JERRI

LESSONS LEARNED FOR GOAL DEVELOPMENT

DELIVERABLE D10.2
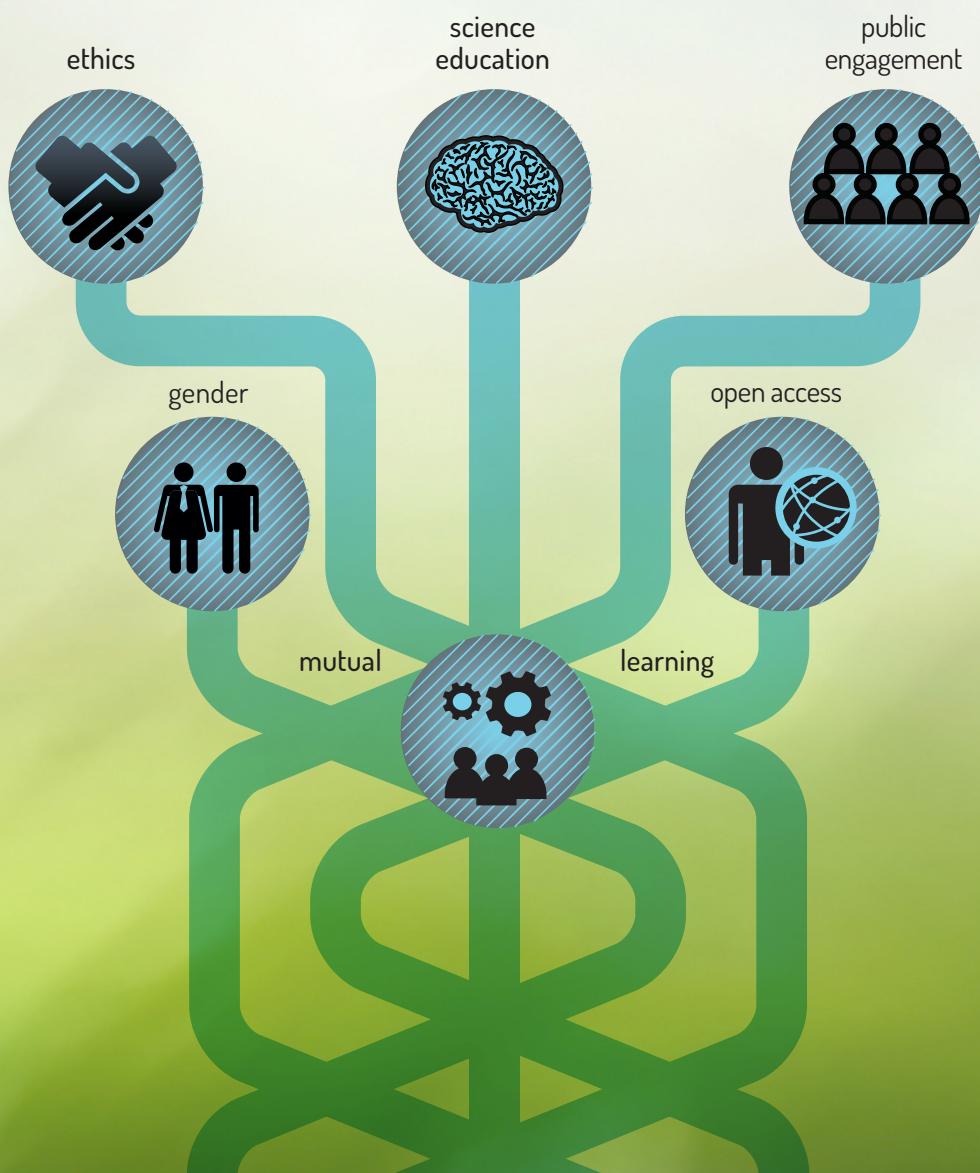
ethics

science
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gender

open access

mutual   learning

JERRI – Joining Efforts for Responsible Research and Innovation

Deliverable D10.2

Lessons learned for goal development

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EXECUTIVE SUMMARY

The project Joining Efforts for Responsible Research and Innovation (JERRI) is orchestrating a deep RRI transition process within the two largest European Research and Technology Organizations (RTOs), the German Fraunhofer-Gesellschaft and the Netherlands Organization for Applied Scientific Research (TNO). The process is conceptualised as an intense mutual learning process between the two organizations, a wider circle of RTOs and Research and Innovation (R&I) stakeholders across Europe.

This report presents the lessons learned from the first phase of this transition process where both organisations engaged in a process of setting goals and selecting concrete pilot activities for the five aspects of responsible research and innovation. In particular; we derived ten issues to be taken into account when engaging in such processes that we hope to be of use for other actors wishing to engage in such a process in particular RTOs:

1. Adapting the process to the degree of institutionalisation
2. Tailoring the involvement of external stakeholders
3. Involving change agents
4. Balancing consensus and dissent
5. Formulating of long-term organizational goals / Smart goals
6. Detecting and using windows of opportunity
7. Accounting for the organisational fit of the topic
8. Balancing holistic versus specific perspectives
9. Balancing freedom versus impact
10. Managing expectations

1 Introduction

Fraunhofer Gesellschaft and TNO are the two largest applied research organisations in Europe. Together they employ more than 27,000 people and carry out research projects for clients in the public and private sector with a yearly budget of about 2.6 billion euros.

In the JERRI project, these two organisations have joined forces in order to advance responsible research and innovation (rri) within both organisations and thereby better align their research and innovation activities with societal needs. For this purpose we have set up a mutual learning process that includes also international organisations (D9.1) and is supported by a theoretical framework for understanding institutional change (Randles 2017, pp. 27–28).

The full JERRI process involves three major phases (i) the setting of ambitious rri goals (ii) the set-up of a long-term transformation plan and (iii) implementation of pilot activities towards these goals.

Both organisations are undergoing these phases in parallel for each of the five dimensions proposed within the RRI framework of the European Commission (European Commission 2014):

- Societal engagement
- Gender equality
- Open access
- Ethics
- Science education

At the current point in time both organisations have gone through the first stage of rri goal setting. In this report, we would like to share our experiences and lessons learned in this goal setting process to initiate an exchange with other actors and especially other applied research organisations wishing to engage in similar processes. In doing so, we are far from suggesting that other research organisations should adopt the same goals. In the contrary, one of our key findings of both the practical and theoretical investigation is that it is highly important to adapt the goal setting process and the rri goals themselves to the specific context of the organisation in open interaction with key stakeholders. This also fits with findings of the contingency theory, which emphasizes the importance of situational influences on the management of organizations and questioned the existence of a single, best way to manage or organize (Hickson,

McMillan 1981) and the insights of the neo-institutionalist framework presented in Deliverable 1.2 (Randles 2017). Still we feel that our experience of the process may well hold valuable lessons for other organisations and support them in adopting goals that are as ambitious as possible on the one hand but also realistic to be actually taken up throughout the organisation and followed up by concrete activities.

In the following chapters, we first present the individual experiences of TNO (Section 2) and Fraunhofer (Section 3) and draw lessons across RRI dimensions for each organisation. We then compare the experiences of both organisations (Section 4) and investigate the factors that influenced the goal setting process across the two organisations. We end up with a fist attempt of drawing more generalised conclusions on aspects organizations who engage into rri transition processes may want to take into account.

