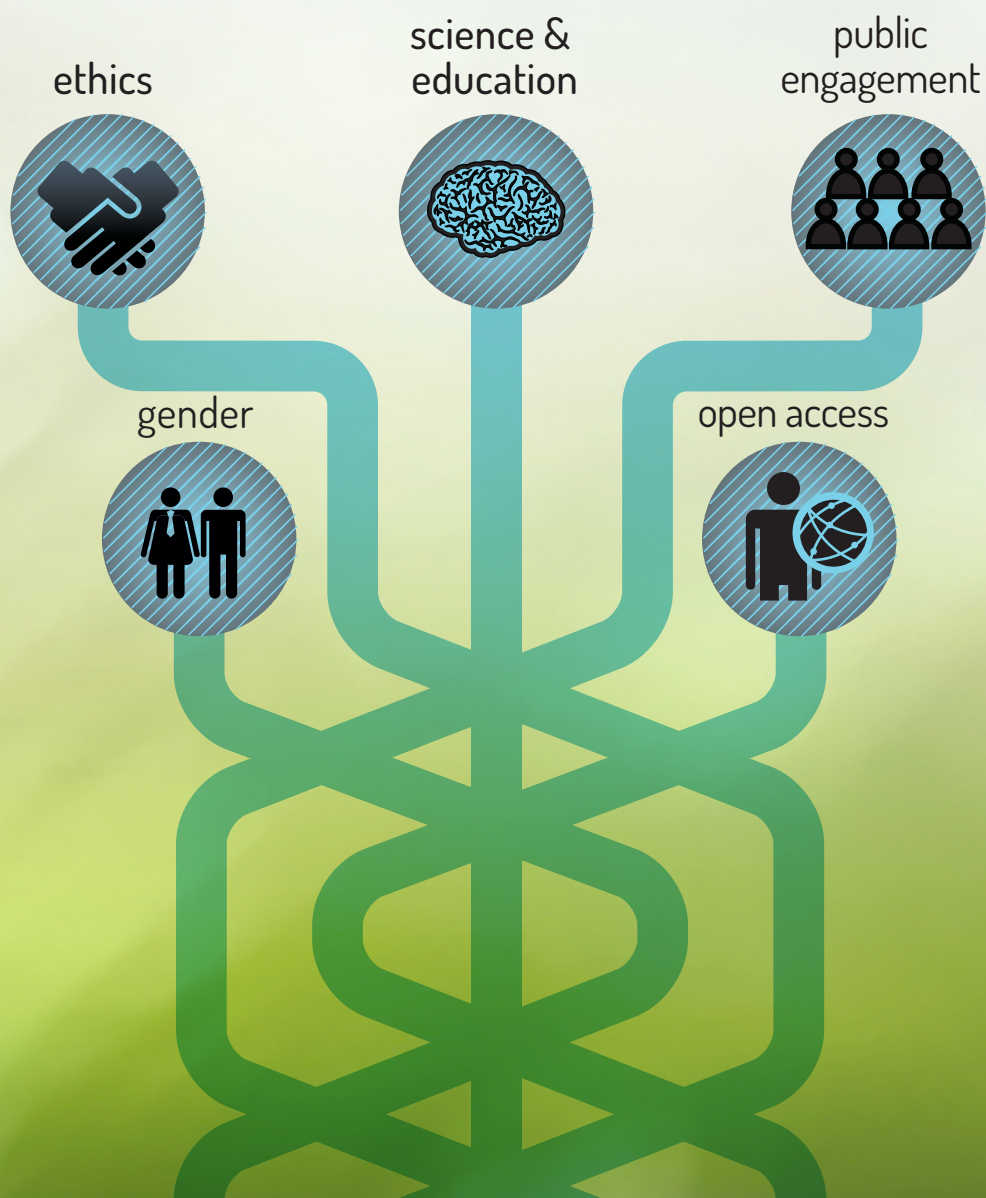




JOINING EFFORTS FOR RESPONSIBLE RESEARCH AND INNOVATION

TNO implementation report

DELIVERABLE D7.1



JERRI – Joining Effort for Responsible research and Innovation

Deliverable D7.1

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Glossary

EARTO	- European Association of Research & Technology Organisations
ECN	- Energy Centre Netherlands, a new part of TNO, since January 2018
GDPR	- General Data Protection Regulation
HR	- Human Resources
IP	- Intellectual Property
JERRI	- Joining Efforts on Responsible Research and Innovation
LD	-Leadership Development
NGWI	- Netherlands Code of Conduct for Scientific Integrity / Nederlandse Gedagcode Wetenschappelijke Integriteit
OA	- Open Access
OS	- Open Science
POS	- Platform Open Science
TNO	- The Netherlands Organisation of Applied Scientific Research
RRI	- Responsible Research and Innovation
SAC	- Strategic Advisory Council
SA&P	- Strategic Analysis & Policy, a unit of TNO
SMART	- Specific, Measurable, Achievable, Relevant, Timebound

1 Purpose

This document (D7.1) reports on the lessons learned from the implementation phase of the JERRI project. It builds on earlier documents written in the project: D3.1, which discussed the process of goal-setting within TNO; D3.2, which documented specific goals for Responsible Research and Innovation (RRI) at TNO, D5.1, which discussed various organizational barriers and enablers regarding the institutionalization of RRI, and D10.2, which documented lessons learned from the process goal setting.

