1. Introduction - Context and Expectations

The EC’s DG RTD is advised by EFFLA to set up a Strategic Foresight process based on a ‘hub’ situated in the DG RTD and a network of horizon scanning sources/groups engaged in Forward Looking Activities (FLAs), working synergistically to create added value. This process is expected to provide a framework for better integrating FLAs that are taking place at the European Commission and in Member States, while paying particular attention to activities within which the results of intelligence gathering efforts are analyzed and made sense of, and evidence-based options are generated. At the same time, these sense-making activities are expected to feed-back into intelligence gathering processes, revealing gaps and inconsistencies, and providing insights for further improvement of strategic intelligence activities. By strengthening sense-making activities, the Strategic Foresight process is expected to provide more evidence-based analysis of issues, assessments, and impacts, while still identifying obstacles that can hinder or prevent desired outcomes1. The successful implementation of the sense-making step is a pre-requisite in embedding FLA in the Commission.

1 Further clarifications are available in Policy Brief No 2: How to design a European foresight process that contributes to a European challenge driven R&I strategy process.
2. Definitions of Sense-Making

In its most basic meaning, “sense-making” is a process by which people give meaning to personal experiences. However, this process has been studied by researchers from different fields of expertise (information science, organizational studies), who have developed different approaches to sense-making. Authors have argued that sense making in relation to futures research “should be seen in terms of diversity and productive difference, not adherence to any single orthodoxy, tradition or view”\(^2\). Sense-making is a subject that involves continuous re-definition in its personal and social aspects.

The sense-making of DG RTD is expected to be an open and inclusive narrative, fostering dialogue rather than conflict. Sense-making activities are tied to their cognitive frameworks, which are abstract re-presentations of perceived things and events, developed over time through experience and interaction\(^3\), and perceptions are dependent upon internal factors (values, biography, worldview). Hence, the sense-making will need to include as much diversity of replicable practices (such as scenario planning, etc.) as possible.

Sense-making processes are invoked to create a new order from what seems chaotic and unintelligible. Certain authors have argued that sense-making “has seven properties, which are grounded in identity construction, retrospective, enactive of sensible environments, social, ongoing, focused on and by extracted cues, and driven by plausibility rather than accuracy”\(^4\). Sense-making is not the same as interpretation, and even less similar to decision-making, but it is rather closer to internalizing and placing into schematic frameworks specific types of intelligence. Sense-making is an effort to understand relations between people, places, and events in order to create mental models which then enable anticipation of behaviors and effective action.

Sense-making is primarily a narrative process, and can be conceptualized as successive states of order, interruption, and recovery\(^5\). As such, it links between the Strategic Intelligence (SI, Stage I) part of the strategy or policy cycle, and Stage III (Selecting Priorities)

### Necessary elements of the future EU strategic process

- **Foresight (I) > Insight (II) > Strategy (III) > Action (IV)**
- **Sense-making**
- **Decision-making process**
- **Implement**

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\(^5\) Ibid.
The outputs of activities in Stage I are studies, series of databases, networks and information relating to potential forces for change. Strategic Intelligence should be thought of as taking place across the whole of DG RTD, + other DGs + MS + corporate + NGOs + think tanks: at this stage, the funnel needs to be as wide as possible. This is a preliminary stage to the sense making in the Commission.

In particular, DG Connect is heavily engaged in technology foresight, and the Hub should have early discussions on collaboration with their activities. Similarly other DGs – probably mostly engaged in the Innovation Union – undertake Foresight a various levels, and though DG RTD is mentioned throughout this Policy Brief, other research/policy relevant DGs should be considered.

The outputs of SI can be captured in the form of reports, however much of the value is in information available electronically as the basis for specific sense making assignments. The tools available from big data can be used to mine this data, to provide maps of capability, people, as well as ideas on emerging pictures. There are many ways of organizing this information to detect patterns, to explore linkages, etc. In the discussion below we assume that the persons running the sense making processes are familiar with the extent and use of this material.

