Annotated agenda for the facilitator of a one-day Horizon-Scanning workshop

TIMING	SLIDES	OBJECTIVES AND TOPICS	INSTRUCTIONS FOR FACILITATORS AND INPUT	TOOLS, TEMPLATES AND MATERIALS
40 min	Horizon Scanning: theory & practice **Before you begin** *The following slides contain a presentation that can be used during the workshop after removing the annotations marked "instructions". In addition, the presentation contains slides with a bluish background, which should be hidden, as they are an aid to facilitators.* **Warm-up: artifacts from the future** *You are welcome to carry out the following exercise with the participants as a warm-up.* *• The first picture shows an object from the past - a model of a telephone from the last century. Show it to participants and ask them to identify the object. Collect the answers and show the correct one.* *• The next picture shows a contemporary model of a telephone. Ask participants to identify the object. Then ask them to imagine that they are living at the end of the last century, when telephones looked very different. Ask them to try to identify the object through this perspective. What might be the responses of a person from the past?* *• The last picture shows a scene that is normal for people in 2050. Ask participants to identify what is happening in it and what the objects in the picture are used for.* *• By doing this exercise, you will help participants to realise that the future may seem strange and unobvious at times, that it will be DIFFERENT from what we usually think.* **What's this?** **What's this?** 30 years ago... Motorola International 3200, first digital hand-held Introduced in 1992 ½ - 1 hour talktime	Plenary session I 1. Outline the Workshop Goal 2. Present Workshop Structure 3. Outline Workshop Schedule 4. Introduce participants to the concept of foresight and futures literacy, emphasizing the importance of anticipating and preparing for change.	**Workshop Instructions: Enhancing the Resilience and Technological Adaptability of SMEs** 1. **Outline the Workshop Goals:** ● Identify key drivers of change in each ecosystem ● Anticipate long-term changes and emerging trends in the context of each ecosystem ● Develop strategies to address disruptions and challenges 2. **Present Workshop Structure:** ● Introduction to Foresight: Theoretical background on Futures Literacy, Foresight, and Horizon Scanning. ● Uncertainties & Drivers: Participants use the Rip van Winkle method to reveal assumptions about the future. ● Report-Back: Plenary session with a brief introduction to collecting signals. ● Collecting Signals: Participants collect signals relevant to their ecosystem, using provided templates. ● Assessing Signals & Map of Drivers: Participants assess the impact and timeline of signals using provided templates and a Google Sheet.	Workshop Materials: ● Printed templates for each exercise (Annexes 1-7) ● Sticky notes, marker pens, tape, scissors ● Notepaper for participants ● A0 format paper for the Map of Drivers template ● Google Sheet for signal assessment ● Optional: Miro board template for online workshops

What's this?

What's this?

You're living in 1992.

Someone asks you to try to imagine that you're living 30 years into the future - in 2024.

The photo shows a very common object in 2024. What is it???

What's this?

What's this?

Imagine that you're living 26 years from now, in the 2050s.

This is a very common scene in the 2050s.

What's happening here???

The future will be……

- **Sense-Making:** Participants analyze how their cluster or company could adapt to signal implications.
- **Report Back & Summary:** Final discussions and conclusions.

3. Outline Workshop Schedule:

- Introduction to Foresight: 30 minutes
- Uncertainties & Drivers: 20 minutes
- Clustering Uncertainties: 30 minutes
- Coffee Break: 10 minutes
- Report-Back: 30 minutes
- Introduction to Horizon Scanning: 30 minutes
- Scanning and Collecting Signals: 60 minutes
- Lunch Break: 60 minutes
- Assessing Signals & Map of Drivers: 60 minutes
- Assessing Signals: 30 minutes
- Map of Drivers: 20 minutes
- Coffee Break: 10 minutes
- Sense-Making: 30 minutes
- Report Back & Summary: 60 minutes

Additional Notes:

- Adapt the schedule and content to the specific needs of the participants.
- Encourage a transdisciplinary approach and diverse participation.