The goal of the current document is to make available lessons learned within TNO from the implementation phase of the JERRI-project.

More information on the JERRI project, the RRI dimensions and their current implementation within Fraunhofer and TNO can be found in D1.1 Synthesis of existing RRI practices, and more information on the institutionalization of RRI can be found in D1.2 Deepening 'Deep Institutionalisation'.

2 Executive Summary

In this report we document the outcomes of the implementation activities of the JERRI-project. After the initial goal setting, making of action plans and identification of barriers and enablers, we report on the actual achievements of the goals and lessons learned from them. The aim is to understand and make available lessons learned from the implementation phase of the JERRI-project.

In chapter 1 we will briefly discuss how the implementation of JERRI activities fit with the structure of TNO (and it's developments). In chapter 2 we will take a closer look at the consequences of these organisational developments of TNO. This will help to understand the context of the JERRI project from a wider perspective than from the project itself. We shall be looking at contextual changes in the environment and consequences for the barriers and enables for implementation of JERRI activities.

Before we continue to detail out in chapter 4 how TNO implemented the dimension related JERRI activities and report about the results, we will in chapter 3 recap on the initial activities per dimension. This will help to understand what lessons learned could be based from our experiences of the implementation of activities. It will shed light on the outcomes (against the SMART criteria that were set at the planning stage) and explain deviations (in execution of its outcomes). Furthermore we will start with the evaluation. Concrete results will be made available (through annexes to this report).

3 Introduction

Overall, the ambition of TNO is to further develop and institutionalize Responsible Research and Innovation (RRI). TNO's participation in the JERRI project, a collaboration with Fraunhofer and several other knowledge institutes, offers an opportunity to do that.

TNO has the mission to “connect people and knowledge to create innovations that boost the sustainable competitive strength of industry and well-being of society” (<https://www.tno.nl/en/about-tno/mission-and-strategy/>). Indeed, RRI is part of TNO's mission. Looking at the different possible ‘narratives’ regarding RRI (JERRI D1.2), TNO's current strategy and culture (at the start of the project) resembles Narrative B: Technological Progress, which is characterized by trust in technological progress, and which is legitimized by the Triple Helix of business, knowledge, and government. In addition, TNO has the ambition to move its strategy and culture towards Narrative F: Research and Innovation With/for Society, e.g., in its ambitions to develop solutions for societal problems.

The context of the TNO organisation has changed from the inception of the project as we have entered a new strategic period (2018-2021) with accompanying changes in the organisational structure. The new strategic period has a timeline of four years (2018-2021), creating an intermediary horizon that can be both ambitious in terms of goals, but is still within the span of control of the current organisation and board of directors. The organisational structure of TNO is now as displayed in Figure 1.

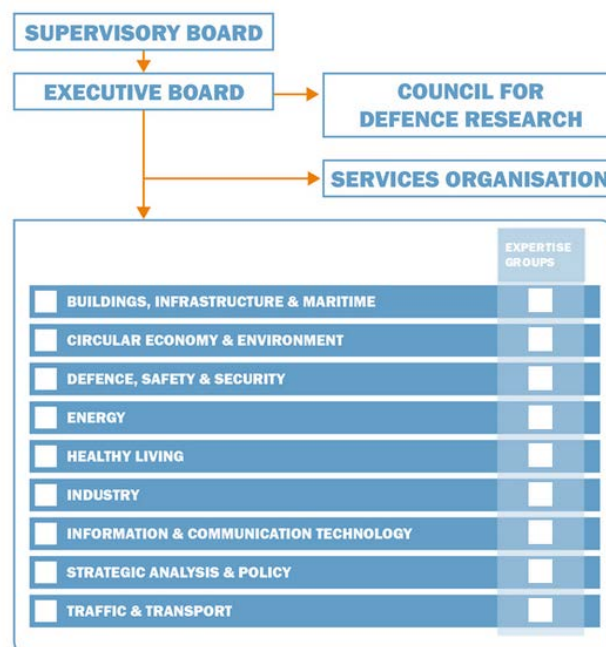


Figure 1: Organisational Structure of TNO as of 1 January 2018 (Source: <https://www.tno.nl/en/about-tno/organisation/>)

TNO went from a Matrix organisation to a Unit-type organisation where individual units carry a market responsibility as well as a science and operational responsibility. Supporting units are part of the line-management (services organisation). Individual Units have expertise groups. A unit varies in size between 40 and 400 staff.

As discussed earlier, e.g., in JERRI D1.1 and JERRI D3.1, TNO is relatively centrally organized. As a result, the relevant people, e.g., for a specific RRI dimension, like Ethics, can be brought together relatively easily, and the plans of TNO are short-term oriented, because they are articulated by relevant stakeholders and change agents, within a relatively small and centralized organization for goals in this strategic period.