3. Aspects of Sense-Making

Within the overall process of sense-making, leading to visions of the future, strategic options and potential actions, there are a number of different tasks, which may map differently on to the DG RTDs cycles. These are:

1. Exploring different visions
2. Analysing trends
3. Analysing drivers
4. Creating different scenarios
5. Building the strategy options
6. Selection of priorities

It is anticipated that the sense making process may occur with different scopes at different stages in the DG RTD’s preparation, decision making and implementation processes: wider in the stages discussing a new Framework Programme, for instance; and narrower as foresight is explored for specific topics in the implementation. In the discussion below, we consider both

- Links to the timeline for early stages of Horizon II
- Sense making as part of a more focused programme or project activities as in the list above.

The Figure below is from the presentation behind Policy Brief #2.

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7 Successor of Horizon 2020, meaning a programme with its validity as from 2021
A common essential aspect of any type of sense making is that it should be clear who is the client. For a specific small piece or work, it could be the person who needs to make a decision. This person (or group) needs to be involved in some tasks (flagged below) and informed throughout. This could be a representative of another DG for sense making around a difficult topic, a theme leader within H2020, a project manager of a research project or a new Joint Programme Initiative, etc.

For Horizon II, the client is more diffuse and is perhaps represented best by the DG of DG RTD during the sense making stage. The DG needs to be able to articulate to other DGs the impact of Horizon II on their concerns; and to ensure that there is good transition to Stage III, Selecting Priorities.

Another common attribute of all the tasks is the need which may arise for in depth investigation of specific topics. Often a study of 3-4 weeks duration is sufficient, but without this the ongoing work may be based on assumptions which, either now or going forward, may be unfounded. The DG RTD is not currently able to let such contracts within any reasonable timescale. This needs to be fixed as part of creating a foresight culture, which will be the subject of a forthcoming Policy Brief.

4. Tasks within Sense Making

(i) Exploring different visions

Exploring different visions is a useful way of understanding the role of drivers of change and their differing effect on different regions/industries. This is the first stage of sense making, and often results in an understanding of the structure and relationships between the drivers of change.

This is an ongoing process, and would involve MS to ensure that diversity would be captured. The storage and sharing of these visions is an important part of the work of the Hub. From the range of visions “out there”, those relevant to the specific topic under consideration and timeframe should be discussed, and the differences understood – are the differences because of cultural perspectives? What would make one vision rather than another happen?

EFFLA has taken a lead towards articulating a Vision for 2030 (based on the Council of Europe’s work and hence views from Member States) to support Horizon II\(^8\), as well as encouraging the Horizon 2020 themes to articulate their vision. The Hub would need to ensure that visions were also

\(^8\) See Minutes of EFFLA meeting 25th-26th April 2013.
informed by longer term trends e.g. to 2050 or 2060, perhaps working in an Innovation Union context, and facilitating work to reconcile inconsistent visions (as between UK BIS which encourages international students and UK Borders Agency which is driven by short term voter pressure in marginal seats to reduce immigration).

The Hub would need to develop a map of Foresight in research & innovation across the EU ecosystem (EC, MS, Corporates, NGO) in order to co-create and articulate a vision of the role of DG RTD.

(ii) Analysing trends

Trends, disruptive wild cards and weak signals are the output from the horizon scanning processes (Policy Brief on this subject is in preparation). Many of these may be of uncertain impact, and/or contradictory.

The selection of trends to build into foresight for a specific topic is a key task: it is well known that innovation often comes from outside the focal domain, but at the same time, it is wise to avoid “boiling the ocean”.

