style="list-style-type: none"> • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. [Chapter 5: New Figures for a New Era] • Miller, R. (Ed.). (2018). <i>Transforming the Future: Anticipation in the 21st Century</i>. UNESCO Publishing; Routledge Taylor & Francis Group. [Chapter 4: Futures Literacy Laboratories (FLL) in practice] <p>Students should narrow down their choice of critical issues they want to focus on with their group and formulate a question they want to explore in the future. How would their most desired and positive future feel/look like?</p> <p>Students should identify an expert (e.g., business professional or academic) from the sector they are working on. If needed, they should schedule an interview with them within the next weeks. This interview content might help to narrow down their choice of critical issues they want to focus on.</p> <p>For their journaling contemplation, they should reflect on the content of week two by answering the following questions:</p> <ul style="list-style-type: none"> • Which exercises helped you to inform and develop your model further? How? What were the challenges you encountered? • How did your personal experiences and worldviews/beliefs play a role here?



Visioning Phase	Week 3*	Express and explore your utopia through creative means (improv theatre workshop with trainer)	<p>For students' journaling exercise, they should reflect on the content of week 3 (tasks students carried out during the improv workshop) and/or on the following readings:</p> <ul style="list-style-type: none"> • Kaku, M. (2012). <i>Physics of the Future. How science will shape human destiny and our daily lives by the year 2100</i>. [Chapter 9: A Day in the Life in 2100] • Zeddies, L. (2021). <i>Utopia 2048</i> [Chapter: Epilogue and Afterword (pp. 274-283)] <p>They should also share their thoughts on the following questions (1-2 pages):</p> <ul style="list-style-type: none"> • What could be a potential day in the life in 2100 that you can imagine for your industry/sector? • Like the Epilogue in Utopia 2048, what would be a relict or item of the past that you could imagine as a symbol of your industry/sector to be exhibited at the "Museum of Big History"?
	Week 4*	Businesses and the future, Utopias and future(s) research, scenario development, foresight, gamification	<p>Students should have a look at some scenarios or foresight reports of their industry. How are these able to help develop their future scenario? How can the data provided in these reports allow them to construct their scenario/vision?</p> <p>Students should read the following texts to prepare further:</p> <ul style="list-style-type: none"> • Miller, R., Poli, R., & Rossel, P. (2018). The Discipline of Anticipation: Foundations for Futures Literacy. In R. Miller (Ed.), <i>Transforming the Future: Anticipation in the 21st century</i> (pp. 51–65). UNESCO Publishing; Routledge Taylor & Francis Group. • Inayatullah, S. (2008). Six pillars: futures thinking for transforming. <i>Foresight</i>, 10(1), 4–21. <p>For their journaling exercise, they need to reflect on the content of week 4 by sharing their thoughts on the following questions:</p> <ul style="list-style-type: none"> • What do your desirable future(s) look like for your industry, and how can this help guide and initiate transformation? • How have the gamified elements of today's session helped you explore new futures/scenarios/utopias?
Implementation Phase	Week 5*	Utopias and transformation, transformation theories, path congruence, extrapolation, retropolation, backcasting, prototyping	<p>Students should read the following texts to prepare for the "implementation phase."</p> <ul style="list-style-type: none"> • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. [Chapter 9 & 10, pp. 203-250] • Göpel, M. (2016). <i>The Great mindshift: How a new economic paradigm and sustainability transformations go hand in hand</i>. The Anthropocene: Volume 2. Springer Open. [Chapter 5, pp. 149-168] <p>For their journaling exercise, they should reflect on the content of week 5 by sharing their thoughts on the following questions:</p>



			<ul style="list-style-type: none"> If you would transfer the principles of your utopia to the present, how would you behave in your industry? How have the exercises helped? <p>Please write a future manifesto. Imagine being a player in the industry/sector you are working on.</p> <ul style="list-style-type: none"> Which transformation theories can best be applied to your utopia/scenario? How can they help to facilitate the realization/implementation of it?
	Week 6*	Prototyping your scenario/solution with Lego® Serious Play® (LSP workshop with external facilitator)	<p>For their journaling exercise, they need to reflect on the content of week 6 (tasks and activities they carried out during class), and share their thoughts on the following questions (1-2 pages):</p> <ul style="list-style-type: none"> What can methods such as Lego Serious Play add to the development of sector scenarios/visions (in general terms and specifically for your scenario/vision)? In which phases of the process do you find the LSP method particularly useful? Conversely, during which phases do you think it could be problematic or not helpful? Why? How did the problem reversal/inversion technique (<i>Kopfstandmethode</i>) help you to shape your scenario?
	Week 7*	Debrief and Final Presentations	

*Note: The sessions should be scheduled in a biweekly manner, with an average duration of 180mins.