As discussed in D5.1, the role of change agents is considered crucial for successful institutionalization. The advantage of bringing change agents together in the form of a project, such as JERRI and allow them to exchange experiences and work together on all 5 RRI dimensions integrally (all across TNO) is considered an advantage of our approach, as change agents have a pivotal role towards the wider organisation. Change agents can be found in various persons in the organisation and have a (senior) role or responsibility in the organisation, or are in key positions where they can influence or affect decision making processes about institutional change. The iterative approach followed in the JERRI project allows that we make adjustments if needed/based on feedback from change agents, who are to a large extent involved in the change process itself. These change agents help us also to find other/new change agents.

In the development of the roadmaps for the dimensions we have taken the current (new) TNO Strategic Plan and combined them with a longer term vision, in order to show a logical embedding of JERRI actions. Emphasis will be given to institutionalization of the ambitions in the roadmap, by involving the wider organisation, thereby reducing the relative vulnerability of individual actions or change agents, by sharing and embedding the ambitions of RRI into a wider community.

4 Setting the organisational context

4.1 Internal context

From the inception of this project, the execution of the activities within the project can hardly be separated from the developments in the TNO organisation. The success and drawbacks in the JERRI project have a direct relationship with the (changing) structure, process, and people that have roles and responsibilities.

Most of the structural changes have been mentioned in earlier deliverables (for instance D1.2, D3.2, D5.1 and D5.2), including the opportunities for changes and chances for successful activities that are part of the respective dimensions. Not described where the barriers to implementation that could be considered a consequence of change. With an aim to learn from these experiences, we will briefly discuss these barriers.

As organisations are changing, and staff are reassigned (both in positions, but also in governance structures), we (the JERRI team) were faced with the immediate consequence of the new structure and staffing as of first of January. The pivotal role of change agents will be discussed in this part of the report.

The implementation process of most of our activities was concentrated in the period of Q3/Q4 2017, continued in 2018 and finished in Q1 2019. As our activities were geared towards institutionalisation and influencing (foremost) internal stakeholders, we were confronted with four major barriers:

1. Delay in governance structure;
2. Delay in execution of activities;
3. Delay as a result of changing of staff and motivations;
4. 'Execution' barrier.

Ad 1. The new organisation (per 2018) has a new governance structure. the priority of TNO was to focus on the continuation of the primary process and at the same time organising and staffing the governance structure. Some of the support structures/bodies were discussed only after the change date: for example, the CSR Board was installed in April 2018 and first met in June 2018. The six month period of delay meant for JERRI that the focus for the execution of activities effectively stalled for this period. The CSR board did however have a new strategy (spanning the period 2018-2021 which was adopted by the Board of Directors of TNO in April).

Ad 2. For the success of implementation and institutionalization of most activities, not only had the right staff to find new positions and responsibilities, the activities themselves could only be started after this 'starting up period'. The whole internal process of reporting has changed, including the merge with a large new institute (ECN); the organisational capacity for change itself was somewhat stifled as well as the priority to ask for more new activities. An example how this affected JERRI activities is that no new

communication messages could be placed on the internal website of TNO, as the idea was that employees have had already an overload of 'new' messages and this channel would lose weight. New activities (resulting from JERRI) were postponed or delayed in order not to overwhelm individuals in the organisation, causing some activities not to result in outcomes.

Ad 3. On an individual level sponsors, change agents and newly appointed managers were trying to find their way into working in the new organisation. In terms of priority setting, changing roles and responsibilities and enthusiasm, this has taken time to get people on board of the JERRI project. Although the project has been running since 2015, suddenly new stakeholders are introduced to the project, who have to make their mind up about the project, the content and their role. This 'transaction' time has delayed the progress of some activities.

Ad 4. Another type of barrier could be described as the 'execution' barrier. From the beginning, the project has been running on the assumption of 'setting goals' and 'action planning', no concrete changes were required (apart from the female leadership training). Suddenly, all the preparations, ideas, commitments and synergies needed to be mobilised. From practical experiences one can learn that it is relatively safe to stay in goals setting and planning stages of a project, but it is much harder when these activities need to be executed. As a result misalignment of ideas happen, activities and used semantics differed from the idea stage (see later in 6.4.2; the crowdsourcing vs crowdfunding example) and activities with sound plans partially fail or delay as a consequence of changes in timings and execution.

4.2 Success from the organisation context

Success of change could also be identified, and the JERRI-project team could take credit for this. The ability of the JERRI ideas and plans to be integrated in the change moment (both organisational and in terms of governance) have been identified and used in order to achieve a degree of institutionalization of RRI concepts. On an organisational level the activities were signed off and accepted before the changing structure of TNO. It was therefore transferred into the new structure and enhanced, partly because individual members of the JERRI project team (as agents of change) kept their position within the organisation and could use the moment of change to introduce new concepts and ideas. The main drivers for successful implementation are therefore still present in the new governance structures.