	The future will be...... **DIFFERENT** **Agenda** CONTEXT: • Goals & flow of the workshop • HS within the IDEALIST project • Participants • Organisation of work • Expected results THEORY: • Introduction to foresight, futures literacy • Introduction to Horizon Scanning PRACTICE: • Launching the group Horizon Scanning exercises **Detailed flow of the group work** Instructions: This is a sample time schedule of activities. Adjust the hours to suit your conditions. Take into account the duration of each activity. 10:30-11:20 **Exercise 1 UNCERTAINTIES & DRIVERS** (in groups) 10 minutes break 11:30-12:00 Report-back (plenary) 12:00-13:00 **Exercise 2 COLLECTING SIGNALS** (in groups) 60 minutes lunch break 14:00-15:50 **Exercise 3 ASSESSING SIGNALS & MAP OF DRIVERS** cont. (in groups) 10 minutes break 16:00-16:30 **Exercise 4 SENSE-MAKING** (in groups) 16:30-17:30 Report-back in plenary, summary, Q&A, Next steps, Evaluation form **HS within IDEALIST: Expected results** • A map of drivers and disruptors in three industrial ecosystems: • Energy-intensive industries, • Aerospace and Defence, • Mobility, Transport & Automotive • An increased understanding of the forces of changes that are shaping (local) industrial ecosystems, discerning critical or highly influential drivers from less influential ones. Introduction to Futures Literacy and foresight Instruction: lead your audience through the explanations and check their understanding of the terms.		• Provide clear instructions and guidance throughout the workshop. • Facilitate discussions and ensure active engagement. • Emphasize the practical application of foresight tools and methodologies. **4. Introduce participants to the concept of foresight and futures literacy, emphasizing the importance of anticipating and preparing for change.** **Key Concepts:** • Future is unpredictable: Foresight doesn't predict but explores plausible futures. • Future is not predetermined: Many possible futures exist; our choices influence outcomes. • Foresight benefits: Informs decision-making, challenges assumptions, focuses resources. **Introduction Flow:** 1. Warm-up Exercise (Optional): Show images of past and future objects to illustrate how perceptions of the future change. 2. Introduction to Foresight: Define foresight, futures literacy, and horizon scanning. 3. Futures Literacy: Explain the ability to use the future to rethink the present. 4. Foresight vs. Forecast: Highlight the difference between exploring	

How to correctly think about the future?

- The future is uncertain. Phenomena such as conflicts, crises, but also innovations and groundbreaking discoveries shatter people's ideas of security and confidence. Without visions of the future that inspire hope and encourage cooperation, we risk a slide toward disempowerment. By thinking about the future, on the other hand, we are able to make better informed decisions. We can shape our own future.
- When introducing the concept of foresight, it is important to understand the three premises upon which the considerations about the future rest.

How to correctly think about the future?

- The future is **not predictable**. We are therefore forced to consider what the plausible futures are.
- The future is **not totally predetermined**. There is an infinite number of potential alternative futures, some of which may be more probable than others.
- To some extent, **future can be shaped** by our choices in the present. Even though we cannot determine which of the infinite possibilities for a future will eventuate, we can influence the probability of a certain outcome with our choices (both actions and indications) in the present.

What is futures literacy?

Futures Literacy is not the ability to predict the future, instead, it refers to the capacity to diversify why and how we use futures. By futures we mean the ideas, images, conceptions and feelings we have about a time later than now (Richards et al 2020).
Futures Literacy calls for (Miller 2019):
- being conscious when we use futures;
- being reflective about the futures we use (our ideas, images, conceptions and sentiments about the future); and
- being able to switch between different types of futures (e.g. probable, desirable, strange, transformative etc).
Summing up, a futures literate person can answer the question: "What is the possible future and how do I use it?" and has acquired the skills needed to decide why and how to introduce the non-existent future into the present decision-making.

Futures Literacy skill

AGENCY & EMPOWERMENT
USING THE FUTURE TO RETHINK THE PRESENT
FUTURES LITERACY
FOSTERING DIVERSE FUTURES

- **Futures Literacy** is a competency that allows people to better understand the role of the future in what they see and do.
- It is an individual skill, which can be enhanced in the methodological process, known as **foresight**.
- A Futures Literate person does not have the ability to predict the future

How does Futures Literacy link to foresight?

Futures literacy is an individual skill, which can be enhanced in the methodological process, which is called foresight. Foresight is an intellectual and creative exercise designed to help decision-makers develop and make choices, challenge long-held beliefs and/or orthodoxies, focus their resources and attention, and prevent and anticipate certain developments.

multiple futures and predicting a single outcome.
5. Benefits of Foresight: Discuss how foresight helps organizations adapt and thrive in uncertainty.
6. Horizon Scanning: Introduce the systematic approach to identifying early signs of change.

Additional Notes:
- Encourage interactive discussions and questions from participants.
- Emphasize the practical applications of foresight in various industries.
- Provide a clear overview of the workshop agenda and exercises.
- Create a welcoming and inclusive environment for diverse perspectives.
- Adapt the content and pace to fit the participants' background and interests.
- Consider using real-world case studies to demonstrate the value of foresight.
- Highlight the connection between foresight and strategic planning.
- Encourage participants to reflect on how foresight can be applied to their own work.

What is foresight? 1/2

- **Foresight** is a process that enhances persons' or organisations' abilities to understand all the internal and external factors and alternative decisions that form the space of possible, plausible, probable or preferred futures paths.

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What is foresight? 2/2

- Thanks to such knowledge, persons and organisations are able to **identify issues that are of major importance for the future and the present**, they have a better understanding of what is relevant and what can be ignored, and they are better informed to make strategic and visionary decisions facilitating their long-term plans and objectives.

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How does Futures Literacy link to (strategic) foresight?

- Increases the ability of the participants to rigorously imagine

Futures Literacy

Strategic Foresight

- Explores planning and actions based on the imagined futures.