Description of Underlying Approaches, Methods and Applied Exercises¹

Underlying Teaching Approaches

Active learning
During all exercises (and workshop sessions) performed during the respective future workshop phases, students are expected to be engaged and become actively involved.
Experiential learning
Especially during the two workshops (improv theater and LEGO® Serious Play®), students learn in a playful way.
Collaborative learning
Throughout group work and discussions, students are motivated to dive deeper into their imagined sectoral futures and share their thoughts with their peers.

Applied Teaching Methods

Group discussion
Various exercises are conducted in the respective sector working groups.
Self-reflection tasks/exercises
After each session, students are tasked to reflect on the content of the session in their reflective journal.
Vision-building exercises
During the future workshop phases (especially the visioning phase), vision-building is encouraged through Scenario development, Forecasting, Gamification, Extrapolation, Backcasting, and Prototyping, among others.

Exercises used in the Course

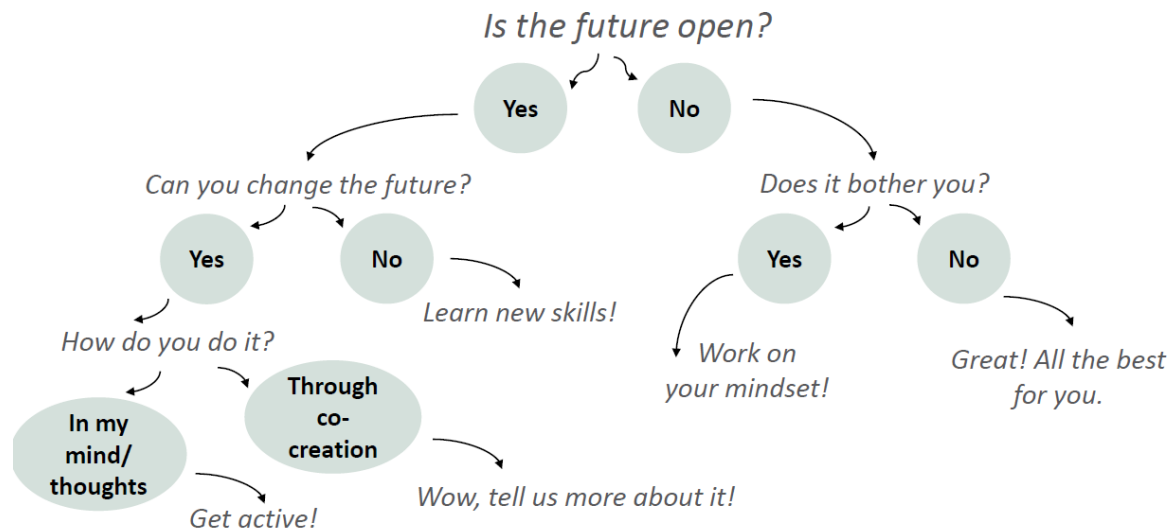
Exercise:	You and the Future
Used in which part / session of the course:	Preparation phase
Main goal of the exercise:	Contemplation about the importance of future studies for businesses
Best used with:	Max. 20 participants and with/without digital tools (20 minutes)
Short description of the exercise	
<ul style="list-style-type: none"> • What does a desirable future for you look like (personally/in general)? • What is the role of business schools in this desirable future? • What do you think of when you hear the word "future" (<i>instructor info: you may want to opt for the generation of a word cloud via digital tools</i>) • Select an answer and discuss: 1) I am rather optimistic about the future, 2) I am rather pessimistic about the future, 3) Depends. 	
Exercise:	Future Openness and Personalities
Used in which part / session of the course:	Preparation phase

¹ Definitions for teaching approaches and methods can be found here: Bustamante, S., Martinovic, M. & Shaman, K. (2022). Fundamental Insights about Teaching Formats in the Area of Sustainability and Responsibility. In S. Bustamante, E. Saltevo, M. Schmitz, & M. Martinovic, Shaping a Sustainable Future. Innovative Teaching Practices for Educating Responsible Leader (pp. 31-49). Nomos.

Main goal of the exercise:	Understanding your own positioning regarding respective futures
Best used with:	Max. 20 participants and with/without digital tools (10 minutes without personality test)

Short description of the exercise

Team up in teams of 2-4 people, explore your pathway and discuss:



The exercise above might be connected to the following "16 Personalities Test (MBTI)" and discuss can discuss how the different personalities might be interlinked with respective attitudes regarding the future.

The test will take 10 minutes and is available here: <https://www.16personalities.com/>

Exercise:	Letter to the Future
Used in which part / session of the course:	Preparation phase (or Implementation phase)
Main goal of the exercise:	Contemplation and reconnection with the self
Best used with:	Individual exercise (10 minutes)

Short description of the exercise

Write a letter to your future self: <https://www.futureme.org/>

Exercise:	Exploring Mega Trends
Used in which part / session of the course:	Critique phase
Main goal of the exercise:	Familiarizing yourself with current trends/risks and applying it to a respective sector
Best used with:	Max. 20 participants; in groups of max. 4 people (20 minutes)



Short description of the exercise

Please explore the “Mega Trends and Technologies 2017-2050” map by Richard Watson. Discuss in your group which trends / risks have an influence on the respective industry/sector you picked.