By using learnings from earlier JERRI deliverables and discussions with FhG and Advisory Board members, dimension leaders were able to express better and stronger the significance of JERRI and the holistic perspective that TNO has taken. Moreover the group of stakeholders increased as new staff was assigned to the new governance structures

The new governance structure has made it possible to present new strategies for the period of 2018- 2021 giving 'rri' a place in the context of the organisation and steering policies towards RRI. For example the newly adopted CSR strategy (see annex 1, in Dutch) has more or less helped to institutionalize the idea of TNO as an rri organisation (Narrative F). In the preparations of the TNO Annual Report 2018, the concept of RRI of a 'sustainable, ethical acceptable and societally desirable (responsible) research and innovation organisation' has been taken as a starting point to express TNO's commitment towards its stakeholders.

4.3 Contingencies with consequences for JERRI

As much as JERRI's implementation success is dependent on the organisational context and organizational development of TNO, a third factor needs to be introduced that relates to the barriers and enables of JERRI's implementation activities.

As TNO is part of a wider innovation-eco-system, external factors could advance or hinder implementation activities. External factors could either be hard (introduction of a new law) or soft (signing up to a new code of scientific integrity). Both have consequences for the JERRI team working on implementation activities. The initiative put forward by the Netherlands Academy of Sciences for Scientific Integrity has led to momentum where TNO needed to act. This has accelerated the internal debate and positioning of RTO's in the Code (more in detail in 6.2.3).

Further, individual activities that are often considered contingencies from a project perspective take place. Motivated employees and departments are putting forward their own activities that have a strategic fit with the RRI-agenda and activities of the JERRI projects. These activities are hard to identify and plan for, but they do occur. When possible they are combined with JERRI activities, but sometimes they happen completely without any pre warning.

It points to a wider felt (incumbent) transition towards narrative F as explained in Deliverables 1.1. An example of this has been the launch of a Podcast series (<https://www.tno.nl/nl/tno-insights/tno-insights-podcasts/>) at the revised website of TNO (<https://www.tno.nl/nl/tno-insights/>). Contingencies play a part in the execution of JERRI activities as JERRI is not the only project that changes how TNO responds to external pressures, ideas and needs. An example of this is that there has been a JERRI action planned to change and to diversify the content of the TNO Time textbased (news)webpages. However, as part of a wider repositioning of the TNO brand, TNO Insights was launched in October 2018. Here we can illustrate that a repositioning coincides with a planned JERRI activity.

5 Original Goals & Action Plans

To introduce the original goals from D3.2, we have repeated the SMART-goals that have been used in D3.2 and these have been taken as starting point for the implementation of activities.

As discussed, the different RRI dimensions have different levels of institutionalization (maturity) within TNO (as assessed by the JERRI project team in D3.2; for more information about the state of art of RRI in TNO, see Deliverable 1.1, 2016):

- Gender Equality (Diversity) and Ethics (Integrity) are relatively well-institutionalized, e.g. in the form of Committees and yearly Action plans; still activities can enhance and improve these dimensions;
- Societal Engagement is partly institutionalized, e.g. in the Strategy Advisory Councils for the Themes (Units); moreover, it is (informally) in TNO's 'DNA'. Through JERRI we can draw attention to and change towards a RRI agenda;
- Science Education and Open Access are relatively less well institutionalized in TNO—therefore these dimensions can benefit from the JERRI project.

These different levels of institutionalization (also reported in D3.2) can be understood as different levels of maturity and following a common 5-level scale of maturity (initial; repeatable; defined; capable; efficient), the RRI dimensions can be drawn as follows—see Figure 3.

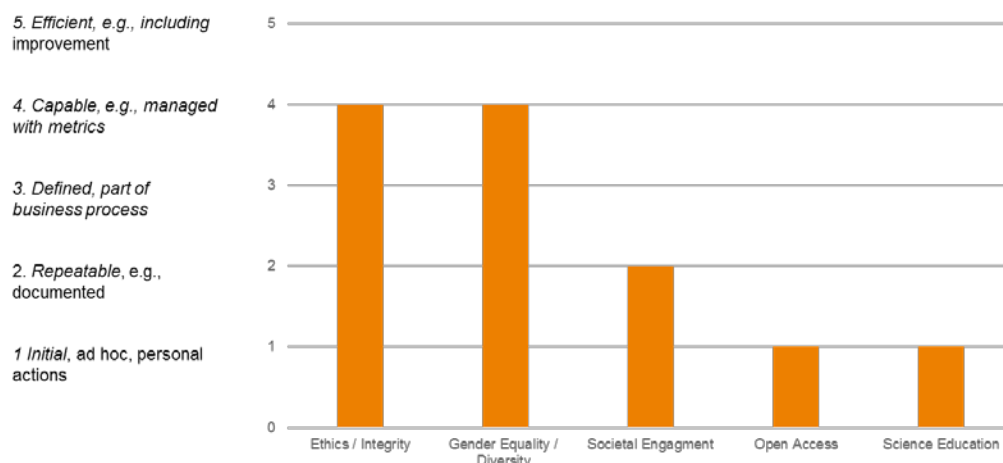


Figure 2: The RRI dimensions have different levels of maturity within TNO (source: self-assessment of the JERRI project team)