Source: OECD 2022

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Forecast vs foresight

- When we think about the future we tend to extrapolate past data assuming that current trends will continue.
- This assumption is incorrect because dynamics and uncertainty of the environment "produce" discontinuities, which disrupt trends.
- Many trend disruptions are possible, making way for many possible futures. That is why in Futures Studies we do not forecast ONE future, but we anticipate MANY possible futures.

Foresight goes beyond forecasting

FORECAST ⇄ FORESIGHT

Input (data) => Output (Forecast)

Inputs (things happening)
=> Analysis => Interpretation => Forward looking
=> Outputs (Options/ Scenarios)

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> *"An important risk companies face is that major shifts in the business environment can make entire investment strategies obsolete, ultimately resulting in the loss of their competitive position. In anticipating such shifts, forecasts are of little help given that they are usually based on the assumption that tomorrow's world will be much like today's."*
> (Cornelius, 2005)

Unique value proposition of foresight 1/2

- The key value of foresight lies in its ability to obtain sufficient details (insights) on the external situation sufficiently **early** to enable an internal organisational **response**, such as:
  - taking advantage of emerging opportunities by changing organisational goals or
  - addressing potential adverse consequences of emerging threats by taking adaptive, mitigative or preventive actions related to existing organisational goals.

Unique value proposition of foresight 2/2

- To sum up, the main benefits of **foresight** are as follows. Foresight:
  - helps decision-makers develop and make choices,
  - challenges long-held beliefs and/or orthodoxies,
  - focuses resources and attention of decision-makers,
  - helps prevent and anticipate certain developments.

Group work principles

Instructions: Define the rules for working in subgroups. You can add/remove elements from the list according to your convenience.

- Treat everyone with respect.
- Listen attentively to what others have to say.
- Think outside the box.
- Do not judge or interrupt others' speeches.
- Participate in the discussion.
- Stay on topic.
- Comments should be concise and relevant.
- The group facilitator decides who's next to speak.
- The group facilitator is neutral and does not participate in the discussion.
- Take a break when needed.

> *"The ability for which managers are most celebrated — the ability to get things done — is only one part of their necessary skills. Equally important, and much harder to come by, is the ability to see ahead."*
> Pierre Wack (Shell)

| 20 min | | Group work I [Mapping uncertainties and drivers of change]

Module 1: Rip van Winkle part 1. Identifying uncertainties | **Uncertainties & Drivers**

Help participants identify and articulate uncertainties about the future of their industrial ecosystem, fostering a deeper understanding of potential drivers of change.

Key Concepts:
● Future is uncertain: Encourage participants to embrace uncertainty and explore a range of possibilities.
● Rip Van Winkle method: Use this technique to stimulate creative thinking and uncover hidden assumptions.
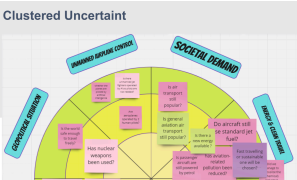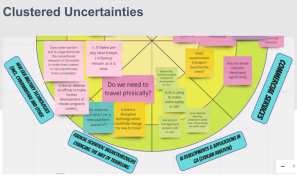
Rip Van Winkle Exercise:
● Explain the exercise:

Imagine that you are able to talk to a person from the future - who lives in the year 2040 and is able to correctly answer any question about the world in 2040.

You can ask this person up to 5 questions in order to find out more about the way each industrial ecosystem exists in 2040.
Note: you can only ask a question in such a way that the person from the future can only answer YES or NO. The example: Are there parking lots for flying cars in Madrid? YES/NO.
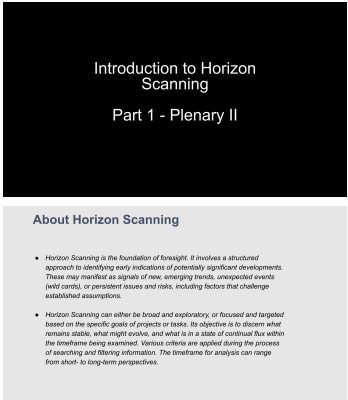
Please choose your questions wisely to obtain valuable insights, which could support strategic decisions during the next 17 years. | Annex 1: Rip van Winkle exercise template |

			- Distribute the "Rip van Winkle" template (Annex 1). - Give participants time to brainstorm and write down their questions. - Have each participant present their questions to the group. - Facilitate a discussion to transform questions into uncertainties.	
30 min		Group work I [Mapping uncertainties and drivers of change] Module 1: Rip van Winkle part 2. Clustering uncertainties and formulating drivers	**Clustering Uncertainties and Formulating Drivers** Guide participants in organizing their identified uncertainties into meaningful clusters and formulating concise drivers of change that represent the key forces shaping the future of their industrial ecosystem. **Key Concepts:** - Clustering: Grouping similar uncertainties together to reveal patterns and common themes. - Drivers of change: Broad, overarching forces or trends that drive the emergence of multiple uncertainties (e.g., technological advancements, regulatory shifts). - Collaborative sense-making: Encouraging participants to work together to interpret and derive insights from the clustered uncertainties. 1. **Review Rip Van Winkle Results:**	Annex 2: Clustering drivers template

