



Manual for using the OBSERVE deck of cards of emerging topics for future oriented strategic conversations¹

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1 Background

The Future & Emerging Technologies (FET) program of the European Commission invests in transformative frontier research and innovation with a high potential impact on technology, to benefit our economy and society. FET provides a unique combination of high risk, long term, multidisciplinary and collaborative frontier research, which lays the foundations for radically new, next generation technologies. It converts proofs of concept into industrial applications and systems.²

The OBSERVE project supports FET by screening emerging developments that could be relevant to be taken up in the FET funding activities. In the screening phase the team generated a set of 171 emerging topics that are documented in the OBSERVE Horizon Scanning Report (Deliverable 1.2). Complementary to the report the topics were printed on a deck of cards to support the use of the emerging topics in strategic processes of actors across the R&I landscape. The deck of cards can be downloaded at the OBSERVE Website.

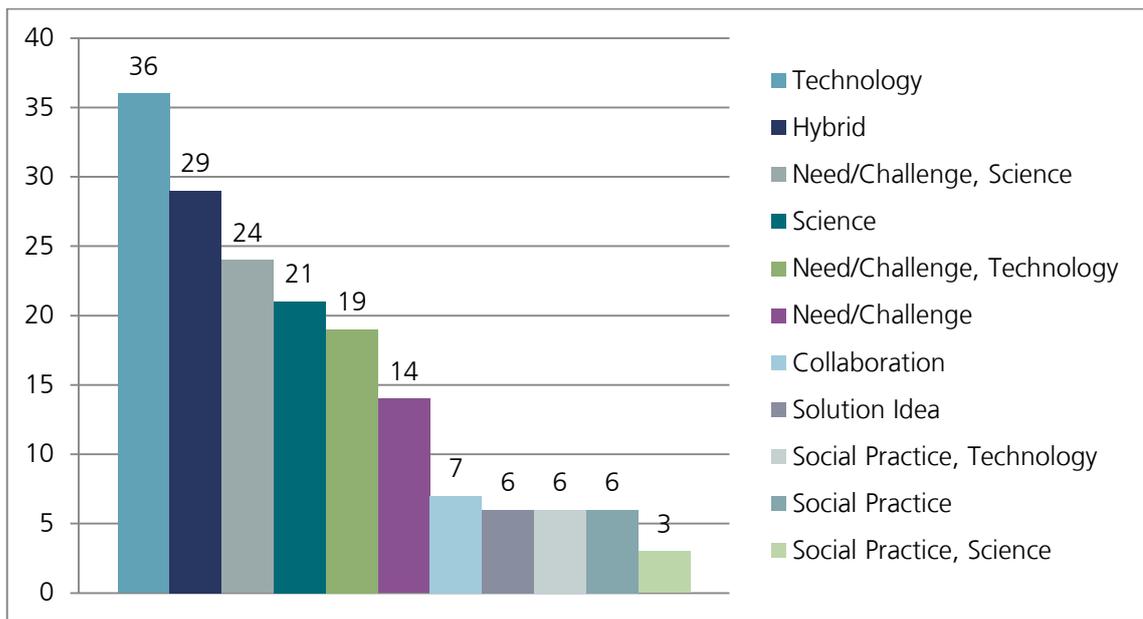
This manual outlines suggestions on how to use the cards in a strategic process for different actors from policy, society and industry.

² <https://ec.europa.eu/digital-agenda/future-emerging-technologies-fet>, last access: 27/04/2016

2 The cards

The deck contains 171 cards. The different symbols indicate the basic types of change. Combinations of different types are indicated by combined symbols:

Symbol	Type of Change	No. of Cards
	Solution Idea: Emerging technological or social innovation or combination of both addressing a certain problem	6
	Science: Emerging research fronts	21
	Technology: Emerging frontiers technology development	36
	Challenge/Need: Challenge or need with long term relevance for society newly emerging or gaining a new dynamics	14
	Social Practice: Emerging change in social practices (new ways of doing) including policy practices	6
	Collaboration: New formats of collaboration in research and innovation and new constellations of actors collaborating in particular across disciplines	7
	Hybrid: Developments spanning all the above types	29



The cards are numbered within each type (e.g. Technology 1 – Technology 36).

Each Card gives a title, a short description and the source where this item was first identified. In addition, four impact levels are distinguished:

- “Local”: impact in a specific domain (e.g. health)
- “Mid Range”: impact across several domains, e.g. new materials with applications in health, ICT and energy
- “Widespread”: impact across society, e.g. fundamental changes in communication patterns
- “Fundamental”: impact on the long-term future of the civilisation

3 Using the OBSERVE cards in strategic debates

The cards are meant to be used for inspiring strategic conversation. They give only very basic information on the emerging topics. Further material can be found in the OBSERVE Database. For deeper engagement, additional research is required. In the following paragraphs, we outline three basic types of strategic conversations that we think are the most broadly useful ones: the strategic orientation workshop, the idea generation & inspiration workshop, the system mapping workshop.