- Which powerful question can you ask to narrow down on your future scenario for the industry/sector?

Source: <https://nowandnext.com/thinking-tools/>:
[https://nowandnext.com/PDF/Mega%20Trends%20and%20Technologies%202017-2050%20\(Web\).png](https://nowandnext.com/PDF/Mega%20Trends%20and%20Technologies%202017-2050%20(Web).png)

Exercise:	SDG Gapminder Quiz
Used in which part / session of the course:	Critique phase
Main goal of the exercise:	Reflecting on the current status quo of the SDGs/Sustainable Development
Best used with:	Individual exercise (10 minutes)

Short description of the exercise

Please have a look at the webpage below and answer the quiz. What are your common misconceptions?

Source: <https://upgrader.gapminder.org/>

Exercise:	Systems Mapping and Connected Circles
Used in which part / session of the course:	Critique phase
Main goal of the exercise:	Understanding the complexity/wicked problems of a respective sector
Best used with:	Max. 20 participants; in groups of 2-4 people (20 minutes)

Short description of the exercise

Brainstorm system elements (i.e., problems/issues) your industry is facing.

- Take what you think are the most important system elements and put them around the circle and (15 minutes)...
- ...start drawing arrows from the elements to other elements of the circle which they have an influence on - this will help you to uncover connections and leverage points (5min)

Reflective questions:

- Which elements have a lot of arrows coming in and out of them? What does this say about them?
- What is the significance of elements that have no arrows pointing to it? / coming from it?
- Are there elements in your circle that have no arrows at all?
- Can you trace a path of arrows that leads back to the starting element? If so, you uncovered a „feedback loop“.



<ul style="list-style-type: none"> Are there elements that are part of multiple feedback loops? 	
Exercise:	Systems Mapping – Stakeholder Mapping
Used in which part / session of the course:	Critique phase (or implementation phase)
Main goal of the exercise:	Understanding which stakeholders are relevant
Best used with:	Max. 20 participants; in groups of 2-4 people (20 minutes)
<p>Short description of the exercise</p> <p>Map stakeholders within your system. Try to think about their...</p> <ul style="list-style-type: none"> Values: What do you believe they care about in relation to this case? What do you believe is important to them? Loyalties: Whose position might they feel is important not to go against and why? Who do they have close relationship with, or history, that they would not want to upset? Tensions/Losses: If you made progress on this problem/case, what do you believe could make them tense or uncomfortable? Is there something they would lose or have to give up? What might it be? 	
Exercise:	Improv workshop exercises (2x90mins)
Used in which part / session of the course:	Visioning phase
Main goal of the exercise:	Sparking creativity and exploring respective sectors across mixed teams
Best used with:	Max. 20 participants; in groups of 2-4 people
<p>Short description of the exercises</p> <p>1. Introducing a superstar</p> <p>Team up in pairs of two and briefly introduce your superpowers (i.e., hobbies, things you enjoy or are particularly good at) to each other (1 minute per person). Introduce you team partner to the group and introduce him/her as if he/she was a superstar.</p> <p>2. Chain of associations</p> <p>You walk through the room, pick a word, and point to the next person that should add his/her associated word immediately without thinking to long – repeat that as long as a person fails to come up with a word in 2 seconds (e.g., sand – beach – ice-cream etc.). If the chain is interrupted, you all raise your hands and cheerfully say “once again”</p> <p>3. Jump Stop Clap Go</p> <p>Walking through the room and repeating the above prompts and acting upon these. After a while, this sequence will be mixed randomly.</p> <p>4. Yes but - yes and!</p> <p>Think about any characteristic/challenge of your sector/industry and think about the steps that are necessary to initiate transformation. First, answer to each idea by adding "yes, but..." in front of the sentence. Repeat this exercise by only answering with "yes and".</p> <p>5. Two headed expert” interview</p>	



One person asks questions about the sector/industry, and two performers portray a two-headed expert, who must alternate every word when speaking and thus allowing building of sentences.

6. Magic box

The task is to pull as many magical items as possible from a box in a specific time frame. Students take turns removing an object from the magic box, miming, or acting out its use, and returning the object to the box before passing it on.

7. Stand-up Powerpoint roles

3 people spontaneously line up, 3 other people have their eyes closed and are given a role to answer (e.g., vegan, "mother earth", an activist) and another person then asks these 3 people specific questions, which they answer using the "lined up"/assigned roles.

Exercise:	Journaling
Used in which part / session of the course:	Visioning phase
Main goal of the exercise:	Contemplation about the future
Best used with:	Individual exercise

Short description of the exercise

1. What are the first thoughts and images that come to your mind when you hear the word "future"?
2. Try to look around mentally in the future of your industry/sector. What do you see?
3. Ideas about the future are often shaped by familiar narratives in books, films and series. Can you also find these narratives in your ideas of the future? Which ones are they?
4. Check your images. How far into the future are you in your thoughts? 2030? 2050? 2100?
5. What feelings does thinking about the future trigger in you? Are there differences when you think about your private future, the future of your work, or about more general future developments?
6. Which future topic causes you the most concern? Which future topic motivates you to actively shape it yourself?