Moving from “the heap” of information thrown up by SI, and data useful for building into mental models of the future (scenarios) involves three tasks:

- Reconciliation of trends – are several going in different directions (e.g. urbanization leads to smaller families but also lower child mortality – what is the effect on population numbers?)
- Structuring – are some clusters emerging – what is behind this? (e.g. various aspects of activity related to cyber – national security threats, threats to infrastructure, commercial fraud)
- Spotting areas for more research. (e.g. deep ocean oceanographic studies)
- Selection and abstraction, (e.g. from 50 global trends, selecting the 20 most relevant to urban futures)

These tasks rely on the output of the SI stage and use expert groups. To do this, the Hub needs good connections inside EC and expert groups and with MS etc.

For Horizon II: the Hub could at a preparatory stage, start work on anticipating topics that will come under stress e.g. Open Innovation, IPR. These topics would come from consultation with a range of informed sources: within the EC e.g. Chief Scientific Adviser, from a bottom up process and/or EFFLA could take a lead.

There are standard interview methodologies (e.g. the Shell-derived seven questions) for this stage of information gathering.

(iii) Analysing drivers

The process for documenting the trends above to a form where outsiders can discuss them is a desk job, managed by the Hub.

Sorting the trends above and determining which will be drivers of change is often done using a 3 Horizons methodology, which separates the trends which are currently driving change from those which are in the innovation stage and those which could be significant in the timeframe considered but are not yet having an effect. The discussion around drivers is an excellent way of exploring perspectives in a diverse group: particularly letting experts and futurists come to a shared view. This is a format for engaging with people who might make changes happen: maybe two groups – one from science etc, one outside reflecting a range of geographies.
Role of Impact Assessment and public consultation

Ahead of a new initiative, the European Commission has to assess the potential economic, social and environmental consequences – so called Impact assessment (IA). The aim is to prepare evidence for the political decision-makers on the advantages and disadvantages of possible policy options by assessing their potential impact. In practice the IA, e.g. ahead of a new Framework Programme spells out three/four options: business as usual, interrupt EU intervention and a new policy option. The fourth one could be a slight modification of business as usual. This means that the only realistic option is the new policy option, i.e. IA is used to underpin the actual proposal of the Commission. The conclusion is that the sense-making step has to provide input to the IA well before the process starts. In practical terms this means that ahead of Horizon II, the sense-making step has to provide first input (see Annex for tentative time-line) at the latest during 2017 as the preparation of the IA has to start early 2018 or even before.

In the same way as Impact Assessment is used systematically, the EC uses open public consultations ahead of major policy proposals to encourage a more involvement of stakeholders, which should contribute to enhancing the Commission’s accountability. The questionnaire is usually a combination of leading questions and open questions. The sense-making step should provide useful input in order for the Commission to put forward more informed questionnaires.

(iv) Creating scenarios

Scenarios for a specific topic and timescale are often created in a two or three day workshop involving stakeholders rather than experts (in the corporate world, the Board). The scenarios sketched by the workshop will need to be developed in more narrative detail later: the scenarios as developed suggest a number of options.
The organisation of the scenario process is well understood and can be outsourced: however this is a crucial stage and the Hub should ensure that a number of aspects of good practice are enforced, e.g.

- The client is involved (see discussion re “who is the client”)
- The workshop involves heterogeneity of backgrounds – change comes from outside the domain – outsiders are needed to challenge assumptions
- Workshop participants are content with the scenarios created

The scenarios are tested against groups of the public – e.g. school children, landowners, business people, retired people, etc. By using imagery and methods which engage the emotions as well as the intellect, the team learns where it has made assumptions and is able to see where a comfort zone has been in action. Scenarios were seen as a good mechanism for engaging with Impact Assessment through e.g. developing scenarios for specific topics such as Open Innovation.

**(v) Building the strategic options**

This should involve the same stakeholders as developed the scenarios, and can be done in a workshop or via electronic iteration. The vision correlates with the scenarios, and may be one preferred scenario or a mixture of more than one. The strategic options may be robust – good for all scenarios – or scenario dependent

At this stage, strategic options are generated, linking back to the Vision e.g. Vision 2030 for Horizon II. The options should flesh out the answers to the question: what does success look like?