2 Goal development processes at TNO

2.1 Description of the process

The process of goal development at TNO consisted of a series of workshops, one for each RRI-dimension (mainly with TNO-internal stakeholders), of interviews for several RRI-dimensions (with external stakeholders), and of discussions with key influencers and decision-makers within TNO ('change agents'). In these discussions we integrated among others for example people from the Diversity Committee (for Gender Equality/Diversity); the Integrity Committee (for Ethics/Integrity) and the CSR Steering Committee (for Societal Engagement). There has been one exemption to this approach which shall be discussed later.

The approach drew loosely from Appreciative Inquiry (starting with 'what works well'), Stakeholder Support (aligning different views and interests) and Participatory Design (involving the people who will be affected). This approach delivered goals that are perceived as both realistic (and relevant for TNO) and ambitious (for a project).

Key elements in this goal development process of TNO were the following:

- The development of <u>goals that are aligned with existing structures and practices</u> in TNO, in order to have sustainable impact within the organization, i.e. to realize organizational change and institutionalization;

- The development of <u>goals that will boost current activities and initiatives</u> (e.g., improve, speed-up)—with a tension between realism (alignment with existing structures and practices) and ambition (boosting these);
- The involvement of (mainy internal) <u>stakeholders, to generate support</u> for the goals, and the involvement of (mainly external) <u>stakeholders to challenge</u> these goals and to receive feedback for further developing them.

The exception in our goal setting process has been the RRI dimension of Open Access. The preparations for this workshop showed a large similarity with the 'classical approach' of a workshop; preparing a briefing paper, inviting stakeholders, discussion about ambitions and goals and finally writing this in a report. The topic of Open Access has many different stakeholders (as was demonstrated in the briefing paper) and many different views and opinion exist inside and outside the organization. In discussion with the JERRI team, it became clear that a follow up had not been secured (i.e. there was uncertainty about the ability of the organisation to adopt the goals as organisational goals). It was feared that the legitimacy of the outcome of this workshop could be questioned and therefore advances made in this respect could be seen as a waste of effort. This led to a point that the project team decided first to organise internal support, mobilise internal stakeholders and create the necessary buy-in and legitimacy in order to make advances required. This has led to a process-approach which, after many bilateral conversations, gained the support from senior management and the executive board and the formal installation of an Open Access working group. External circumstances (new legislation, questions related to IP and Open Access) also helped to support this approach and created legitimacy, JERRI could piggyback on these circumstances and. A need was created to tackle the versatile challenges of Open Access in an RTO organisation.

The goal setting process delivered goals and associated activities that exceeded the available budget. It was necessary to evaluate and prioritize the goals (and abandon several); this process (which also included the modification of goals) was done during the discussions with key-influencers and decision-makers in TNO, using the following criteria:

- Each RRI dimensions should be supported fairly, and in line with its degree of institutionalization within the organization
- Limited attention needed from management (because of the restructuring of TNO);
- Limited effort needed from staff (not to overload staff departments);

- High chance of institutionalization (after the project) and re-usage of materials that will be produced (e.g., training materials);
- Positive external impact (in terms of positive impact on TNO's reputation).

The JERRI Advisory Board provided important feedback, e.g., to view the restructuring of TNO as an opportunity (things in motion provide an opportunity for change). We can already (from July 2017) see this happening, e.g., in the creation of (new) Strategy Advisory Boards (SARs) for the newly to be created 9 Units (to replace the current 5 Themes): the people involved in creating these new SARs are keen to involve the JERRI team in creating more diverse SARs, i.e. to include NGOs or civic society organizations—in line with the original idea of the SARs, which needed a 'boost' from JERRI to better materialize. Another example is the Open Access Working group; that is now established by the executive board in order to structure the discussions on Open Science and take into account all views and themes that are related.

The final deliverable D3.2 Goal for TNO was discussed with the project sponsor (twice) and discussed in the executive board of TNO. This means that full organisational support for these goals is organised and that the organization is waiting for the results to be delivered.

2.2   Reflection on the process

Overall, the process went well. People in the workshops participated actively and creatively. We had a nice mixture of higher-up people and workfloor-level people, e.g., in the workshop for Societal Engagement, which involved higher management, senior and medior scientists and consultants, and junior researchers (former trainees).

Involvement of internal and external stakeholders

A recurring pattern was the relatively high involvement of *internal* stakeholders, and the relatively low involvement of *external* stakeholders. This is probably due to the difficulty (and relatively low expected benefit) of involving external stakeholders in the *content* of goal setting. In other words, we focused on generating internal support. External stakeholders were interviewed beforehand (Science Education) or after the workshop (Ethics, Societal Engagement) in order to take their views into consideration. Their input was used for briefing the workshop or triangulation between ambitions and goals. We will, however, in the remainder of the project, aim to involve *external* stakeholders, during the *process* of realizing these goals, e.g. to discuss barriers and enablers, and

institutionalization (topics that will be addressed in D5.1 Discussion paper on organizational enablers and barriers and D5.2 Transformative RRI action plan).

Balance between consensus and dissent

We aimed to create a combination of (mainly) consensus and harmony (to generate goals and support for these goals) and (some) dissent and opposition (to critically discuss these goals and identify potential barriers). In the remainder of the project, we will increasingly look to involve (also) people who have different viewpoints.

Support for the goals and 'buy-in' from management

The process delivered a list of 13 goals (3 for Gender Equality; 3 for Ethics; 3 for Societal Engagement; 3 for Science Education; and 1 for Open Access, which exists of 3 sub-goals), which are in line with current structures and practices in TNO (institutionalization), and which are supported by internal stakeholders, including 'buy-in' from top management and involvement of relevant change agents (e.g., the Integrity Officer and CSR officer are both in the JERRI project team).

Organizational change

Overall, we see and present the goals and associated activities as part of a larger effor in organiational change (rather than as "project activities"). The goals also interact and support each other and moreover support mechanisms for institutionalizarion (such as training material).

Both specific and holistic

Many of the goals are specific to one RRI dimension, e.g., the Female Leadership training, the Database for Female Talent and the Implicit Bias Training (for Gender Equality/Diversity), the E-learning Module for Scientific Integrity (for Ethics/Integrity), or the Involvement of ('unusual') Stakeholders in Strategy Advisory Councils (for Societal Engagement). In addition, some goals provide opportunities for the combination of RRI dimensions, e.g., the development of a Game/Training, to improve ethical awareness and moral capabilities (under the dimension of Ethics/Integrity, but with contributions from Gender Equality/Diversity) and the development of two similar tools: a Tool to assess ethical and societal issues (for Ethics/Integrity) and a Tool to assess and plan societal impact (for Societal Engagement).

'SMART' goals

Furthermore, the goals are specific and Measurable (which will help to plan and execute activities to realize them), and Ambitious (boosting existing activities) and Realistic (in line with existing activities). Regarding planning, the activities needed to realize the goals are planned in 2017-2018, making the goals relatively short-term, but have a long term effect (because the use of for instance training materials employees will be better equipped and prepared). In sum, we aimed to develop 'SMART' goals.[1]

The goals needed to be 'SMART' formulated in order to provide enough contexts for decision makers and buy in from the organisation; this required a level of detail that surpassed the initial level of detail that was required for deliverable 3.2. On one hand, this forces goals to be very concrete and specific and will help TNO in the next phase of the project (transforming goals into specific actions) and helps to manage expectations. On the other hand this rather specific focus would sometimes hinder the discussion about the end-goal; where would we like to be in the future (larger picture). Keeping balance between these opposites was done in the workshop, and could have transpired better in the D3.2. However the focus of D3.2 was internally aimed at agreeing on specific goals and budgets; not about the (far) future of RRI in this organization.[2]

This focus on the relative short term was required when we needed to align the proposed goals with available budget. No budget allocation were made before the start of the goal setting; this would mean that any budget request could be considered, although each RRI dimension would need to be supported fairly and in line with the ambitions of the organisation (and it's maturity level). This balancing act of goals, activities and budgets was very helpful and helps to create buy in and expectations with many different internal stakeholders, but focuses on operational and short to medium term goals.