Exercise:	Scenario Development (four scenarios)
Used in which part / session of the course:	Visioning phase
Main goal of the exercise:	Developing four scenarios and discussing respective (un)desirable futures
Best used with:	Max. 20 participants; in groups of 2-4 people (20 minutes)

Short description of the exercise

- Decide, whether you want to go for an adaptive or transformative scenario planning.
- Think about the uncertainty and strength aspects or the drivers of transformation. Which ones would you select for your industry? Once you have decided, please write them down and add these to the y -/x-axes in the digital collaboration tool.
- To design each quadrant, you may select images that symbolize each of these aspects and/or use post-its writing down the most important aspects you discussed for each of the four scenarios.



Exercise:	Walt Disney Method
Used in which part / session of the course:	Visioning phase
Main goal of the exercise:	Discussing and reflecting various ideas
Best used with:	Max. 20 participants; in groups of 2-4 people (15 minutes)
<p>Short description of the exercise</p> <p>1. Be the Dreamer. The dreamer develops ideas and visions</p> <p>2. Be the Realist: What needs to be done or said? What is needed for the implementation (material, people, resources, knowledge, techniques, etc.)? What do you feel about this idea? Which basics are already available? Can the approach be tested?</p> <p>3. Be the Critic: What could be improved? What are the opportunities and risks? What was overlooked? How do I think about the proposal?</p> <p>Open questions are then handed back to the dreamer, who reintroduces the cycle based on the findings until no longer ask further relevant questions.</p>	
Exercise:	The Future Game 2050
Used in which part / session of the course:	Visioning phase
Main goal of the exercise:	Gamified approach to different futures from the perspective of multiple personas
Best used with:	Max. 20 participants; in groups of 2-4 people (10 minutes)
<p>Short description of the exercise</p> <p>There are several pre-selected cards for each team/group on a digital collaboration tool. Discuss who is taking on which role/card (please pick one role each) and introduce the personas to each other. Please familiarize yourself with your role and engage in a dialogue about the questions below by acting/answering from the perspective of your role!</p> <p>Discuss the world of your industry by exploring the following questions highlighted on the bottom of the card:</p> <ul style="list-style-type: none"> • How does nature look like? • How do people interact? • How do people move? • How do they trade? • What are popular products/services? • Which rumor is circulating? <p>Source: https://www.thefuturegame2050.com/thefutureshop</p>	
Exercise:	The Thing from the Future
Used in which part / session of the course:	Visioning phase

Main goal of the exercise:	Gamified approach to different futures via discussing respective items from the perspective of students' chosen industries
Best used with:	Max. 20 participants; in groups of 2-4 people (10-20 minutes, depending on the number of rounds)
<p>Short description of the exercise</p> <p>Look at the prompt. 5 minutes are allowed for each player to write a brief description of a thing from the future inspired by the four cards. If possible, try to think about examples within your industry/sector. Find further info and instructions about "The Thing From The Future" here: http://situationlab.org/project/the-thing-from-the-future/</p> <ul style="list-style-type: none"> • ARC cards broadly describe different kinds of possible futures. These cards contain two kinds of information. The main (top) text of each Arc card specifies one of four generic images of alternative futures for players to imagine: Grow, Collapse, Discipline, or Transform • TERRAIN cards describe contexts, places, and topic areas. In a completed prompt, the terrain card describes where physically or conceptually the thing from the future might be found. Two terrains appear on each card in order to provide richer possibilities for the deck. • OBJECT cards describe the basic form of the thing from the future. • MOOD cards describe emotions that the thing from the future might evoke in an observer from the present. <p>Introduce your ideas in the group and decide who wins (3 minutes).</p> <p>Play again (5 minutes) and introduce your ideas (2 minutes).</p> <p>Source: Candy, S. (2018). Gaming Futures Literacy: The Thing from the Future. In R. Miller (Ed.), Transforming the future: Anticipation in the 21st century. Routledge Taylor & Francis Group; Situation Lab.</p>	
Exercise:	Futures Wheel
Used in which part / session of the course:	Implementation phase
Main goal of the exercise:	Exploring some "what if" scenarios which match to respective sectors
Best used with:	Max. 20 participants; in groups of 2-4 people (15 minutes)
<p>Short description of the exercise</p> <p>Complete one or more Futures Wheel(s) about a "What if"? from your topic.</p> <ol style="list-style-type: none"> 1. Start with the "What if"? questions you chose. Ask yourself what might happen next. Working with your group, come up with 3-4 possible consequences and write each one in a bubble that connects to the center. 2. Then ask yourself what happens as a result of the first set of consequences? Write those consequences in another layer of bubbles. 3. Continue until you have at least four layers of consequences. Remember to add positive and negative consequences in one branch. To check yourself, write – or + and the related STEEP category next to each bubble. 4. Choose the consequences you think are most interesting or represent the biggest change from the future you originally imagined. 	