		- Briefly recap the uncertainties generated in the Rip Van Winkle exercise. - Remind participants of the focus on long-term, impactful uncertainties. **2. Clustering Activity:** - Instruct participants to form groups of 4-5 people. - Distribute sticky notes and markers. - Ask each participant to write down one uncertainty per sticky note, using concise language. - Have groups collectively cluster similar uncertainties on a shared surface (e.g., whiteboard, flip chart paper). - Encourage discussion and iteration to refine the clusters. **3. Formulating Drivers:** - Guide groups to identify the underlying driver of change represented by each cluster. - Emphasize that drivers should be broad, impactful, and relevant to the ecosystem. - Have groups write down each driver on a separate sticky note. - Aim for approximately 8 drivers per group. - Use the "Clustering Drivers" template (Annex 2) to	

			capture the collective insights. **Additional Notes:** ● Encourage diversity: Ensure all voices are heard and diverse perspectives are considered. ● Capture insights: Document the clusters and drivers for use in subsequent workshop modules. ● Adapt the instructions and group size based on the number of participants and available time. ● Consider using online collaboration tools for virtual workshops ([Miro board](#)). ● Emphasize the iterative nature of the clustering process. ● Encourage participants to think critically and challenge assumptions. ● Use the identified drivers as a foundation for horizon scanning and strategic planning.	
10 min		**BREAK**		
15 min		Plenary session II Report back from Rip van Winkle and clustering activities	**Report Back from Rip van Winkle** To share and compare the drivers of change identified by each group during the Rip van Winkle exercise. **Time:** 5 minutes per group **Process:** 1. **Group Selection:** Randomly select a group to present first.	

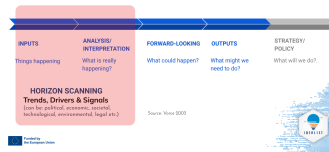|				
			2. **Presentation:** Ask the group to briefly present their identified drivers of change. They can use their Miro board or simply list the drivers. 3. **Clarifying Questions:** Allow other participants to ask clarifying questions about the presented drivers. 4. **Repeat:** Repeat steps 2-3 for each remaining group. 5. **Common Themes:** After all groups have presented, facilitate a brief discussion to identify any common themes or patterns across the drivers.	
15 min	PART 1 Introduction to Horizon Scanning Part 1 - Plenary II **About Horizon Scanning** ● Horizon Scanning is the foundation of foresight. It involves a structured approach to identifying early indications of potentially significant developments. These may manifest as signals of new, emerging trends, unexpected events (wild cards), or persistent issues and risks, including factors that challenge established assumptions. ● Horizon Scanning can either be broad and exploratory, or focused and targeted based on the specific goals of projects or tasks. Its objective is to discern what remains stable, what might evolve, and what is in a state of continual flux within the timeframe being examined. Various criteria are applied during the process of searching and filtering information. The timeframe for analysis can range from short- to long-term perspectives.	Plenary session II Introduction to Horizon Scanning (PART 1) Introduction to Horizon Scanning. Scanning for Signals (PART 2)	**Introduction to Horizon Scanning (PART 1 and PART 2)** Introduce participants to the concept of horizon scanning and its role in foresight. Familiarize them with the characteristics of weak signals and guide them on how to identify and collect such signals effectively. **Key Concepts:** ● Horizon scanning: A systematic approach to exploring the future by identifying early signs of potential change and disruption. ● Weak signals: Early indicators of potential change or disruption that may seem insignificant or peripheral at present. ● Diverse sources: Signals can emerge from a wide range of sources, including scientific publications,	

Horizon Scanning needed during periods of rapid change and uncertainty.
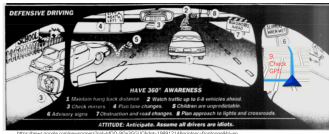
Key concepts: External & internal forces of the ecosystems
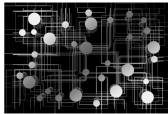
Key concepts: Generic foresight framework

INPUTS	ANALYSIS/ INTERPRETATION	FORWARD-LOOKING	OUTPUTS	STRATEGY/ POLICY
Things happening	What is really happening?	What could happen?	What might we need to do?	What will we do?

HORIZON SCANNING
Trends, Drivers & Signals
(can be: political, economic, societal, technological, environmental, legal etc.)

Source: Voros 2003

Key concepts: Horizon Scanning

- Thoughtful scanning is the **foundation** of foresight.
- **The objective** in scanning is to identify developments that could fundamentally change or disrupt the issue or system that we are studying in unexpected ways. The challenge is to look for early signs or weak signals that change is occurring.
- These changes can take **many forms**:
  - a new technology, economic restructuring, a famine, new values, new gender roles, new ideas, etc. The list is open ended. In the absence of data, weak signals are the evidence that disruptive change could be underway.