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[1] The abbreviation stands for: Specific (target a specific area for improvement), Measurable (quantify or at least suggest an indicator of progress), Assignable (specify who will do it), Realistic (state what results can realistically be achieved given available resources) and Time related (specify when the result(s) can be achieved).

[2] An even more complicating fact was that TNO has just finished its Strategic Plan (Flywheel for Innovation in the Netherlands, March 2017).

Organizational context (contingency)

The contingency of the restructuring of the organization (started in March 2016) was another factor that increases the complexity, but also allows for opportunities to engage in meaningful discussions. From the moment that the new organisational structure was presented it became clear that this would have an impact on the JERRI goal setting and activities. New opportunities were suddenly 'unlocked' and open for discussion; and our ideas to engage with change agents, newly appointed directors and give our advice towards required changes, were welcomed.

The timeline of the JERRI-project however, does not allow for a lot of flexibility in deliverables and has established a specific method and route, which is considered a risk to the project itself. We are already engaging in RRI change processes with a chance that the deliverable 3.2 is not accepted by the EC.

In the remainder of the project the internal communication, e.g., via Yammer, will probably be of increasing importance, in order to generate and maintain support during the execution of the activities needed to achieve the goals. E.g., to generate awareness and interest amongst (principal and senior) scientists to participate in the E-learning module about scientific integrity, or to generate awareness and interest amongst project managers to use the 'Ethical and Societal Impact Tool' and/or the 'Societal Impact Tool'.

3 Goal development processes at Fraunhofer

3.1 Description of the process

3.1.1 Overall process

|					
Goal development concept (Deliverable 2.1)	Identification and selection of stakeholders as workshop participants	Five goal development workshops related to five RRI key dimensions	Gathering feedback from the Advisory Board	Final decisions on the pilot activities to engage in	Documentation of process and results (Deliverable 2.2)
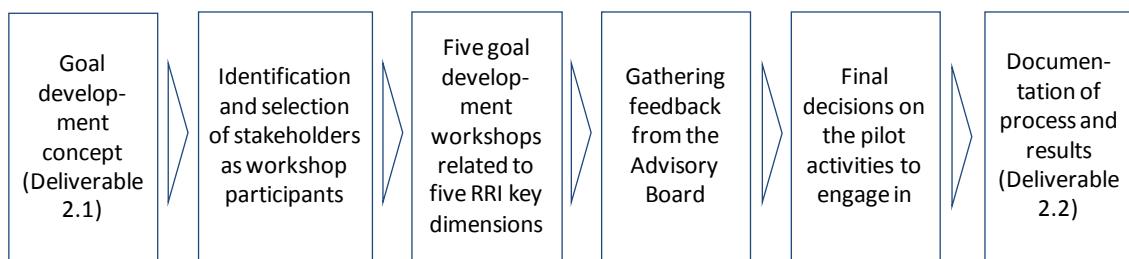
Figure 1: Steps of the goal development process

In general, the goal development followed the sequence of steps outlined in Figure 1. As a first step, the JERRI team developed a general approach for the goal development (cf. Deliverable 2.1.). This concept was based on the insights on "deep institutionalisation" presented in Deliverable 1.1. In the "goal development concept" it was specified, that at the core of each process a workshop with internal and external stakeholders would be held. The aim of this workshop was to develop a long-term vision, derive associated long-term goals and specify pilot activities for achieving these goals. Accordingly, for each dimension, the JERRI team identified key stakeholders and selected the ones to be invited to the workshop. For each dimension, the goals setting workshop was carried out as foreseen albeit with slightly different settings adapted to the specificities of the dimension. After gathering the feedback of the Advisory Board on the workshop outcomes (informal visions, long-term goals, ideas for pilot activities), the JERRI team decided on the pilot activities to be carried out (c.f. Deliverable 2.2). In the following two sections we will explain in more depth the stakeholder selection and workshop processes as the other steps are outlined in detail within Deliverable 2.2.

3.1.2 Stakeholder identification, selection and recruitment

As set out in Deliverable D2.1, the stakeholder identification relied on individual and group brainstorming of the Fraunhofer ISI project staff and the Fraunhofer partners responsible for the respective dimension. Thereby we generated a list of concrete persons representing different stakeholder groups (e. g. 'institute directors', 'authors', 'universities', 'CSOs', etc.) internal and external to Fraunhofer that were involved in

and/or affected by Fraunhofer's practices in each of the five RRI-related topics. Out of this list, a further selection of stakeholder groups and individual stakeholders to be invited to each workshop was made[3]. Table 1 gives an overview on in invited persons and actual participants. In all five workshops, internal stakeholders i.e. Fraunhofer staff from both the Fraunhofer Headquarters and several institutes as well as from different functions and levels of hierarchy participated (cf. Table 1). Except for the case of ethics where it was decided to derive involve external perspectives through interviews we involved external stakeholders in all workshops.

Table 1: Stakeholder groups invited for the Goal Setting Workshops

RRI Dimension	Invited Stakeholder Groups	
	Internal	External

Ethics	− **Researchers**[4]
	− **Project leaders**
	− **Ethics Experts**
	− **Staff representatives**
	− **Communication**
	− **Compliance Office**
	− Human resources
	− Internal Programme manager
	− Executive Board
	− Heads of Institutes
		− Clients
		− Funders
		− Cooperating partners
		− Civil Society
		− NGOs
		    o Environmental groups
		    o Animal rights groups

Gender	− **Gender equality officers (central and institute level)** − **Diversity-Officer** − Center for RRI (CERRI) at Fraunhofer IAO − Staff Marketing	− Companies − **Gender DAX Members** − **Signatories of diversity charta** − **Other RTOs** − **Universities** − Intermediaries e. g. Steinbeis Center − Federal Professional Training

3 On the stakeholder types and selection criteria cf. Deliverables D2.1, p. 8.

4 Bold=Actually Participated

	− **Human Resource Development** − **Human Resources** − **TALENTA-participants** − **Fraunhofer Academy**	Agency − Federal Ministry for Education and Research (BMBF) − German Research Association DFG − **Associations active in the gender field (e.g. Femtec)**
Open Access	− **Authors (including non OA friendly)** − Headquarter: − Business models − Science Policy − **Corporate Strategy** − **Information Management** − **Library Manager** − **IT Manager** − **Institutes spearheading the field of Open Data**	− **National Funders** − Business Clients − Business Users − Civil Society (free access to publications) − **Students** − Schools − Teaching Schools − **EARTO RTOs** − (Further) Non-University Research Organizations − Universities/Higher Education − Emerging Countries (Free Access to data and publications)

Societal Engagement	− **Researchers**
	− **Fraunhofer Groups ("Verbünde")**
	− Business Model Development
		− **Policy maker (local)Politik (lokal)**
		− CitizenScience / FabLabs
		− **Chambers of Commerce**
		− Companies
		− Foundations
		− **Science**
		− **Education**
		− Civil Society Groups
		    o Churches
		    o **Environment**
		    o Consumer
		    o others

		– Culture – Media
Science Education	– **Staff marketing (central and institute level)** – Young Researchers – Head of Institutes – **Headquarter Strategy** – Staff with leadership functions – **Science Communication** – Project Leader – Science Marketing – **Internal Training** – Internal Programmes – University Marketing – Other relevant event managers	– **NGOs in the field of Science Education** – **Citizen Science Intermediaries** – NGOs Young Scientists – **Students** – Education&Research Ministry (BMBF) – Other clients – Ministries at the state level

Overall, the recruitment of participants for the workshop was fairly challenging. Especially external stakeholders and high-ranking stakeholders were difficult to mobilise for the full day workshop. For most workshops, we could ensure a good gender balance, except for the workshop on the gender dimension, which mainly female participants attended (cf. Table 3).