Source: King, K., & West, J. R. (2018). Futures Thinking Playbook.
<https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final> (page 100f.) - you can find an example on page 103;

Bengston, D. N., Westphal, L. M., & Dockry, M. J. (2020). Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future. *World Futures Review*, 12(3), 270-278.
<https://doi.org/10.1177/1946756720929724>

Exercise:	Your preferred/desirable future
Used in which part / session of the course:	Implementation phase
Main goal of the exercise:	Discussing different desirable futures among the group members
Best used with:	Max. 20 participants; in groups of 2-4 people (15 minutes)

Short description of the exercise

You have a sense of the different futures you and others imagined. Now it's time to think about your own preferences and opinions about these futures. Briefly describe in a few sentences or bullet points your preferred or desirable future.

1. Compare your notes to others in your group. Choose one future that several people believed was most likely.
2. Discuss with your group:
 - What makes this future probable?
 - What about this future seems positive? Is it positive for everyone or just for some?
 - What about this future seems negative? Is it negative for everyone or just for some?
 - Overall, would you like to see this future come about?
3. Choose one future that several people believed was preferred.
4. Discuss with your group:
 - What makes this future preferable?
 - What about this future seems positive? Is it positive for everyone or just for some?
 - What about this future seems negative? Is it negative for everyone or just for some?
 - Overall, why would you like to see this future come about?
5. Individually, think about your group's discussion. What's one thing you would like to see happen in the future?
6. Individually, write down one thing you would like to stop from happening in the future?

Source: King, K., & West, J. R. (2018). Futures Thinking Playbook.
<https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final> (page 118f.)

Exercise:	Backcasting
Used in which part / session of the course:	Implementation phase
Main goal of the exercise:	Identifying steps to realize your future



Best used with:	Max. 20 participants; in groups of 2-4 people (15-20 minutes)
<p>Short description of the exercise</p> <p>As backcasting is a method for planning the actions necessary to reach desired future goals, this method is often applied in a workshop format with stakeholders participating.</p> <p>These could be possible tasks:</p> <ul style="list-style-type: none"> • List down your long-term goals. Think of a time frame between 1 and 20 years. • Work backwards to figure out the necessary actions to achieve the long-term goal. Step by step. • Collect insights over difficulties that might be encountered, steps that need to be taken and resources needed to achieve the goal. <p>Source: Source: Robinson, J. (2003). Future subjunctive: backcasting as social learning. <i>Futures</i>, 35(8), 839 856; Phdungsilp, A. (2011). Futures studies' backcasting method used for strategic sustainable city planning. <i>Futures</i>, 43(7), 707 714.</p>	
Exercise:	Hero for the future manifesto
Used in which part / session of the course:	Implementation phase
Main goal of the exercise:	Describing a desirable future and its implementation through different objects and action steps
Best used with:	Individual exercise (10 minutes)
<p>Short description of the exercise</p> <p>Choose two objects from the exercise "The Thing from the Future". Complete the following story, using your knowledge about what you've learned about the future, your integrity to think of others, your courage to take action, and your sense of humor to create a hero's journey! Imagine that you have reached your future goal and are looking back at the path you took.</p> <p>I am a hero for the future! My name is _____ and I am here to take a stand. Today, it is the year _____, and we have achieved _____ (description of preferred future). It wasn't easy! I had to stand up for _____ (what you took a stand for in last play). I faced many obstacles such as _____ (obstacle to achieve the preferred future). Thankfully, I had my _____ (imaginative use for Object #1) to help me along the way. My first step was to talk to _____ (person who can influence the future that you can access) and persuade them to _____ (action step). Then, I had to travel to _____ (location) and _____ (action step). I had no idea I would run into _____ (obstacle) and have to _____ (imaginative use for Object #2) finish my journey. In the end, I was able to _____ (final action step!).</p> <p>Gather the entire group or small groups together and have everyone perform their stories, getting into the role of the hero for the future!</p> <p>Source: King, K., & West, J. R. (2018). <i>Futures Thinking Playbook</i>. https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final (page 126f.)</p>	