Key concepts of HS: Trends, drivers, signals

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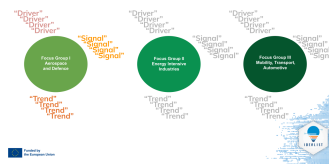
technological advancements, social and cultural trends, and unexpected events.
- Signal criteria: Good signals are plausible, novel, significant, and timely in relation to the ecosystem under consideration.

Presentation Flow:
1. Introduction to Horizon Scanning:
   - Define horizon scanning and explain its importance in anticipating and preparing for future changes.
   - Emphasize the proactive nature of horizon scanning and its focus on identifying emerging trends and weak signals.
2. **Characteristics of Weak Signals:**
   - Explain the concept of weak signals and their role in foresight.
   - Discuss the criteria for assessing the quality of weak signals (plausibility, novelty, significance, timeliness).
   - Provide examples of weak signals from various domains to illustrate these characteristics.
3. **Guiding Questions for Signal Identification:**
   - Present the general guiding questions for identifying weak signals (e.g., What new scientific or

Key concepts: trend definition

Definition of a trend:

- A historical change over time (up until the present).
- Changes that are measurable/observable, which means that quantitative or qualitative data can be collected, which can illustrate the historical pattern.
- Indicate a clear direction of change and dynamics.

Based on: John Cosk, Prosperity on the edge of crisis, 2017.
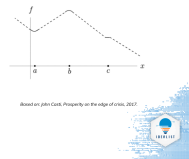
Key concepts: example trends

Examples of trends:

- Decline in enrollment in public schools
- Growing demand for specialized skills
- Widening economic inequalities

Based on: John Cosk, Prosperity on the edge of crisis, 2017.

Topic:
- FUTURE OF EDUCATION

Key concepts: driver definition

Definition of a driver:

- Influential forces of changes that are currently shaping or have the capacity to shape or transform a given system.
- Variables that can take on different states and thus affect a system in many ways.
- They are often called uncertainties.
- A specific type of driver is a wild card event (e.g. war)

"Drivers" = human action, chance, necessity, random trigger

"Driver"

Based on: John Cosk, Prosperity on the edge of crisis, 2017.

Key concepts: driver examples

Examples of drivers:

- Demographic shifts
- Regulation and government policies
- Performance metrics
- Teacher qualifications
- Global pandemic threat

"Drivers" = human action, chance, necessity, random trigger

"Driver"

Based on: John Cosk, Prosperity on the edge of crisis, 2017.

Topic:
- FUTURE OF EDUCATION

Methodological process of Horizon Scanning

1. Identify and frame the scanning **needs** (topic, participants, expected outcome)
2. Scanning and collecting data: collect relevant **information** about the external environment
3. Interpretation and **filtering**: analyse, organise and prioritise the findings
4. **Sense-making**
5. **Communicating** the results
6. Use the information in **decision-making**

IDEALIST

PART 2

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technological breakthroughs might be underway?).

- Discuss how these questions can help participants focus their attention and stimulate their thinking.
- Encourage participants to consider the specific context of their industrial ecosystem when applying these questions.

4. **Signal Sources and Search Strategies:**
   - Provide a list of potential signal sources (e.g., news articles, research papers, industry reports, social media).
   - Discuss different search strategies (e.g., keyword searches, trend analysis, expert interviews).
   - Emphasize the importance of using diverse sources and methods to capture a wide range of signals.

Specific guiding questions to consider:

- What new scientific or technological breakthroughs might be underway? Does this discovery break previous ways of doing things?
- What new intellectual ideas, beliefs, worldviews are emerging?

Introduction to Horizon Scanning

Instructions: Walk participants through the following slides on Horizon Scanning, paying particular attention to understanding what characterises a good signal.

Part II - Plenary II

Key concepts: Horizon Scanning

- Scanning for weak signals must be distinguished from searching for information.
  - In searching, the research scope is fairly well defined, often based on an analyst's particular interests and expertise on a topic.
  - Scanning looks for new insights outside an analyst's existing mental model.
  - **In scanning, we do not necessarily know what we are looking for**, hence the scope is broad, often shedding light on previously uncharted unknowns.

Key concepts: scanning guidelines

What shifts shall we look at:

- Shifting behaviors and preferences
- Shifting attention and narratives of key actors
- Shifts in business models, new models of collaboration etc.
- Scientific or technological advancements (nano-bio-cogno-info)
- Inefficiencies and gaps in systems or regulations
- ......