3.1 Strategic orientation workshop

3.1.1 Purpose

The purpose of this type of workshop is strategic orientation of a group such as a department of a ministry, a business unit of a company or an NGO. It can also be applied for setting up a new field of activity. The workshop will usually be followed by a strategy building exercise such as roadmapping, scenario development, SWOT exercise or idea generation to address the strategic issues identified.

3.1.2 Participants

This workshop is especially effective if actors from diverse perspectives within the organization are involved. For example, in a company, it could be marketing, R&D, controlling, production, human resources. Next to the strategic orientation, it underpins the group cohesion and team spirit as people get to know each others' perspective.

3.1.3 Process

Participants are asked to select a limited number of cards (e.g. 5) they see as the “tallest trees”, i.e. the ones with the highest impact on the long term future of the organisation or the organisations domain of activity. Depending on the timing available, this can be done previous to the workshop, so participants come “prepared”. In the workshop, each participant introduces his/her “tallest trees” and pins the respective card on the board. If two people have the same card, they are placed together.

In a second step, other cards relating to the “tallest trees” are assigned to form a “forest” of developments relating to the tallest tree. This step can be limited to those “tallest trees” that have been mentioned by more than one participant. Alternatively, a voting exercise can serve to select the ones to be tackled.

The elaboration of clusters can be done in the plenary or in small group work. Another possibility is to ask people to prepare not only a set of “tallest trees” but also already select related issues of this “forest”.

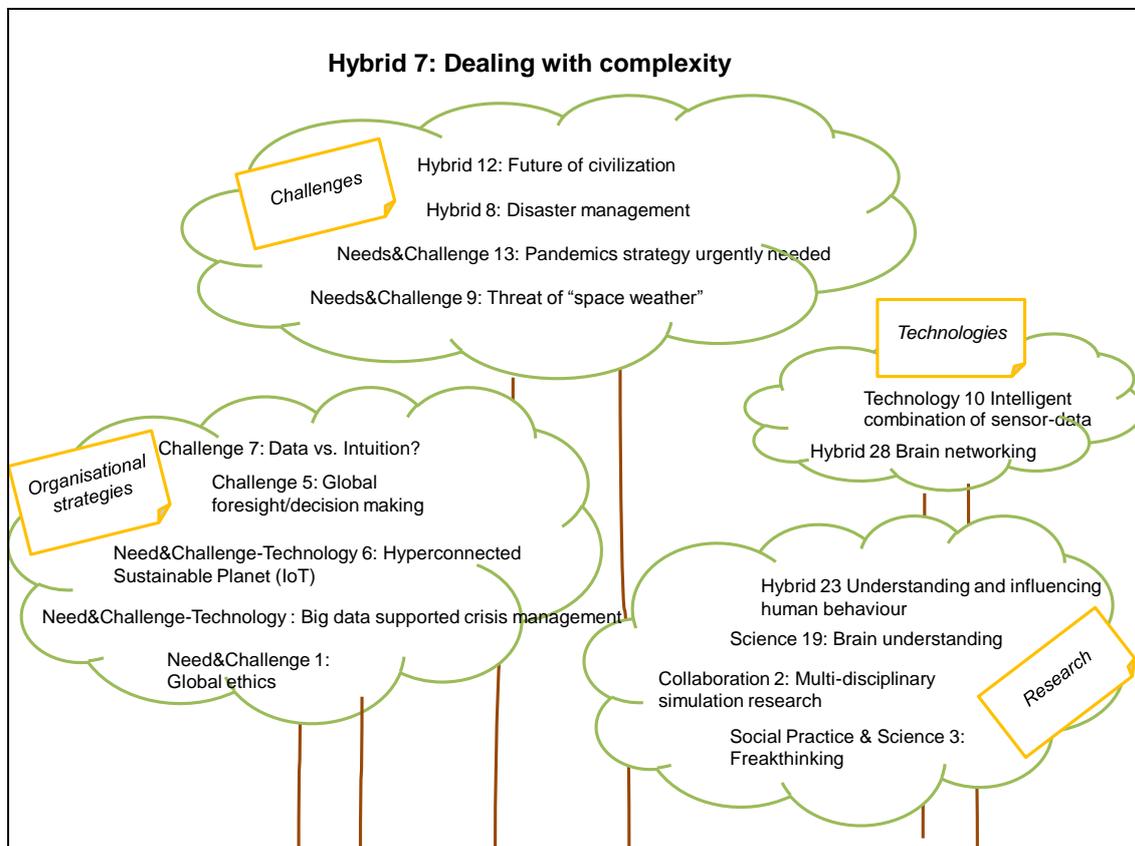


Figure 1: Example "Forest" around the tallest tree "dealing with complexity".

Variation:

For a faster selection and less time for the preparation, the following proceeding is possible: Several sets of cards are distributed among all participants, so each card is assigned several times and each participant has a pile of about 10 cards. Everybody is asked to select the 5 „most relevant“ for the issue at stake (e.g. future of the organisation) and to pass them on to the next participant with a few notes on the reasons for selecting them. The next person then selects another three and the third one selects one card. Then the remaining cards are assessed. Depending on the group size and time, all can be treated as “tallest trees”. Alternatively, the ones that appear several times are selected or a voting exercise is carried out as above.