The strategic options for Horizon II should be visible at DG level, and provide mobilizing goals (in the way that the Innovation Union does not) they must support a vision of ERA compatible with Commission’s view of 2030. Having a Champion with good access to the client (the Commissioner) is important, he/she should be trusted to speak for overall direction, and take part in the scenario and the strategic options workshops, have dinner with Advisory Boards, etc.

**(vi) Selection of priorities**

This is a process which is political and the main purpose of Stage III. There should be well defined interfaces from Stage II to Stage III since the consultation process and stakeholders will be different. Traditionally different units within DG RTD have the responsibility for impact assessment and the public consultation. It is vital that the hub at an early stage establishes close working relationship with relevant units within DG RTD and other policy DGs and in particular with DG RTD in order to manage a smooth ‘handover’ from Phase II to III. In fact this is possibly the most critical part of the whole new strategic process. In this context appropriate links should also be established with the CSA and any potential network set up by the CSA.

**Recommendations**

1. The EFFLA Secretariat should provide a working document on the roles of the Hub, from the individual Policy Briefs
2. This Policy Brief should provide input to the Handbook planned as a parallel to the Impact Assessment Handbook
3. A format of facilitated discussion, sharing expertise of EFFLA Members to formulate the specifics of a Policy Brief, was thought to be an effective way of working.
4. DG RTD should start thinking about the Strategic Intelligence and Sense Making stages of Horizon II, now bearing in mind the tentative time-line for Horizon II in Annex.
5. Sense-making should be an essential input to the Impact Assessment planned for Horizon II.
6. Potential for public consultation for Horizon II – how to get informed & useful comment – public consultation could be effective on the basis of output from sense making – with series of questions for stakeholders and the public.

7. Member States’ mechanisms for input will continue to mainly be at Stage III, Selecting Priorities, while experts from Member States will be involved as experts in Stage II – see further Policy Brief 10 on how to involve MS in FLA at EU level.
### Annex: Timeline for Horizon II

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<td><strong>Commission</strong></td>
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<td>New Commission</td>
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<td>New Commission</td>
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<td><strong>Proposal/communication from the Commission</strong></td>
<td>Ex-post evaluation FP7 (end of)</td>
<td>Mid-term review H2020 (mid 2017?)</td>
<td>Horizon II Consultation (end of 2017)</td>
<td>EU2030-strategy/budget (mid 2018)</td>
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<td>Start Horizon II</td>
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<td><strong>Estimated time-line for input to the Commission (normally 6-12 months before a proposal)</strong></td>
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<td>Questions for consultation formulated mid 2017</td>
<td>Input for proposal and IA in beg. Of 2018</td>
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<td>- <strong>Strategic intelligence</strong></td>
<td>Strategic intelligence is on-going but in order to have impact for Horizon II main part has to be before 2017</td>
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<td>- <strong>Sense making</strong></td>
<td>Sense making is on-going but in order to have impact for Horizon II the main part has to be done before Impact Assessment is done, i.e. ideally end of 2017.</td>
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9 The EU-presidencies after Finland is not yet decided.

10 It should be noted that the new Commission after Barroso is very timely concerning the preparation of the next EU-strategy. However, the EP election and a new Commission in the middle of 2019 could be a complication for the negotiations.
### Time-line for sense-making ahead of Horizon II (2021 – 2027)
Sense making has to deliver input early enough in order to be taken into account in the Impact Assessment of Horizon II which will have to be presented at the end of 2018. As a proposal of this kind normally takes around a year to prepare for the Commission the sense making has to deliver by the end of 2017. In this context a possible Lund II-conference should be used as a major event to involve stakeholders in the process.

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<tr>
<th>Possible events</th>
<th>Planning of LUND II conference (Haag/Bratislava?)</th>
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<td>Time-line for sense-making ahead of Horizon II (2021 – 2027)</td>
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