These different starting positions for each of the dimensions have led to different goals and action plans, which will be described in the next chapter:

5.1 Gender Equality (Diversity)

The original goals and action plans for Gender Equality / Diversity were the following (see D3.2 for details):

1. Increase the visibility of female talent:

- Organising 2 series of Female Leadership Trainings, consequently training 40+ women, that evaluated the usefulness of the training with a 4 (or more) on a 5-point scale
- Using and expanding current HR/Talent databases and applying this in practice; report on use through review of database by LD-committee

2. Create awareness on implicit bias with respect to gender:

- Organising a gender bias training for male TOP managers at TNO, consequently training 20+ staff, that evaluated the usefulness of the training with a 4 (or more) on a 5-point scale
- Contributing cases to the serious game and evaluating response

5.2 Ethics (Integrity)

The original goals and action plans for Ethics were the following (see D3.2 for details):

1. Ethics Game for Management (originally: Improve Moral Capabilities)

- Goal: To develop and execute a training ('management game') to enhance ethical awareness and moral capabilities in TNO, especially of people in leadership roles.
- Action plan:
 - o Develop a training ('management game') (on the basis of the "Mayor Game", which was developed in another project)
 - o First offer the training/game as part of the regular Trainee meetings, e.g. 2 sessions with approx. 10 participants in each session
 - o Present the game in a Leadership Development meeting, and then offer approx. 20 sessions, with approx. 10 participants in each session
- SMART goal: All top managers (200+) and all trainees (20+) participate in this training/game and evaluate its usefulness with a 4 (or more) on a 5-point scale

2. Societal and Ethical Impact Canvas (originally: Ethics in Society)

The work on this goal was a combined effort of Ethics and of Societal Engagement. See below: Societal Engagement.

3. Scientific Integrity Code (originally: Scientific Integrity)

- o Goal: To improve awareness within TNO of the new, national Scientific Code, esp. amongst principal scientists (and also senior scientists).
- o Action plan:
 - o Develop a compact e-learning module (e.g., containing 2-3 video clips of 2-3 minutes, with 2-3 quiz questions) to explain this new Scientific Code
 - o Offer this e-learning module to principal (and senior) scientists, science directors and research managers.
- o SMART goal: 20 principal scientists (of a total of 27) plus 40 senior scientists (of a total of 400 senior scientists) participate in the e-learning module, and evaluate its usefulness with a 4 (or more) on a 5-point scale.

5.3 Societal Engagement

The original goals and action plans for Societal Engagement were the following (see D3.2 for details)

1. Include Societal ('Unusual') Stakeholders in Strategy Advisory Councils

- Goal : To include societal stakeholders in TNO's Strategy Advisory Councils (SAR), which will be organized anew, as part of the restructuring of TNO.
- Action plan:
 - o Learn from Theme Urbanisation (which already has two NGOs in their SAR)
 - o Discuss the inclusion of societal stakeholders in the SARs with the Units
 - o Support the inclusion of societal stakeholders in the Strategy Advisory Councils
- SMART goal: TNO includes two societal stakeholders in each (new) Strategy Advisory Council.

2. Societal and Ethical Impact Canvas (originally: Societal Impact Tool)

- Goal: To develop and apply a practical tool that helps people at TNO to discuss societal and ethical issues in their projects, especially in a project's early phases.
- Action plan:
 - o Develop a tool, by pragmatically re-using and combining parts of existing tools (e.g., the Societal Impact Assessment Tool, developed by TNO trainees in 2014) and state of the art (e.g., the SATORI project);
 - o Apply this tool in 4 practical cases, and evaluate its practical usage and benefits
- SMART goal: The tool is applied in 4 actual projects, and the people involved evaluate its usefulness with a 4 (or more) on a 5-point scale
- SMART goal: 50 business developers (of total 130) and 50 (senior) project managers (of total 200) hear about the tool and receive basic instructions to use it

3. Share Best Practices in User Involvement

- Goal: To share examples of 'best practices' of 'user involvement' and projects with 'citizen science, so that our stakeholders, and the general public, know about it.
- Action plan:
 - Identify/select approx. 4 'best practices' of 'user involvement' in projects
 - Communicate these within TNO, and outside TNO
- SMART goal: TNO communicates 4 'best practices' in 'user involvement', both within TNO and outside TNO.

5.4 Science Education

The original goals and action plans for Science Education were the following (see D3.2 for details):

1. To show science

- Increase the type, diversity and number of contributions in TNO TIME; this would comprise a shift in written articles to more diversified content (current status 95% articles - 5% interactive) to 75% articles – 25% interactive in 2018.

2. To champion the value of science

- Make a public statement on TNO website how we do projects and are accountable for our scientific integrity in 2018
- Share at last two sensitive dossiers per year

3. To invite society

- Open Day on location
- Managed information portal for society
- Develop relations with crowdsourcing platforms

4. Create synergy across RRI Dimensions (& with Fraunhofer)

5.5 Open Access

The original goals and action plans for Open Access were the following (see D3.2 for details):

The original action plan articulated three main goals with regard to Open Access (OA) at TNO:

- Establishing and installing an Internal Open Science Platform (POS) that is able to deal with Open Access questions and queries, and advise on policy level what is required for TNO as an organization.