Table 2: Number of participants and share of external stakeholders in the five Fraunhofer goal development workshops

Workshop on…	Number of participants	Thereof external stakeholders
…Ethics	14	none[5]
…Science Education	8	1

…Open Access	14	2
…Societal Engagement	13	4
…Gender	15	4

Table 3: Number of participants specified in female and male participants in the five Fraunhofer goal development workshops

Workshop on...	Number of female participants	Number of male participants
…Ethics	5	9
…Science Education	4	4
…Open Access	6	8
…Societal Engagement	7	6
…Gender	12	3

3.1.3 Goal setting workshops

The workshops were moderated by Fraunhofer ISI and took place at different locations where Fraunhofer partners responsible for the implementation of the pilot activities are located. Each workshop lasted one full day and was held in German. It was possible to apply all three methodological elements as set out in the goal development concept for all five workshops:

1) the visioning method to set out the highest long-term aspirations of the stakeholders as regards to the directions into which Fraunhofer should develop in the respective RRI dimension.

2) the deduction of long-term organisational goals to concretise the visions as informal propositions/orientations to act for Fraunhofer as a whole (in group work)

3) the deduction of short-term goals in the form of ideas for pilot activities within JERRI (in the plenary)

The following special adaptations were made:

In the field of **Open Access**, a Fraunhofer-wide survey on research data management was carried out by Fraunhofer IRB in addition, so that the deduction/selection of pilot activities partly relied on this survey's results as well.

In the field of **Science Education**, another approach was chosen: As the field of Science Education is still framed very weakly at Fraunhofer, steps 2 and 3 were replaced in this workshop by a collection of topics for a deeper learning and mutual exchange in the further course of JERRI. This exchange was considered necessary to acquire the relevant knowledge to develop the field for Fraunhofer and to engage in systematic activities going beyond the status quo in the future. We will now give a general outline of the visioning approach which was formed the basis for all five workshops.

The overall goal of the JERRI project is to push forward a transition process towards a deep institutionalisation of responsible research and innovation (Randles 2017, p. 7 pp.). The visioning method supports this aim by creating a shared image of a group's preferred future, which is deeply connected with the individuals' values. For an organisation such a vision can functions as an inspirational force that is pulling the present forward to the preferred future by motivating and aligning efforts of the group and its individuals (cf. Box 1).

Individual
- raise aspirations, unlock the door to personal achievement, make people surpass "limits"
- guide daily decision making
- day to day activity becomes more meaningful
- More freedom to act independently and creatively under the clear sense of direction

Group
- Create a group spirit where people acknowledge and appreciate each others contribution in moving towards the vision
- link individual and group achievement
- enabling self-organisation
- Basis for strategy building

Box 1: Functions of a vision within an organisation (adapted from (Schultz et al. 1993))

The process of all five workshops was almost identical, apart from the already mentioned deviation at the workshop for 'Science Education'.

All workshops started at 9 am and ended at 5 pm (for exact time plan see Agenda in Annex). To prepare the ground for a high quality interaction the workshops started with an introductory round, in which participants introduced themselves and explained their relationship with the topic. At three of the workshops, the introductory round was accompanied by a short exercise, in which the participants were asked to place themselves around a point in the room and the distance to that point should be seen as a rating how near/far the topic is for them in their daily businesses. After this icebreaker session, the workshop moderator or project leader shortly briefed the participants about the Project JERRI, its main topics and goals and gave an overview about the state of the art of Fraunhofer within the respective RRI dimension. In addition, the purpose and agenda of the day as well as the Visioning method were introduced.

The next three sessions of the workshops were dedicated to the stepwise synthesis of the shared vision. It started with an individual reflection of each participant about her or his ideal, preferred embodiment of the specific RRI dimension within Fraunhofer. So e.g. the question would be: Fraunhofer 2030 - all ethics aspects are perfectly embedded, how does it look like? Describe your vision!

In a next step, participants were invited to share their personal vision in pairs of two and collect shared aspects. The time spent for these first two steps was about 30 minutes each. After that, two or three groups each with 5 to 8 participants were formed. These groups worked largely on their own but the workshop facilitators supported them if required. They were asked to present to each other the results of the bilateral exchange and again identify aspects agreeable to all group members. All steps were supported by templates that became gradually larger in size. Aspects on which the groups were not able to reach an agreement were noted down on a separate board throughout the process. Before or after lunchtime the groups presented their visions to the other participants. This gave everybody the opportunity to discuss the results and request unclear points but also to find common and overlapping points in relation to the other group vision. The final task was to develop a Vision, which shared by all participants. This was achieved in a facilitated plenary session, where shared elements of a preferred future were elicited across all group visions.

The next step was to identify long-term goals that will enable Fraunhofer to realise the vision. As explained in Deliverable 2.1, in this step we applied the 10 action fields for RRI from the Responsibility Navigator developed by the Res-Agora project (Kuhlmann et al. 2016; Bryndum et al. 2016). [5] Small groups were formed to work 2-3 of the "action fields". As stated in D2.1 the goal development process involves the following steps and guiding questions:

- Exploration: What are the challenges, conflicts and barriers that may arise if Fraunhofer moves towards the previously formulated vision?
- Present/Investigate: Which principles and dimensions (of the Responsibility Navigator) are considered to be relevant in order to tackle these issues, and in which way?
- Concretise: How can these solutions are formulated in terms of long-term (up to 2025/2030) goals? Which short-term goals can be derived for the pilot activities?

After about one hour, the small groups presented their results to the plenary. The last task of the workshop was to brainstorm possible ideas for pilot activities to be implemented within JERRI to move towards the long-term goals and vision. In a final plenary session, participants were invited to suggest concrete activities, measures,

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[5] These 10 action fields are: Inclusion, Deliberation, Moderation, Modularity and Flexibility, Adaptability, Institutional entrepreneurship, Subsidiarity, Culture of transparency, tolerance and rule of law, Capabilities and Capacities.

continuation of already existing programmes etc., which were then collected at a blackboard by the workshop moderators.

Every workshop closed with a short summary of the workshop results and an outlook on the further proceeding of the results within the JERRI project by the workshop moderator. Finally, the participants got the chance to give feedback to the workshop organisation and process, both orally in the plenary and in written form on the feedback sheets prepared by the IHS Monitoring Team.