Key concepts: signal examples from the past

General signals that became a disruptive change:

- The rise of e-commerce platforms like Amazon disrupted traditional retail models
- Popularity of social media platforms like Facebook and Twitter in the early 2000s disrupted the way people communicate and share information
- The passage of GDPR in the EU in 2016
- The development of blockchain technology in the early 2010s, which challenged traditional financial systems
- The SARS and MERS outbreaks in the early 2000s

Signals that were a fad:

- 3D television

Key concepts: signal definition

- Definition of a signal:
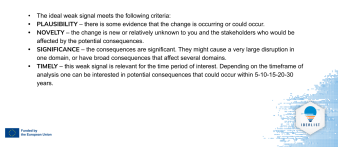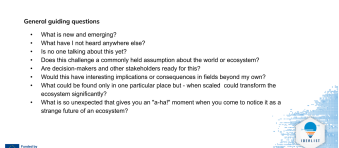
- The evidence that disruptive change could be underway.
- For example: emerging technology, emerging trend, sign of new, potential wild-card (e.g. surprising localisation of a signal; surprising & revolutionary development, leap, disaster, social change)

- How is a way of living/ culture starting to change?
- Are societal roles / models starting to change? How? Why?
- What are some emerging changes in relation to social media & Internet?
- Are consumption models starting to change? How? Why?
- Are there any emerging shifts in business models or the way we work?
- Are there any new emerging shifts in global norms, practices or regulations (e.g. related to trade, taxes, IP, environment)?

Additional Notes:

- Adapt the content and pace to fit the participants' background and expertise.
- Consider using real-world case studies to demonstrate the value of horizon scanning.
- Highlight the iterative nature of horizon scanning and the need for ongoing monitoring and adaptation.
- Encourage participants to reflect on how they can apply horizon scanning in their own work.

	What makes a good signal? 1/2 • The ideal weak signal meets the following criteria: • **PLAUSIBILITY** – there is some evidence that the change is occurring or could occur. • **NOVELTY** – the change is new or relatively unknown to you and the stakeholders who would be affected by the potential consequences. • **SIGNIFICANCE** – the consequences are significant. They might cause a very large disruption in one domain, or have broad consequences that affect several domains. • **TIMELY** – this weak signal is relevant for the time period of interest. Depending on the timeframe of analysis one can be interested in potential consequences that could occur within 5-10-15-20-30 years. **What makes a good signal? 2/2** What makes a good weak signal? Elina Hiltunen suggests a number of ways to recognize a good weak signal: Makes me laugh Seems unreal Not much information about it Strange/weird! Eureka moment! Challenges the status quo Rejected by the establishment Could be highly disruptive Never been done before **Collecting signals: guiding questions (1/2)** General guiding questions • What is new and emerging? • What have I not heard anywhere else? • Is no one talking about this yet? • Does this challenge a commonly held assumption about the world or ecosystem? • Are decision-makers and other stakeholders ready for this? • Would this have interesting implications or consequences in fields beyond my own? • What could be found only in one particular place but - when scaled could transform the ecosystem significantly? • What is so unexpected that gives you an "a-ha!" moment when you come to notice it as a strange future of an ecosystem? **Collecting signals: guiding questions (2/2)** Specific guiding questions • What new scientific or technological breakthroughs might be underway? Does this discovery break previous ways of doing things? • What new intellectual ideas, beliefs, worldviews are emerging? • How is a way of living/ culture starting to change? • Are societal roles / models starting to change? How? Why? • What are some emerging changes in relation to social media & Internet? • Are consumption models starting to change? How? Why? • Are there any new emerging shifts in business models or the way we work? • Are there any new emerging shifts in global norms, practices or regulations (e.g. related to trade, taxes, IP, environment)?		
60 min	Collecting Signals Group work	Group work II Module 2. Scanning and Collecting signals. Part 1: Collecting signals	**Module 2. Scanning and Collecting signals. Part 1: Collecting signals** The goal of this part of the workshop is to guide participants in actively searching for and collecting weak signals relevant to their industrial ecosystem. This will foster a mindset of curiosity and open-mindedness towards emerging trends and potential disruptions. Participants will be equipped with the tools and knowledge to identify signals from diverse sources, assess their	"Signal Collection Template" (Annex 3).

Collecting Signals

• Using the suggested sources (or other reliable ones) to collect the signals relevant to each ecosystem.

Collecting Signals

Aerospace & Defence   A bank with cards

Signals
A Few Examples from Aerospace & Defence ecosystem

1. XaaS (Everything as a Service): versatility and quick redeployment
2. Synthetic biology for fuel production
3. New aircraft programs for SMR (Small Modular Reactors) to decarbonize transport
4. Production of liquid hydrogen from renewable energies
5. Supersonic jet engines (high-speed travel)
6. Portable jamming systems due to drone proliferation
7. Fully 3D printed large aircraft
8. Flight shaming
9. AI-based air traffic control
10. End-users and clients are reluctant to buy products involving outsourced or rare materials

Collecting Signals
Suggested Sources

Collecting Signals
Suggested Sources

Health care market a bright spot for plastics suppliers

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quality, and collaboratively discuss their potential implications.