- Drafting and executing an Annual Plan for 2018
- *Decision Making Tool* to facilitate individuals when they have questions related to OA and IP.

5.6 Overview of all dimensions and goals

The goals for the different RRI dimensions are summarized in the table below, with their associated budgets¹ and planning, as well as cross-overs between dimensions:

¹ Note that the budget is a an approximate budget, based on plans that were submitted in D3.2. Budget has been allocated by the sponsor, on the advise of an internal committee. The source of the budget is the JERRI-funding from the EC.

Goal	Budget	Planning						Cross-overs
	236	2017		2018				
		Q1	Q2	Q1	Q2	Q3	Q4	
Gender Equality	59							
1. Female leadership training	39	Exe		Exe				
2. Database for female talent	5			Dev	Dev	Dev	Dev	
3. Implicit Bias Training (25 TOP managers)	15			Exe	Exe	Exe	Exe	
Contribute case to game (Ethics Goal 1)				Dev	Dev			Ethics, Societal Engagement
Ethics	55	Q3	Q4	Q1	Q2	Q3	Q4	
1. Improve Ethical Awareness and Moral Capabilities: A game/training, for top management and for trainees	25	Dev	Dev	Trai	LD	LD	LD	Gender equality, Societal engagement
2. Ethics in Society: An 'Ethical and Societal Issues tool, for business development and project management	20	Dev	Dev	App	App	Rep		Societal Engagement Goal 2
3. Scientific Integrity: An e-learning module, for (principal) scientists, science directors, RM's	10	Dev	Exe	Exe				-
Societal Engagement	40							
1. Involve ('unusual') stakeholders in Strategy Advisory Councils	12	Dev	Dev	Exe	Exe	Exe	Exe	
2. Societal Impact' tool for project management	8	Dev	Dev	Exe	Exe	Exe	Exe	Ethics Goal 2
3. Share Best Practices in User Involvement	20			Exe	Exe	Exe	Exe	Science Education (1)
Contribute case to game (Ethics Goal 1)								
Science Education	42							
1. To show science				Exe	Exe	Exe	Exe	Societal Engagement (3)
2. To champion the value of science	10			Exe	Exe	Exe	Exe	Ethics
3. To invite Society	32	Dev	Dev	Exe	Exe	Exe	Exe	Societal Engagement
Open Access	40							
1. Open Access Platform, Action Plan, and Decision Tree Publishing	40	Dev	Dev	Exe	Exe	Exe	Exe	Ethics (Scientific Integrity)
App = Apply Dev = Develop Exe = Execute LD = Leadership development Rep = Report Trai = Training								

6 Realisation of Action Plans

The following sections document the JERRI project team members' experiences during the execution of the actions plans within and across the different dimensions:

6.1 Gender Equality (Diversity)

6.1.1 Experiences

Having a 'home' base for diversity activities

Implementing diversity related activities in an organization asks for efforts from multiple layers and multiple stakeholders in the organization. In our experience, having a strong basis, as a 'home' of activities in the form of the Diversity Steering committee has been of strong benefit (see also D1.1). The Diversity steering committee has been set up by the Executive Board to facilitate and promote diversity within TNO. The committee is chaired by the Chief Operational Officer of TNO. Currently the steering committee focuses on gender and international diversity. The Diversity steering committee holds meetings three to four times a year, and consists of representatives of Women @ TNO, International diversity group, Unit director, Corporate Science Director Marketing and communication and HR employees. The diversity steering committee acts as a driver and catalyst for change, itself consisting of highly motivated members representing different layers and different stakeholders in the organization. The diversity committee also receives very valuable input in the form of signals from different parts of the organization, and uses this input for development of plans and policies. Activities of the JERRI project and activities of the diversity steering committee have supported and reinforced each other, creating synergistic effect on the outcomes of activities.

Reinforcing the change through policies

Besides setting up activities, providing time and budget, the steering committee is also making suggestions for changes in policies on an organisational level. Examples of policies concern recruitment and selection guideline as well as guideline on gender neutral recruitment. An important note to share on this is that close attention needs to be paid to rolling out, and monitoring, of the implementation of the policy, e.g. is the policy being used and is it having the desired effect. The figures are monitored by HR department, on request of the diversity steering committee.

Having the time and budget

Having the time and budget to dedicate to activities is essential in order to make progress on the diversity goals. Without the JERRI funding and internal TNO funding coming from the Diversity steering committee, we would not have managed to carry out the activities we did, and would not be able to give diversity the prominence and visibility in the organization that it deserves.