3.1.4 Overview Outcomes

Each goal development process at Fraunhofer generated three types of outcomes: a shared informal long-term vision, a collection of long-term organizational goals of different types and short-term goals in the form of pilot activities within JERRI. In contrast to TNO, the outcomes from the Fraunhofer workshops do not have the status of official goals for the whole organisation but serve as a shared orientation for those Fraunhofer actors who were commissioned by the headquarters to drive forward this rri dimension.

Table 1 and Table 2 provide an overview on the number of outcomes from the individual workshops. The content of these visions, goals and pilots was documented in detail in Deliverable 2.2. The following considerations come to mind when comparing the nature of these outcomes across the five workshops;

Two common patterns can be observed across all developed **visions.**

Firstly, most of them emphasize the outstanding role of Fraunhofer as largest European organization for applied research and this fact often was stated as the reason or even motivation for Fraunhofer to dedicate themselves more to responsible values and societal needs. For example, the vision of ethics states, that in the future Fraunhofer has taken up a "leading role in ethical discourse of the applied sciences", that ethic contributes to the creation of identity and also that "Fraunhofer is the first contact for consulting needs regarding ethical issues in Fraunhofer-dominated strategic fields". Similar references to the leading role of Fraunhofer can be observed in the visions of science education and gender. It seems that actors mobilise patterns that resonate with the core aspirations of the organisations and extend them to rri - a strategy that is well in line with the theoretical framework of Deliverable 1.2. that suggested that imposing alien rri notions risks alienation and "responsibility washing". It

can thus be reckoned that the visioning methodology successfully enabled such an organic infusion of rri.

The second common pattern is that many of the visions do not only focus on values and preferred future states of Fraunhofer, but even describe in a more technical way measures how to achieve this future state (especially the vision for 'Open Access'). Although this is not the task of a vision but rather the task of a roadmap we think three things can be derived from this observation. First of all, it underlines participants' desire for concrete measures and action plans and the difficulty of the task of dissolving from the status quo and adopting a more imaginative mindset. Another explanation for these rather specific and practical elements in the visions is that this could be due to the organisational culture of Fraunhofer as an applied technology oriented organisation where many colleagues are trained to solve problems in a pragmatic applied manner. A third reason for that lies probably in the heterogeneous nature of the several RRI key dimensions. While topics like ethics or gender require mainly organisational changes the 'Open Access' topic and to a lesser extent "societal engagement" involve also technical challenges.

It should be emphasised however that these different levels and types of ambition do not imply a difference in relevance for the rri transition process. Especially for topics like Open Access that are already very much established at Fraunhofer with shared long- term goals, specifying concrete ambitious but implementable goals is highly important. In a similar way, different levels of ambition can be connected to the degree of institutionalization of the topic in the organisation, other organizational conditions and nature of the topics. In other words: Also a less ambitious vision can be of high relevance for the organization and the planned transition process because it may put new topics for the organization on the agenda for the first time.

The other two types of workshop outcomes are the collection of **long-term organizational goals and short-term goals in the form of pilot activities** within JERRI. Table 4 shows the suggested field of action for each RRI key dimension according to the different types of actions suggested in the Res-AGorA Responsibility Navigator (Kuhlmann et al. 2016).

It is striking that from all the possible types of actions, participants particularly highlighted the importance of organisational resources and (infra)-structures for the fulfilment of the formulated visions. Across all workshops, questions around the 'right' levels to act within the organisation were frequently discussed referring to the principles

of subsidiarity, modularity and flexibility but only in the case of ethics goals of this type were specified. Further governance principles that came to the fore quite frequently when discussing organisational transformations, were the necessity of outstanding individuals as role models for driving cultural change a result that confirms the theory based assumption of the critical role of institutional entrepreneurs (Randles 2017).

Table 5 presents the number of suggested and the selected pilot activities. One common feature of many pilot activities is their direct embedding in research projects as the main type of action carried out in the organisation. Across several topics, especially the set-up of use or business cases, role models and the demonstration of good/best practices are considered as a promising type of pilot activity.

In line with existing concepts referring to the institutionalisation of rri in organisations (cf. Randles 2017), these commonalities point to some of the more basic terms and directions to engage in the further institutionalisation of rri at Fraunhofer, e. g. in the development of transformative action plans.

Table 4: Numbers of produced long-term organisational goals sorted by the different key dimensions

RRI Dimension	Individual Capabilities	Modularity, flexibility and subsidiarity	Internal entrepreneurs and moderators	Resources	Culture	Resources & management	Communication	Deliberation & transparency
…Ethics	2	4	2	-	-	-	-	-
…Open Access	-	-	-	5	5	-	-	-
…Societal Engagement	-	-	-	-	-	7	8	-
…Gender	-	-	3	3	-	-	-	2

Table 5: Number of suggested/selected pilots for each key dimension

Pilots for …	Number of suggested pilots	Number of selected pilots	Comment
…Ethics	6	3	

…Open Access	13	4	
…Societal Engagement	11	4	Goals sharpened on recommendation of Advisory Board
…Gender	10	3	Additional goal on gender in content taken on board on suggestion of Advisory board

3.2　Reflection on the process

When reflecting on the outcomes and processes of all five workshops several aspects emerged, that seem to impact on the process dynamics and nature of the outcomes:

1. The balance of external and internal stakeholders participating in the workshops
2. The difference and balance of knowledge/expertise of the stakeholders related to the specific workshop topic
3. The degree of institutionalisation of the topic in the organisation
4. The consistency of the topic itself
5. The presence of "Windows of opportunity"
6. The range of different hierarchical positions of the participants

We will now briefly discuss each of these aspects

1. The balance of external and internal stakeholders participating in the workshops

From the perspective of the workshop facilitators there were both pitfalls and advantages of working with external stakeholders. On the one hand, these actors often lacked knowledge about the organisation so they tended to raise aspects that led away from a focused Fraunhofer specific goal setting. Also, some internal stakeholders may have been hindered in voicing concerns e.g. organisational barriers by their presence. At the same time, the outsiders were much less prone to falling into organisational routines. In one case, an external stakeholder reminded the group of the think visionary and put aside barriers for the time being when developing the vision and thereby brought the process back on course.

2. The difference and balance of knowledge/expertise of the stakeholders related to the specific workshop topic

The majority of participants in our workshops had a high degree of expertise in the topic under discussion even though this was not one of the main recruitment criteria. Nevertheless, the share of experts varied across the five workshops. A comparison between the visions developed by different groups and the common vision developed by all workshop participants led to the observation that lower shares of experts eased the process of finding a common vision, whereas higher shares of experts related to fewer shared views and goals. This fits also with the theoretical findings of the neo-institutional approach, particularly the findings of Lynne G. Zucker (Zucker 1977).