1. **Signal Scanning Activity:**
   ● Instruct participants to work individually or in pairs.
   ● Provide a list of suggested signal sources (e.g., news articles, research papers, industry reports, social media feeds).
   ● Encourage participants to use diverse sources and search methods.
   ● Set a time limit for scanning (e.g., 60 minutes).
   ● Instruct each participant to search for at least two signals. Signals can be found in various forms, such as articles, news stories, reports, or other relevant sources.
   ● Emphasize that signals do not have to be limited to technological changes but can also encompass PESTLE (Political, Economic, Social, Technological, Legal, Environmental) factors.
   ● Remind participants to look for both positive and negative signals. This diversity will provide a more comprehensive view of potential future trends.
   ● Have participants record relevant signals on the template, including a brief

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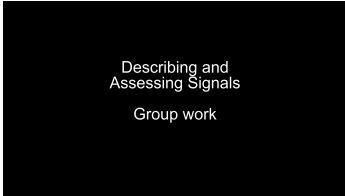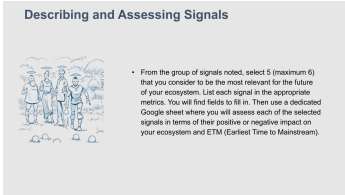
description, source, and potential implications.
- Provide sticky notes for participants to write down their signals.
- Each sticky note should include a brief description of the signal and its source.
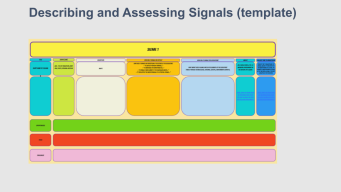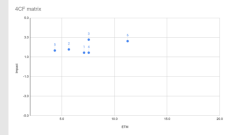
2. **Signal Sharing, Discussion and Prioritizing:**
   - Reconvene as a whole group.
   - Ask participants to share some of their most interesting or surprising signals.
   - Facilitate a discussion to identify common themes, potential impacts, and areas for further investigation.
   - Ask participants to prioritise signals. Each participant is given 5 tokens to allocate freely, assigning them to the signals they find most surprising and non-obvious (and potentially most relevant) to the ecosystem. The 5-6 signals with the highest number of votes are then selected for further work.

Additional Notes:.
- Consider providing a pre-populated list of signal sources or using online

			collaboration tools for signal sharing. Use our examples. ● Provide links to resources that offer further information on identifying and understanding signals. ● Ensure participants have access to these resources either digitally or in print. ● Emphasize the iterative nature of signal collection and the need for ongoing scanning. ● Encourage participants to reflect on the potential implications of the collected signals for their organization or industry. ● Use the collected signals as input for the subsequent signal assessment and sense-making exercises.	
60 min		**LUNCH BREAK**		
45 min	Describing and Assessing Signals Group work **Describing and Assessing Signals** • From the group of signals noted, select 5 (maximum 6) that you consider to be the most relevant for the future of your ecosystem. List each signal in the appropriate metrics. You will find fields to fill in. Then use a dedicated Google sheet where you will assess each of the selected signals in terms of their positive or negative impact on your ecosystem and ETM (Earliest Time to Mainstream).	Group work II Module 2. Scanning and Collecting signals. Part 2: Describing signals	**Module 2. Scanning and Collecting signals. Part 2: Describing signals** From the group of signals identified in the previous exercise, select 5 (maximum 6) that you consider to be the most relevant for the future of your ecosystem. List each signal in the appropriate metrics table. Fill in all the fields in the table with relevant information answering to questions provided in the table. Work individually or as a group when describing each signal. **Metrics Completion:**	Annex 4: Describing signals template

	Describing and Assessing Signals (template) 		Explain the fields within the metrics template (Slide and Annex 4: Describing signals template) and ensure participants understand how to populate them accurately. Emphasize the need for clear and concise descriptions of each signal.	
45 min	**Describing and Assessing Signals (sample Gsheet for assessments)** **Describing and Assessing Signals (sample graph from Gsheet)** 	Module 3. Interpretation of results. Part 1. Assessment of signals in GSheet and then listing challenges, risks, opportunities	**Module 3. Interpretation of results. Part 1. Assessment of signals in GSheet and then listing challenges, risks, opportunities** After you describe all the selected signals, move to the next exercise, in which you will be giving numerical assessments in terms of: ● the positive or negative impact of each signal on your ecosystem (on a scale from -5 to 5, where -5 indicates an extremely unfavorable impact, and 5 indicates an extremely favorable impact) and ● the Earliest Time to Mainstream (ETM, that is the minimum time needed for the signal to mature and be the most impactful on the ecosystem; on a scale from 2 to 20 years). Open or print out a relevant template to proceed. Follow the instruction tab to guide participants through the activity. Downloadable from the IDEALIST project	Annex 5: Gsheet for signals assessment

website:

🟩 GSheet Horizon Scanning Training …
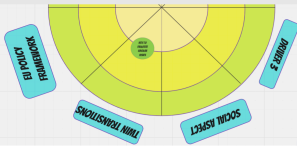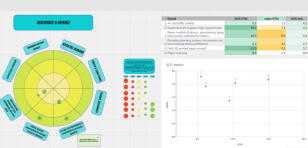
1. **Signal Assessment:**
   - Direct participants to the [designated Google Sheet](#).
   - Explain how to assess each signal's impact (positive or negative) on the ecosystem and its Earliest Time to Mainstream (ETM).
   - Demonstrate the use of the sample graph to visualize assessment results.
2. **Discussion and Refinement:**
   - Facilitate a group discussion on the assessed signals, encouraging participants to share insights and rationale behind their assessments.
   - Guide the group in refining their assessments based on the discussion and any new information that emerges.
3. **Finalization:**
   - Ensure all participants have completed the metrics and assessments for their selected signals.
   - Collect the Google Sheet data for further analysis or reporting.
   - Paste the results from GSheets together with the matrix into the appropriate place in Miro (if you are implementing an online workshop) or display them