Exercise:	Reflect on the future
Used in which part / session of the course:	Implementation phase
Main goal of the exercise:	Contemplation on the future
Best used with:	Individual exercise (10 minutes)
Short description of the exercise	
<ol style="list-style-type: none"> 1. Write three things you could do today or in the very near future to bring about your preferred future. 2. Who seems to have a lot of control over whether or not your preferred future happens? Do you have any influence over that person or people? How might you gain more influence? 3. Complete this sentence: Thinking about the future is _____. 	
Source: King, K., & West, J. R. (2018). Futures Thinking Playbook. https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final (page 134f.)	
Exercise:	LEGO® Serious Play® Workshop (2x90mins)
Used in which part / session of the course:	Implementation (or visioning) phase
Main goal of the exercise:	Creating and realizing/building your future scenario
Best used with:	Max. 20 participants; individual exercise or in groups of 2-4 people
Short description of the exercise	
<ol style="list-style-type: none"> 1. Build a duck in 30 seconds and then show it to the rest of the group 2. Warm Up (Technical skills, metaphors, storytelling): <ul style="list-style-type: none"> - Task 1: Build a tower. Integrate yourself in your model (4 min. building / 1 min. sharing per participant) - Task 2: Connect 5 of your LEGO® bricks in a completely random and meaningless way in 30 seconds (1 min. sharing per participant) - Task 3: Build a model that shows the vacation of your dreams. (5 min. building / 1 min. sharing per participant) 3. The individual model: Think about the industry sector you have chosen. Build a model that shows your UNSustainable Utopia of your chosen industry in 2030. (5 min. building / 1 min. sharing per participant) 4. The individual model: Build a model that shows the sustainable Utopia of your chosen industry in 2030. (5 min. building / 1 min. sharing per participant) 	



Resource Overview

LITERATURE	
Preparation phase	<ul style="list-style-type: none"> • Nandy, A. (1996). Bearing witness to the future. <i>Futures</i>, 28(6-7), 636–639. https://doi.org/10.1016/0016-3287(96)84465-X • Addis, D. R., Wong, A. T., & Schacter, D. L. (2007). Remembering the past and imagining the future: Common and distinct neural substrates during event construction and elaboration. <i>Neuropsychologia</i>, 45(7), 1363–1377. https://doi.org/10.1016/j.neuropsychologia.2006.10.016 • Candy, S., & Dunagan, J. F. (2016). The Experiential Turn. <i>Human Futures</i>, 26–29. • Cain, S. (2013). <i>Quiet: The Power of Introverts in a World That Can't Stop Talking</i>. Penguin. • Butler, O. E. (2000). <i>Parable of the Sower</i>. Grand Central Publishing. • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. (Chapter 1) • Gidley, J. (2017). <i>The Future: A Very Short Introduction</i> (First edition). <i>Very short introductions: Vol. 516</i>. Oxford University Press. (Chapter 6)
Critique phase	<ul style="list-style-type: none"> • Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. <i>Policy Sciences</i>, 4(2), 155–169. • Crowley, K., & Head, B. W. (2017). The enduring challenge of 'wicked problems': revisiting Rittel and Webber. <i>Policy Sciences</i>, 50(4), 539–547. • Kahn, M. E., Mohaddes, K., Ng, R. N. C., Pesaran, H. M., Raissi, M., & Yang, C. (2019). Long term macroeconomic effects of climate change: A cross country analysis: IMF working paper. • Kikstra, J. S., Waidelich, P., Rising, J., Yumashev, D., Hope, C., & Brierley, C. M. (2021). The social cost of carbon dioxide under climate economy feedbacks and temperature variability. <i>Environmental Research Letters</i>, 16(9), 94037. https://doi.org/10.1088/1748-9326/ac1d0b • Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., & Ludwig, C. (2015). The trajectory of the Anthropocene: The Great Acceleration. <i>The Anthropocene Review</i>, 2(1), 81–98. https://doi.org/10.1177/2053019614564785 (data dashboard: http://www.igbp.net/news/pressreleases/pressreleases/planetarydashboardshowsgreataccelerationinhumanactivitiesince1950.5.950c2fa1495db7081eb42.html) • Bergheim, S. (2021). <i>Futures Open to Variety: A Manual for the Wise Use of the Later Than Now</i>. Zgf Publishers. (Chapter 6) • Sachs, J. D. and Sachs, L. E. (2021). Business Alignment for the Decade of Action. <i>Journal of International Business Policy</i>, 4, 22-27. • Bergheim, S. (2021). <i>Futures Open to Variety: A Manual for the Wise Use of the Later Than Now</i>. Zgf Publishers. (Chapter 11) • Yurike, Yonariza, Rebecca Elmhirst, Syafruddin Karimi and Rudi Febriamansyah, 2018. Deforestation in Dharmasraya District, West Sumatra, Indonesia A Causal Loop Diagrams (CLD) Model. <i>Asian Journal of Scientific Research</i>, 11: 177–184. • Bergheim, S. (2021). <i>Futures Open to Variety: A Manual for the Wise Use of the Later Than Now</i>. Zgf Publishers. (Chapter 9) • Bergheim, S. (2021). <i>Futures Open to Variety: A Manual for the Wise Use of the Later Than Now</i>. Zgf Publishers. (Chapter 10) • Harari, Y. N. (2015). <i>Sapiens: A Brief History of Humankind</i>. Harper. • Harari, Y. N. (2016). <i>Homo Deus: A Brief History of Tomorrow</i>. Harvill Secker. • Harari, Y. N. (2019). <i>21 Lessons for the 21st Century</i>. Vintage. • Bregman, R. (2017). <i>Utopia for Realists: And How We Can Get There</i>. Bloomsbury. (Chapter 5) • Miller, R. (2018). Futures Literacy Laboratories (FLL) in practice: An overview of key design and implementation issues. In R. Miller (Ed.), <i>Transforming the future: Anticipation in the 21st century</i> (pp. 95–109). Routledge Taylor & Francis Group.
Visioning phase	<ul style="list-style-type: none"> • Kaku, M. (2012). <i>Physics of the future: How science will shape human destiny and our daily lives by the year 2100</i>. Anchor Books. (Chapter 9)