3. The degree of institutionalisation of the topic in the organisation

The development of a common vision tended to be characterised by a higher convergence for a medium level of institutionalisation where stakeholders had a basic previous understanding of the topic but no strong definitions and rules in everyday processes, structures and routines existed. In RRI-related fields that were framed in the organisation relatively weakly (e.g. science education) and therefore concepts differed widely participants views were less converging. In situations with a very high degree of institutionalisation with clearly existing organisational structures (e.g. gender) the negotiation process was also more challenging. This observation seems well in line with neo-institutional theory stating that institutional innovations need to be carefully fit into the organisational context. (Randles 2017)

4. The homogeneity of the topic itself

In two cases, namely "gender" and "societal engagement", the concepts themselves involved aspects that are relevant for very different parts of an organisation such as Fraunhofer. In the case of the gender dimension e.g. the objective of gender equality is very much located within the "Human Resources" department which has well established routines to promote it. At the same time, the other highly relevant aspect of the gender dimension i.e. "gender in research content" is much less institutionalised within Fraunhofer. For initiating a transition process in this aspect, completely different organisational units (e.g. research strategy) would need to be addressed. Similarly, in the case of societal engagement the aspect of "research with citizens" could well be tackled on the institute level addressed by JERRI. Aspects like involvement of societal stakeholders in research priority setting would need to be located at the central headquarter level. In both these cases, the Advisory Board pointed to the missing aspects when assessing our goals.

5. Windows of opportunity

It emerged clearly that in cases where there is an emerging activity with support from headquarters, the goal setting process is bound to achieve the biggest leap forward. This was the case for open access (FORDATIS) and ethics (screening of internal programmes) and partly gender (Gender Toolbox). This does not mean however that the other configurations were less valuable in terms of rri transition. On the contrary, it could well be argued, that cases like science education and societal engagement where activities are shattered and decentralised, benefit even more from the boost they

achieve through such a process as they initiate a new transition pathway within the organisation.

6. The range of different hierarchical positions within the workshop

The experiences with involving different hierarchical positions for participating at a workshop were ambivalent. Of course on the one hand especially stakeholders from a high level can be seen as 'change agents' with a high influence in the organisation. One the other hand strong hierarchical differences could also hinder an open discussion with consideration of new topics or even novel transition trajectories. This fits also with the observation of the monitoring team of IHS, which stated that some participants did not feel free to voice their whole opinions and concerns.

4 Comparison and lessons learned

From comparing the experiences at TNO and Fraunhofer we derived the following list of issues to be carefully considered by other actors wishing to engage into similar processes.

1. The degree of institutionalization

One observation that was made by both TNO and Fraunhofer was that the nature of the process and the outcomes were shaped by the degree of institutionalization. As the RRI construction combines a variety of topics it is not surprising that not all RRI key dimensions have equal levels of institutionalization. For TNO especially the topic of 'Open Access' and for Fraunhofer and TNO especially the topic of 'Science Education' are in an early stage and have relatively low levels of institutionalization. This results also in different reaction and the way of understanding by the participants. For example at the workshop on 'Science Education' at Fraunhofer it was observed that a large variety in understanding of the topic makes it more difficult to come to a common shared concerted vision. On the other end of the continuum referring to the level of institutionalized it can also be observed that for a well-established topic, for example the gender topic at Fraunhofer, which is highly embedded in the organizational structure at Fraunhofer headquarters, it can be also difficult to introduce new perspectives. One main reason for this phenomenon might be that in case of high-level institutionalization the persistence and also power interests related to established structures are very strong for an easy or fast impulse of changing or developing one topic further. However, a more difficult goal development processes for dimensions with a relatively low or relatively high level of institutionalization, does not mean that the outcomes of stakeholder workshops for these dimensions would be of lower quality than for other dimensions. Rather, the knowledge out of this experience has to be that one has to be prepared and consider the level of institutionalization before starting a goal development process. The lesson learned would be to consider the level of institutionalization and to adapt the approach to be used in the goal development process. This fits with the hypotheses of institutional theory which points to the need to take into account maturity in deep institutionalisation processes (Randles 2017, P. 29)

2. Involvement of external stakeholders

It is clear that for a long-term change of an organization towards RRI the consideration of societal needs and values and therefore the involvement of external participants in

the organizational change process is critical. Especially the integration of voices from societal actors that are not so much established as stakeholders in RTOs, such as NGOs or civil society organizations, is at the very heart of RRI (European Commission). So it is clear that a stronger consideration of societal needs and values at RTOs and an increased exchange between RTOs and societal actors is one key result of RRI, and of the JERRI project, but it is not equally obvious in which moment and to which extent external stakeholders have to be invited into the organizational change process. One key argument for a very early involvement of external stakeholders is that external participation makes it much more likely that the organisation is pushed out of their daily routines and their comfort zone. Also, it helps to challenge group think and blind spots. A real change of internal structure and institutionalization of RRI is in this way much more possible and probable. On the other hand, it is important for RRI pioneers within the organisation ("institutional entrepreneurs") to have a protected space where concerns can be freely voiced. Also, internal stakeholders on their own tend to develop more targeted measures suited to make a difference in the organisational routines which are little known to external stakeholders. For example, at the Fraunhofer workshop on 'Societal Engagement' the group encountered difficulties in balancing external stakeholders' interests with organisational constraints of Fraunhofer. As a lesson learned, it can be concluded that integrating external stakeholders into rri goal development processes requires a careful consideration of several aspects and tailoring of the workshop approach. But of course the question cannot be whether or whether not one should include external stakeholders, but rather at which moment, to what content and in which context of the goal development process.

3. Involving change agents

Regarding the involvement of (internal) 'change agents', such as decision makers in higher management or influencers in staff departments, both organizations had important and different experiences. Especially the goal development processes at TNO showed that the involvement of change agents, especially those located higher-up in the organisation enables management buy-in and substantially increases the potential impact. This high impact of change agents during the TNO goal development process is probably also supported by the high-centralization of the organization. At the same time both organizations made the experience that is very difficult to mobilise high-level internal stakeholders for the format of full-day workshop. This raises the

question how the process can be more adapted to the requirements of these internal stakeholders in order to get the impact for project.

On the other hand, some stakeholder workshops Fraunhofer showed also potential disadvantages of including high-level internal stakeholders. We experienced that goals will most likely be bolder when like-minded pioneering actors on a lower level act together (e.g., 'Societal engagement' at Fraunhofer) while strong hierarchical differences among participants may inhibit the free voicing of ideas in particular in situations of highly established organisational routines.

Finally, we experienced that the interaction with the overall organisation is very much influenced by the positioning of the project team in the organisation. At TNO, which is relatively small and centralized, the JERRI project is coordinated by the CSR officer, with the CEO as commissioner, and with, e.g., the Integrity Officer in the project team. This stands in contrast with the way in which JERRI is coordinated in FhG, a relatively large and de-centralized organization, i.e. as a project done by one department in one of 67 institutes physically „away" from HQ. Both situations proved to come with both advantages and restraints attached.

4. Consensus vs. dissent / Attitude respectively the overall opinion of the stakeholders towards RRI topics

The attitude of the participants towards future changes of the organization emerged as highly relevant in such processes. Both organizations experienced that not only the right mixture of high- and low-level participants is important for an ambitious and successful goal setting process but also a good balance of critical and more positively inclined participants towards the topic is key. On the one hand inviting too many like-minded stakeholders will not help to push the actual boundaries forward because then it is more unlikely to create an open, critical atmosphere and ask from stakeholder to rethink their position and be open to debate. Chances are that a narrow discussion (discussion what we know / are aware of) or even 'group think' could occur. Giving more critically inclined stakeholders also a chance to contribute has often been productive for constructive workshop dialogues. The reason seems to be that dissenting voices are more likely to question the obvious and give an external input (strange eyes often provide fresh perspectives). The crucial task also here is to find the right balance of both attitudes, because also to have too many dissenting voices or opinions will not lead to a constructive dialogue about ambitions and goals. Possible methods to succeed regarding this point will be further outlined in chapter 5. (The

methods used during the workshop and invited stakeholders created an atmosphere that was both open and constructive. In some cases (e.g., the 'Societal Engagement workshop in TNO) time was spent to create this open atmosphere by doing small physical exercises with the workshop participants.)