Change stages and time and perseverance

Diversity change does not happen overnight. A lot of combined effort from multiple stakeholders needs to be done in order to make progress in the right direction. In the first phase, awareness needs to be raised for the fact that (gender) diversity does matter. TNO has passed this phase, and in general the importance and relevance of gender diversity is not challenged. The next phase concerns implementing change via various activities and instruments. Energy and input from the (top) management, and support system in the form of HR professionals, as well as employees themselves are all needed for this phase. This is the phase that TNO is currently in. The next phase would be to reap the rewards of our efforts in the form of a fully inclusive, diverse organization, that makes full potential of all of its employees. In order to come to that phase, serious work is being done. However, it is also important to note that the progress is not a steady line upwards, but a winding path with successes and challenges along the way. It takes time and perseverance of all the stakeholders in this process to implement (diversity) change in an organization.

6.1.2 Outcomes

- (i) Female leadership programme (FLP): over the course of two years, four FLPs have been organised, 100 female professionals have been trained. All four FLPs have been highly positively evaluated (higher than 4 on 1-5 scale). The FLPs have been executed by an external party. Prior to carrying out each of the 5 trainings, meetings have taken place between the trainers and TNO employee who was in charge of coordinating the trainings. In this way the training was tailor made for the needs of TNO employees.
- (ii) Developing (female) talent database: two pilots in two Units (Industry and Strategic analysis and policy) have been started. In total there are around 20 employees who have received extra attention. They are having extra conversations with the managers, are given time for education (and mentoring) to help them make the next career step.
- (iii) Training for Top 25 managers: In total 2 full-day implicit bias trainings have been conducted, training in total 25 top managers and 25 HR (and Marketing and communication) professionals. Both Implicit bias trainings have been highly positively evaluated (higher than 4 on 1-5 scale). AS with FLPs, the trainings have been delivered by external parties. Prior to each of the trainings, briefing has taken place between the trainers of the external party and TNO employees in charge of coordinating the training. The trainers also had individual interviews with a few employees prior to the training, in order to understand the TNO's organisational culture and processes when it comes to recruitment, selection and promotion of talent.

6.1.3 Deviations

There are three deviations to the original plan:

1) Additional activities have been conducted in order to strengthen the achievement of our goals:

- a. Implicit bias training: Instead of only conducting implicit bias training for top 25 managers, we have also conducted an additional training for around 25 HR professionals and a few marketing and communications specialists. The reason is that we have identified HR professional as essential stakeholders in supporting our diversity and inclusion mission. HR professionals are involved in selection as well as promotion activities and thus play an important role in attracting new (diverse) talent and in the process of supporting the diverse talent growing in the organization.
- b. Female leadership programme (FLP): Instead of conducting two FLPs, we have conducted four trainings. In this way we could divide the group according to experience: two FLP were organized for medior female scientists and two for senior female scientists, one for each level per year.
- c. In order to further support gender equality in the organization (specifically inflow of female talent), gender neutral recruitment guidelines have been written and incorporated in HR policy. Guidelines focus on gender (e.g. gender neutral language in vacancies), but also address broader diversity issues such as attracting non-Dutch talent.
- d. Broader diversity and inclusion activities: a number of workshops, events and lectures on the topic of (gender) diversity and inclusion have been organized in various locations of TNO, targeting diverse stakeholders: (top) managers and employees alike. The workshops, events and lectures have been given by a number of different stakeholders: external speakers, Women @ TNO representatives, dimension leader of the JERRI project and other diversity committee members.

2) Adjustment has been done to development of female talent database.

In the beginning of the project, it was envisaged to develop a female only, talent database. As the development of the database was furthering, it became evident that female only talent database would not be ideal. The reasoning was that in this way, we would exclude a part of the TNO population that may also be in need of extra attention in order to make the next career step (male colleagues who are otherwise less visible). In view of the larger inclusion debate, also male colleagues are part of the database, although the focus lies on females, as they are largely underrepresented in the higher levels in the organization.

3. Gender case has not been part of the Ethics game

During the development phase of the Ethics game, focus on gender has unintentionally slipped from the radar. What we have managed to achieve is pay attention to gender diversity in characters in the game as well as cases that are being presented in the game.

6.1.4 Deliverables

There are no deliverables or documents that could be transferred.

6.1.5 Evaluation

Overall, gender diversity activities have been implemented smoothly, and enlarged with extra activities on a number of topics. Although they have been executed smoothly, a lot of time and effort of persons involved went into making them successful.

It is very good to note that all of the undertaken activities have a 'life' after the JERRI project. Female leadership programme will become part of regular trainings being offered at TNO. Follow up trainings for Implicit bias training are currently discussed in different parts of TNO. (Fe)male talent database will continue next year and this initiative will be expanded to include two other units who will start working with it. This means that in the coming year, the (fe)male talent database will be carried out in 4 TNO Units, with the plan to roll it out to the entire organisation in 2020.

6.2 Ethics (Integrity)

6.2.1 Experiences

Ethics Game for Management

The Ethics Game was developed and executed one time, in a leadership meeting of TNO (TOP-60 leadership, from all Units of TNO, October 2018). The participants evaluated the training (management game) positively. This positive reception created a basis for making plans for future executions of the training, e.g., with people in leadership roles in the different Units of TNO.

Furthermore, the Ethics Game was translated into English, so that it can be shared internationally with other RTOs, and also to accommodate leadership within TNO with international backgrounds. Moreover, the Ethics Game has sparked interest in the Compliance Network, via TNO's Integrity Officer (and JERRI project team member).