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<p>Implementation phase</p>	<ul style="list-style-type: none"> • Bergheim, S. (2021). Futures Open to Variety: A Manual for the Wise Use of the Later Than Now. Zgf Publishers. (Chapter 10) • Bengston, D. N., Westphal, L. M., & Dockry, M. J. (2020). Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future. <i>World Futures Review</i>, 12(3), 270-278. https://doi.org/10.1177/1946756720929724 • King, K., & West, J. R. (2018). Futures Thinking Playbook. https://issuu.com/wtforesight/docs/futuresthinkingplaybook-final • Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., Wehrden, H. von, Abernethy, P., Ives, C. D., Jager, N. W., & Lang, D. J. (2017). Leverage points for sustainability transformation. <i>Ambio</i>, 46(1), 30-39. • Lewin, K. (1947). Frontiers in group dynamics. Concept, method and reality in social science. Social equilibria and social change. <i>Human Relations</i>, 1(1), 5-41. • Folke, C. et al. (2021). Our future in the Anthropocene biosphere. <i>Ambio</i>, 50(4), 834-869. https://doi.org/10.1007/s13280-021-01544-8 • Olsson, P., Folke, C., & Hahn, T. (2004). Social-ecological transformation for ecosystem management: the development of adaptive co-management of a wetland landscape in southern Sweden. <i>Ecology and Society</i>, 9(4) • Geels, F. W. (2002). Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. <i>Research Policy</i>, 31(8-9), 1257-1274. • Göpel, M. (2016). The Great mindshift: How a new economic paradigm and sustainability transformations go hand in hand. <i>The Anthropocene: Volume 2</i>. Springer Open. https://doi.org/10.1007/978-3-319-43766-8 • Geels, F. W. (2005). The dynamics of transitions in socio-technical systems: a multi-level analysis of the transition pathway from horse-drawn carriages to automobiles (1860-1930). <i>Technology Analysis & Strategic Management</i>, 17(4), 445-476 • Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. <i>Environmental Innovation and Societal Transitions</i>, 1(1), 24-40. https://doi.org/10.1016/j.eist.2011.02.002 • Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. <i>Research Policy</i>, 36(3), 399-417. https://doi.org/10.1016/j.respol.2007.01.003 • Ebert, J. E. J., Gilbert, D. T., & Wilson, T. D. (2009). Forecasting and backcasting: Predicting the impact of events on the future. <i>Journal of Consumer Research</i>, 36(3), 353-366.



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<p>Online Resources / Relevant Webpages</p>	
<p>Preparation phase</p>	<ul style="list-style-type: none"> • Transformative takes place on several levels: https://www.realutopien.de/en/our-approach/ • Future Workshop Methodology: https://jungk-bibliothek.org/ • Insights on Futures Studies and tools: https://futurayst.blogspot.com/ • Pace Layer Thinking (Stewart Brand): https://blog.longnow.org/02015/01/27/stewart-brand-pace-layers-thinking-at-the-interval/, https://jods.mitpress.mit.edu/pub/issue3-brand/release/2 • Future and innovation cycles: https://www.visualcapitalist.com/the-history-of-innovation-cycles/ • Scenario example: https://jonworth.eu/brexit-where-now-the-flow-diagrams/ • Two examples of four different sustainability scenarios: https://www.arup.com/perspectives/publications/research/section/2050-scenarios-four-plausible-futures; https://www.rolandberger.com/en/Insights/Publications/Sustainarama-How-sustainability-will-change-the-world-in-2050.html • Climate Scenarios: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf; https://climateactiontracker.org/global/temperatures/ • 16 personalities MBTI test: https://www.16personalities.com/free-personality-test • Write a letter to your future self: https://www.futureme.org/
<p>Critique phase</p>	<ul style="list-style-type: none"> • 10 properties of wicked problems: https://medium.com/homeland-security/ten-properties-of-wicked-problems-a8a9ff67ccdb • BANI vs. VUCA: https://marian-temmen.medium.com/bani-vs-vuca-a-new-acronym-for-a-new-world-59c7be2dddce • The state of the Paris Agreement: https://www.statista.com/chart/9656/the-state-of-the-paris-agreement/ • Costs of climate change (in German): https://www.sueddeutsche.de/wissen/hochwasserkatastrophe-schaeden-kosten-klimawandel-co2-preis-hurrikan-1.5402770; https://www.mckinsey.de/news/presse/studie-net-zero-deutschland-klimaneutralitaet-chancen-herausforderungen • Ego to eco framework: https://www.presencing.org/aboutus/ego-to-eco/acupuncture-points • Global Risks Report 2021. https://www.weforum.org/global-risks/reports • Global Trends 2040 Report: https://www.intelligence.gov/publics-daily-brief/public-s-daily-brief-articles/1055-national-intelligence-council-releases-global-trends-report-on-the-more-contested-world-of-2040 • Trends Maps: https://nowandnext.com/thinking-tools/; https://www.zukunftsinstitut.de/artikel/die-megatrend-map/ (in German) • Integrated Reporting and systems thinking: https://www.integratedreporting.org/resource/integrated-thinking-strategy-state-of-play-report/; https://www.globalreporting.org/media/0sxj0ewa/gri_ungc_reporting-on-sdgs_practical_guide.pdf; https://www.oecd.org/gov/innovative-government/Systems-approaches-to-public-challenges-executive-summary.pdf; https://www.researchgate.net/publication/281649433_Systems_Thinking_for_Health_Systems_Strengthening • SDG classifications and synergies: https://stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html; https://www.sei.org/wp-content/uploads/2019/04/sei-brief-2019-sdg-synergies-2.pdf • SDG Compass: https://sdgcompass.org/business-indicators/; https://www.unglobalcompact.org/library/3101 • SDG action manager: https://www.unglobalcompact.org/take-action/sdg-action-manager