5. Formulation of long-term organizational goals / 'SMART' goals

Another key point for the overall success of the JERRI project respectively a sustainable deep institutionalization of RRI is to gain a wider interested audience and broader effectiveness within the organization and maybe to gain synergy effects. Therefore it is important to re-translate and to ground far reaching visions into concrete long-term goals. Besides that the participants often ask for a further concretisation and specification of goals and measures. While at the workshops of Fraunhofer elements from the Res-Agora Co-construction method were used in order to formulate long-term organizational goals, the workshops of TNO used the SMART goals concept. Both approaches help to generate more concrete goals and fix/freeze the ambition level and surround it with relevant boundary conditions. Further recommendation how to realize/create SMART goals respectively long-term organization goals/the Res-Agora Co-construction will be find in chapter 5.

6. Institutional change through seizing windows of opportunity

Another experience made by both organizations regarding the point of gaining an effective process and change of structural setting was to be aware of re-structural processes or activities or initiatives that are already taking place within the organization. These 'windows of opportunity' are relevant for RRI transition processes and should be taken into account during the planning and execution of such goal development processes. At TNO an organisational change gave raise to revision of goals (e.g., regarding Gender and diversity) which provided an inroad for some of the JERRI goals. At Fraunhofer in two cases ('Open Access' and 'Ethics') existing strategies where at a point where a small push could make a big difference. This does not mean however that the other configurations are less valuable. On the contrary, one may well argue that cases like Science Education and Societal Engagement, in which activities are fragmented and decentralised benefit even more from the boost they achieve through such a process as they initiate a first awareness of the topic or even a new transition pathway within the organisation.

7. Consistency of the topic

One problem both organizations faced during the goal development process was the heterogeneity of some of the RRI key dimension. This problem occurred, for example, in the case of the gender dimension, which entailed on the element of gender equality on the one hand, and the element of 'gender in research content' on the other hand. The problem occurred because in organizational terms these two aspects are associated with different areas of responsibility or organisational units. Possible ways of handling this problem are outlined in the following chapter.

8. Balancing holistic versus specific perspectives

Another very important experience that has to be reflected is the difficulty to find a balanced approach regarding the implementation of the RRI-concept. Although the concept of RRI has to be seen as a holistic concept, every approach of implementation have to be aware of the basic fact that RTOs like every modern organization is collaboratively organized which really means that the different key dimensions are handled by different organizational units. On the one hand, each aspect requires specific actions on the other they all interact and depend on the basic commitment of the organisation towards rri. It is important to find the right balance between specificity and generality here.

9. Balancing freedom versus impact

Besides the tension between holistic and specific perspectives on the RRI transition process, TNO and Fraunhofer also experienced tensions between different demands at different levels of the goal development process. While during the phase of finding a common shared vision of the future the demand was to be free of habitual ways of thinking and organizational processes, the deduction of long-term organisational goals requires a more pragmatic way of thinking. For example too high ambitions will not be achieved and have no meaningful impact on the organisation and therefore fail in the implementation process. The other way around too low ambitious goals will not bring the organisation forward. Because of this point TNO and Fraunhofer have both opted for different routes also because of the different organisational model (centralized vs. decentralized). The approach of TNO was more focussed on institutionalization and organisational change. The approach of Fraunhofer was to start ambitious pilot activities at the level of institutes with the ability to copy successful actions to other institutes.

10. Managing expectations

Through the involvement of stakeholders in workshops and other forms of interactions, more and more people have become aware of the JERRI project. Besides the increasing awareness, also the enthusiasm gained in the goal setting processes has resulted in high expectations of this involvement. Individuals are eagerly awaiting to make their contribution and help with more ideas and suggestions. Contrary to this quite egalitarian or bottom-up approach, organizations like TNO and Fraunhofer also have a formal approval process in order to legitimize and finalize these goals (done by senior managers, the project sponsor, executive board etc.). This helps to establish the project, but also makes it vulnerable; the project team needs to live up to its expectation and continuously manage the interaction between the project, the formal timelines and the stakeholders involved. To manage this task good and well defined communication lines are required. At TNO internal social and communicating platforms like Yammer has shown to very helpful to update people on where JERRI stands as a project and what people can legitimate expect.

From the approaches used both by TNO and in Fraunhofer we could see that there is no 'one single way' to deal with the goal setting process. It points us to situational influences that highly determine successful approaches and case by case examples of tools and methods that work or don't work (as could be expected based on the contingency approach[6]). The approach with a single way of working as presented as 'project methodology' in the proposal phase of the JERRI project ("Description of Work") is confronted by the reality of trying to achieve organisational change, institutionalization and a deep RRI transition. It emphasized the importance of situational influences on the management of organizations and questioned the existence of a single, best way to manage or organize

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[6] Contingency approach emphasizes the importance of situational influences on the management of organizations and questioned the existence of a single, best way to manage or organize (for more information see a.o. Hickson, D.J., & McMillan, C.J. (eds.) (1981). Organization and Nation. The Aston Programme IV. Westmead – Farnborough).

5 Recommendations for future RRI goal development processes

In the previous chapter, we discussed several experiences by comparing the two goal development processes at Fraunhofer and TNO. On the basis of these experiences, we now try to deduct some conditional recommendations for organisation wishing to engage in similar endeavours. Following the list of ten crucial experiences, the current chapter therefore outlines ten conditional recommendations for future RRI goal development processes.

Concerning the first mentioned experience – the different degree of institutionalization – a recommendation for the future is to **carefully adapt the concept of the goal setting dialogue process to the degree of institutionalization of the specific RRI key dimension in the organisation**. So e.g. in case of a topic with a rather low degree of institutionalisation the ambitious visioning approach may not be suitable because first of all there is a need to raise basic awareness and to develop a joint understanding of the topic.

The second experience raises the question how to involve external stakeholders within such goal development processes. One solution to this question of how to benefit the most from the participation of external stakeholders would also to adapt the methodology more to the different requirements of the topics. One solution to the dilemma outlined above would be would be to **design processes with specific separate sessions for internal and external stakeholders, and also spaces for joint deliberations.**

Our third experience relates to ways to involve change agents, e.g., higher management. Of course one basic recommendation is to get connected to this person in order to benefit from their resources and to make the goals more effective regarding the deep institutionalization of RRI. Therefore, a further recommendation could be to deeply consider strategies and incentives, which will make these goal development processes more attractive to these people. One first initial approach could be better adjust the form of the (one day) workshops to time limitations of these persons. On the other hand, also the ambivalent aspects of involving high-ranking staff need to be taken into account. One approach to limit the influence of power gaps could be to **include anonymous elements into the deliberation process such as e.g. tele-voting and to interact with high ranking participants in advance to the process**.

These questions concerning the overall attitude of the stakeholders lead us to the next experience. How to ensure the right balance between critically inclined and like-minded stakeholders and to provide input from both positions? How to create a workshop atmosphere that is both open and constructive? One possible approach is to explicitly create space for critical voices and dissent. Practically this can be done by **providing not only tables for results of consent but also for dissent**[7]. E.g. in the Fraunhofer visioning workshops the focus was on achieving consensus but a special board was reserved to place aspects where no agreement could be reached. Also, in some cases at TNO (e.g. societal engagement) time was spent to **create this an open and comfortable atmosphere by doing small physical exercises with the workshop participants**.