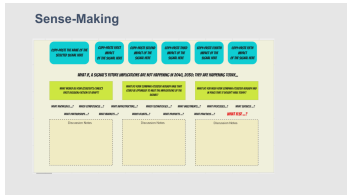|				
			in the workshop room before the next task.	
20 min		Module 3. Interpretation of results. Part 2: Designing maps of drivers and signals	**Module / Exercise 3 Assessing signals & map of drivers part 3 (Map of Drivers)** 1. Transfer the names of the signals developed in the metrics to the appropriate dot. In the next step you will find instructions for selecting the size and colour of the dot. If you are implementing an offline workshop, cut out the dots from the attached template (part of Annex 6: Map of drivers template) and then use them to create the map. If you are running online, you will find the relevant dots in the template on Miro board DELIVERABLE_5.2_IDEALIST_HORIZON_SCANNING_BOARD. 2. Select the appropriate dot for the signal, guided by the estimated level of impact recorded in the metric, and then write the title of that signal in the middle. ● If the impact of a particular signal has been assessed at a value within the - 5 >= -3 range, then select the **large red dot** and enter the signal name in its centre. ● If the impact of a particular signal has been assessed at a value within the - 2.9 >= -1.1 range, then select the **small red dot** and enter the signal name in its centre.	Annex 6: Map of drivers template

- If the impact of a particular signal has been assessed at a value within the - 1 >= 1 range, then select the **small yellow dot** and enter the signal name in its centre.
- If the impact of a particular signal has been assessed at a value within the 1.1 >= 2.9 range, then select the **small green dot** and enter the signal name in its centre.
- If the impact of a particular signal has been assessed at a value within the 3 >= 5 range, then select the **large green dot** and enter the signal name in its centre.

3. In the next step, make a decision on which driver of change (within a given industrial ecosystem) to assign the signal to.

4. Place the signal dot at the appropriate distance from the centre of the circle, guided by the ETM (Earliest Time to Mainstream) rating. The closer you are to the centre of the circle, the shorter the time to "mainstreaming" a given signal. As a guide, assume that the field closest to the centre of the circle is 2-5 years, the intermediate field is 6-10 years and the outermost field is 11 to 20 years.

10 min		BREAK		

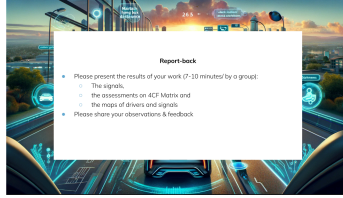| 30 min | | Module 4. Sense - making | **Sense-making**

How to use collected signals in daily practice?

Select one signal, which you would like to work with and - write down its name into a given space in the template below.

In the next step, write down key impacts of this signal from the metric (output of Module / Exercise 2 Scanning and Collecting signals part 2 Describing signals) into a given space in the template below.

Answer 3 main questions about the ways on how your cluster or your company could adapt, optimize and prepare for the signals' implications. Think of the resources or processes it would need today.

What if a signal's future implications are not happening in the 2040s or 2030s; they are happening today...

Question 1: What would be your (cluster's/SMEs') first decision/action to adapt?

Question 2: What do your company/cluster already have that could be optimised to meet the implications of the signal?

Question 3: What do you wish your company/cluster already had in place that it doesn't have today?

Answer the questions taking into account the following categories: people, | Annex 7: Sense-making template |

			technologies, knowledge, processes, networks, rules, vision, mission, values.	
60 min		Plenary session III (final one)	**Final Plenary Session** 1. **Recap of Key Takeaways:** ● Remind participants of the definition of a signal and its characteristics (novelty, plausibility, significance, timeliness). ● Reiterate the importance of signals in challenging mental models and identifying potential disruptions. ● Emphasize the value of foresight in navigating an uncertain future. 2. **Reflection on the Workshop:** ● Invite participants to share their reflections on the workshop, focusing on: ● The process of identifying and assessing signals within their ecosystems. ● The challenges they encountered in selecting and evaluating signals. ● The insights they gained about potential future disruptions and opportunities. 3. **Discussion and Q&A**	

THANK YOU!

- Open the floor for a broader discussion on the following:
  - How can participants apply the signal scanning and assessment framework in their ongoing work?
  - What are the potential benefits and limitations of using this approach?
  - How can organizations foster a culture of foresight and continuous learning?
- Address any questions or concerns raised by participants.

4. **Closing Remarks:**
  - Thank participants for their active engagement and contributions.
  - Summarize the key takeaways from the workshop and highlight the importance of incorporating foresight into strategic planning.
  - Encourage participants to continue exploring and refining their signal scanning and assessment skills.