	<ul style="list-style-type: none"> • WBCSD: https://www.wbcsd.org/Programs/People-and-Society/Sustainable-Development-Goals; https://sdgessentials.org/ • Systems thinking and systemic design: https://learningforsustainability.net/post/systemicdesign-intro/ • Iceberg model and the three divides: https://www.presencing.org/aboutus/ego-to-eco/three-divides; https://www.presencing.org/aboutus/ego-to-eco • Deep systemic cases: https://charleseisenstein.org/; space between stories: https://charleseisenstein.org/courses/space-between-stories/ • Problem solving: https://hbr.org/2017/01/are-you-solving-the-right-problems; https://hbr.org/2012/09/are-you-solving-the-right-problem • Tools of a systems thinker: https://medium.com/disruptive-design/tools-for-systems-thinkers-the-6-fundamental-concepts-of-systems-thinking-379cdac3dc6a • Materiality analysis example: https://www.coca-colahellenic.com/en/a-more-sustainable-future/our-approach/materiality
Visioning phase	<ul style="list-style-type: none"> • Why Business Should Imagine Utopia. https://www.nbs.net/articles/why-business-should-imagine-utopia • Build the Future: Imagine a Perfect Society. https://www.nbs.net/articles/build-the-future-imagine-a-perfect-society • The Economist: https://www.economist.com/the-world-ahead; https://www.economist.com/the-world-if • The Future Game 2050: https://www.thefuturegame2050.com/grundlagen-zukunft-strategie • Two examples of four different sustainability scenarios: https://www.arup.com/perspectives/publications/research/section/2050-scenarios-four-plausible-futures; https://www.rolandberger.com/en/Insights/Publications/Sustainarama-How-sustainability-will-change-the-world-in-2050.html • The Art of Hosting: https://artofhosting.org/what-is-aoh/ • Walt Disney Method: https://www.designmethodsfinder.com/methods/walt-disney-method • The Thing From The Future. http://situationlab.org/project/the-thing-from-the-future/
Implementation phase	<ul style="list-style-type: none"> • Utopia: https://www.realutopien.de/en/ • Leadership system: https://www.rethinkandfocus.com/429718297/6801537/posting/ • Changing narratives: https://www.forumforthefuture.org/blog/the-power-of-changing-narratives-for-systems-change; https://www.systemsinnovation.io/courses; https://www.youtube.com/watch?v=3oFTzER9P5U • System Leverage Points: https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/; https://medium.com/10x-curiosity/systems-archetypes-places-to-intervene-b778deba0ed; https://medium.com/converge-perspectives/identifying-leverage-points-in-a-system-3b917f70ab13; https://leveragepoints.org/updates/ • Two Loop Model: https://medium.com/benefit-mindset/becoming-wellbeings-1600b1a8302; https://margaretwheatley.com/articles/using-emergence.pdf; https://blogs.bath.ac.uk/business-and-society/2017/08/21/two-loops-theory/ • Extrapolation, Retropolation and Forecasting: https://www.thefuturegame2050.com/grundlagen-zukunft-strategie (in German) • Backcasting: https://www.linkedin.com/learning/leading-like-a-futurist/backcasting
Other (online) tools used	
All phases	<ul style="list-style-type: none"> • https://www.teachthefuture.org/resources (https://library.teachthefuture.org/) • Miro.com (online collaboration board)