Another crucial consideration is about how to ensure a wider and sustainable impact of these goal development processes within the organizations. While at the workshops of Fraunhofer elements form the Res-Agora Construction method were used, the workshops of TNO used the SMART goals concept in order to formulate long-term organizational goals. One recommendation to realize such an approach is to keep the difficulties in mind, as it involves trade-offs and a level of specificity that is detailed. Nevertheless, this phase of each **goal development** processes was often received well by the participants as they **demanded more concrete goals and action plans for the transition processes**.

Another recommendation for more organisational impact is to carefully map ongoing restructuring processes inside the organisation, existing strategies for organizational change or organizational units, which already engage in such respective dimensions (or external agenda's) and bring them in a constructive connection to the goals of the transition process. So the basic advice would be to use such 'windows of opportunity' and benefit from possible synergy effects. One problem that may arise, and that both Fraunhofer and TNO encountered, is the 'not invented here syndrome'. According to this both Fraunhofer and TNO experienced some difficulties to mobilise stakeholders within the organization that were already engaged in the respective dimensions but refused to collaborate because they felt threatened by the process. So one further advice in order to avoid this 'not invented here syndrome' is that **such stakeholders need to be identified and involved in the process as early as possible**.

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[7] e.g. method of the six thinking hats http://www.debonogroup.com/six_thinking_hats.php, Walt Disney method https://idea-sandbox.com/blog/disney-brainstorming-method-dreamer-realist-and-spoiler/

Another lesson learned was the high relevance of the organizational conditions in which the RRI goals will be developed and institutionalized. It was highlighted that problems can arise when tackling topics that are associated with different areas of responsibility or organisational units. In such cases, it could be **a solution to separate the aspects and tackle them with different stakeholder configurations**.

This experience leads us to the next issue: the tension between a holistic and a specific perspective/ approach towards the RRI concept. These tensions have to be balanced in a way that will support and benefit from the connection between the five key dimensions, but also take into account that such a **transition process will not be made through a centralized effort** – particularly at such a decentralized organization like Fraunhofer – **but rather by the collaboration of different organizational units and stakeholders**.

A further tension which Fraunhofer and TNO have faced, was finding the right balance between the ambition of setting long-term goals which go beyond the status quo and contrary to that a more pragmatic approach which keeps also the in mind to achieve actually an impact within the organization. This tension plays out differently in **different structural settings (centralized vs. decentralized) of the organization** and thereby require different solutions for each context. In a highly decentralised organisation like Fraunhofer it can be softened by addressing the goals on different levels of the organisation. So e.g. an ambitious long term goal can first be developed at the level of one pioneering institute while more pragmatic steps are implemented on central level.

The last recommendation relates to the management of expectations. Also here, the challenge is to balance the tension between high expectations and the reality of organisational restraints. For this purpose, we emphasise the vital role of a **well-defined communication strategy with tailored channels across the organisation.** As an example TNO made successfully **used an internal social and communication platform (Yammer)**. This programme has shown to very helpful to update people on where JERRI stands as a project and what people can legitimately expect. At Fraunhofer the internal Fraunhofer magazine (called 'Quersumme') was used to communicate the project throughout the organisation.

6 Conclusion

In this report, we compared the experiences of TNO and Fraunhofer from engaging into a transition process towards deep embedding of responsible research and innovation practices into the organisation. We were able to derive a tentative list of ten issues to be taken into account when engaging into such a process:

1. Adapting the process to the degree of institutionalisation
2. Tailoring the involvement of external stakeholders
3. Involving change agents
4. Balancing consensus and dissent
5. Formulating of long-term organizational goals / Smart goals
6. Detecting and using windows of opportunity
7. Accounting for the organisational fit of the topic
8. Balancing holistic versus specific perspectives
9. Balancing freedom versus impact
10. Managing expectations

It is important to note that our list does not provide one-size-fits-all solutions. Rather we highlight the aspects that need to be tailored to each specific organisational context. This list is of course subject to further inquiry and observation. When further engaging into the actual implementation of our goals and pilot activities we will learn further in how far the selected goals are suitable to drive the rri transition process forward. Still we feel that already now our list of issues may be useful for other actors and in particular other RTOs wishing to engage in similar processes.

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ABBREVIATIONS

BMBF	Bundesministerium für Bildung & Forschung / Federal Ministry for Education & Research
EC	European Commission
CERRI	Fraunhofer Center for Responsible Research and Innovation
FhG	Fraunhofer-Gesellschaft / Fraunhofer Society
FORDATIS	Fraunhofer Repository for Research Data
Fraunhofer IAO	Fraunhofer-Institut für Arbeitswirtschaft und Organisation / Fraunhofer Institute for Industrial Engineering
Fraunhofer IRB	Fraunhofer-Informationszentrum Raum und Bau / Fraunhofer Information Center for Planning and Building
Fraunhofer ISI	Fraunhofer-Institut für System- und Innovationsforschung / Fraunhofer Institute for Systems and Innovation Research
IHS	Institut für Höhere Studien / Institute for Advanced Studies
IP	Intellectual Property
OP	Open Access
ISSI	Integrating Society in Science and Innovation
JERRI	Acronym for the project 'Joining Efforts for Responsible Research and Innovation'
NGO	Non-governmental organization
R&I	Research and Innovation
RRI	Responsible Research and Innovation (as defined by the European Commission)
rri	responsible research and innovation (as discussed in the literature)
RTO	Research and Technology Organization
SAR	Strategy Advisory Board

SMART Acronym for the goal development concept 'Specific, Measurable, Assignable, Realistic and Time related

TNO Toegepast Natuurwtenschappelijk Onderzoek / The Netherlands Organisation of Applied Scientific Research

ANNEX I

<u>Agenda</u>

Visioning Workshop on: "Societal Engagement at Fraunhofer"
April 4th 2017, 09:00 – 17:00
Venue: Fraunhofer UMSICHT, 46047 Oberhausen

08:30 – 09:00	**Arrival**
09:00 – 09:10	**Welcome (done by the workshop moderators)**
09:10 – 09:30	**Round of Introduction (groupwork)**
09:30 – 09:50	**Introduction to the JERRI-Project and the Visioning approach; Presentation of the state of the art 'Societal Engagement at Fraunhofer' (done by the workshop moderators)**
09:50 – 12:20	**Visioning process for 'Societal Engagement at Fraunhofer' incl. short coffee break (groupwork)**
12:20 – 13:00	**Joint Lunch**
13:00 – 13:50	**Presentation of the Visioning results in front of plenum (groupwork)**
13:50 – 14:10	**Presentation of the Ideas of Fraunhofer-UMSICHT for the topic 'Societal Engagement at Fraunhofer' (done by Fraunhofer-UMISCHT)**
14:10 – 15:00	**Derivation of long-term oriented goals related to the topic 'Societal Engagement at Fraunhofer' (groupwork)**
15:00 – 15:10	**Coffee Break**
15:10 – 16:20	**Discussion and Collection of possible pilot activities within JERRI-project (groupwork)**

15:00 – 15:10	**Summary and outlook on further proceeding (e. g. with the results of the workshop) in JERRI (done by the workshop moderators)**
16:40 – 17:00	**Feedback Round and End of workshop**