Add-on 1: Three Horizon Scanning

A useful format for analysing a cluster of developments is provided by the “three Horizon Framework”. Cards can be placed on this scheme to discuss what the transformative long term developments (level three) are and which aspects are rather parts of the current paradigm. The impact level assigned to each card may serve as an orientation.

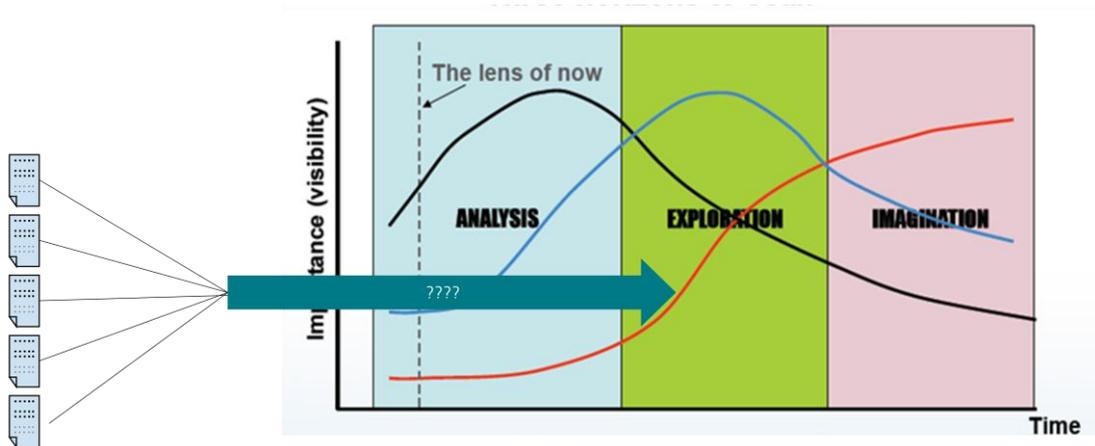


Figure 2: Use of Three Horizon Framework for Assessment of Cards³

Add-on 2: Awareness-raising

The selected „tallest tree cards“ can be used throughout the organisation or even with external actors (e.g. research partners or clients) to inspire a debate on strategic implications, e.g. in a World Café setting where the card is placed and people spend a limited time (e.g. 30 Minutes) to brainstorm on risks and opportunities emerging from this card. For this purpose, a more detailed card can be elaborated.

³ <https://paul4innovating.com/2010/09/10/the-three-horizon-approach-to-innovation/>, last access: 27/04/2016

3.2 Idea generation & inspiration workshop

3.2.1 Purpose

The purpose of this type of discourse is to generate new ideas across and beyond established silos and well trodden pathways.

3.2.2 Participants

This workshop can be carried out by any type of group. In order to have a large diversity of ideas and to maximise the process benefit of mutual inspiration it makes sense to have people from a wide range of backgrounds. As an example if a new solution is to be developed it makes sense to involve people from the context of use and daily life together with developers of technologies and services.

3.2.3 Process

Each participant gets one set of cards (e.g. of one type). Everybody is asked to select a certain number of cards he or she sees as of particular disruptive potential for the domain of interest (e.g. specific line of activity of an organization).

One person starts by introducing one of the selected cards. All others add one card from their pile fitting to the first card. This is done again and again until all selected cards are assigned to piles. After this matching phase, a high number of diverse piles are generated. Participants are asked to select the most interesting ones (e.g. by voting or assignments of dots). The most highly ranked piles are assigned to small groups who then elaborate one idea in response to the respective set of cards, e.g. within a structured template.

Add on: The ideas can be assessed using a set of criteria relevant for the group, e.g. societal benefit, market potential, fitting with group identity etc.



Figure 3: Illustration for use of the cards⁴ for idea generation

3.3 System mapping workshop

3.3.1 Purpose

This workshop underpins the analysis of the dynamics of change within a certain system. In many cases, this type of dialogue will form the first phase of a scenario exercise. It is however also useful on its own to underpin the group's systemic thinking and responsiveness towards changes in different areas.

3.3.2 Participants

For this workshop, it is important to have experts for all relevant aspects of the system of stake. If for example the system is "e-mobility" participants should cover such diverse aspects as battery technology, infrastructure, business models, user preferences, city development and policy framework conditions. Accordingly a pre-workshop analysis is required. The OBSERVE cards are not developed for a specific system and

⁴ The following cards are depicted: T8, N&C-T18,H9,S12, S14, N&C14, N&C-S15,Col3

can therefore only form part of the input – participants should be encouraged to add cards, system specific studies should be screened to add missing developments. As a framework STEEP⁵ or similar approaches can be used to ensure that all domains are covered.

3.3.3 Process

In a group process, the most important developments influencing the future of the system are selected. Then, the impact of each factor on the others is systematically assessed. This can be done within a matrix template. The factors with the highest influence within the system (the most active ones) are selected. Jointly, the group creates a map of the system specifying the influence of the factors on each other.



Figure 4: Illustration for use of the OBSERVE cards for system mapping

⁵ Society, Technology, Environment, Economy, Policy