Scientific Integrity Code

The development of the new version of Netherlands Code of Conduct for Research Integrity (<https://www.knaw.nl/en/news/news/new-netherlands-code-of-conduct-for-research-integrity>) took longer than expected: it was published only in September 2018.

The involvement of TNO, however, was critical in its development, especially the parts regarding Open Access, in which the concerns and interests of TNO, and of other Dutch RTOs, differ from the concerns and interests of universities. Moreover, the timely efforts of the people working on Open Access (the Open Access Platform; bringing together experts from various backgrounds), their concerns for issues typical for applied scientific research (of TNO and other RTOs, which is different from academia), and their collaboration with the people working on Scientific Integrity was key to getting TNO's perspective into the Netherlands Code of Conduct for Research Integrity. The Code applies to all of TNO researchers, research outputs and behaviour and spells out what needs to be done on an organisation level to support organisation in working with this Code.

6.2.2 Outcomes

Ethics Game for Management

- Developed an Ethics Game that is ready for international dissemination and application. It will be used as part of the internal training of newly started Research Managers & and played with other EARTO members during the EARTO Annual Congress 2019.
- Enthusiasm and support for future applications, both within TNO and outside TNO
- We reached 60 top managers (not the 200, originally planned) and we did not formally evaluate its usefulness (managers tend to find it hard to prioritize the filling-in of a questionnaire)—but these 60 top managers are enthusiastic.

Scientific Integrity Code

- Contributed to the new version of the Netherlands Code of Conduct for Research Integrity (<https://www.knaw.nl/shared/resources/actueel/bestanden/netherlands-code-of-conduct-for-research-integrity-2018-uk>)
- In the course of 2019 (probably after the JERRI project) TNO will organize efforts to disseminate this Code within TNO and to discuss its practical implications for TNO; target audience: principal scientists and senior scientists.

6.2.3 Deviations

Ethics Game for Management

The development of the Ethics Game took longer than originally planned and took more budget than originally planned. As a consequence, and in order to do focus on executing the Ethics Game with the Top 60 managers of TNO and generate enthusiasm and support amongst them, the testing in a Trainee meeting was skipped. The execution of more sessions was postponed until after the JERRI project. Furthermore, the budget overspending lead to the choice to reduce work for the Scientific Integrity Code (see below).

Moreover, one element of the Ethics Game also did not materialize: the idea was that one issue from Diversity/Gender Equality and one issue from Societal Engagement would be integrated into the Ethics Game. However, during the development of the Ethics Game, the element from Diversity was (erroneously) lost in the process (the Societal Engagement element did go into it). The gender balance was attended to.



Fig 3 Screenshot of gameplay

Scientific Integrity Code

The development of the new version of the Netherlands Code of Conduct for Research Integrity took longer than expected. Also, a larger part of the budget for activities for Ethics was spent on the development of the Ethics Game;

E learning module

As a consequence of these two contingencies, there were no opportunities (planning-wise) or resources (budget-wise), within the JERRI project, to develop an e-learning module and offer it to people in TNO. The positive news is that the initiative for an e-learning will be realised outside of the JERRI project with help of parts of the normal organisation in 2019, as the request from the organisation is clearly present (there is a need).

6.2.4 Deliverables

Ethics Game for Management

- An Ethics Game that is ready for international dissemination and application. It will be used as part of the internal training of newly started Research Managers.

Scientific Integrity Code

- A new version of the Netherlands Code of Conduct for Research Integrity: <https://www.knaw.nl/shared/resources/actueel/bestanden/netherlands-code-of-conduct-for-research-integrity-2018-uk>.
- See also: <https://www.knaw.nl/en/news/news/new-netherlands-code-of-conduct-for-research-integrity>

6.2.5 Evaluation

The efforts regarding Ethics did deliver practical results: there is an Ethics Game for Management ready for international dissemination and application. TNO has actively contributed to the new Netherlands Code of Conduct for Research Integrity and added the perspective of applied research and applied research organisations. For the follow up, additional activities regarding training will be set up in due time, to train scientists how to use the code

6.3 Societal Engagement

6.3.1 Experiences

Include Societal ('Unusual') Stakeholders in Strategy Advisory Councils (SACs)

The JERRI team members organised several meetings in September and October 2017 with Strategy Managers for the nine Units, to share the proposal to add societal ('unusual') stakeholders in the new Strategy Advisory Councils (SACs). These strategy managers *coordinate* the creation of the new Strategy Advisory Councils, while the Unit Directors are *responsible* for their creation. In parallel, the JERRI team members helped to develop *Terms of Reference* (January 2018) for the creation of these new Strategy Advisory Councils.

The *Terms of Reference* advice the creation of a good balance of actors from industry, academia, government, and societal organizations, stressing the need for the latter given TNO's ambition to align its mission and strategies to societal themes and, e.g., the UN's Sustainable Development Goals (SDGs). The *Terms of Reference* also recommend a better gender balance and including people from different age groups.

The Directors of the nine Units used these *Terms of Reference* to discuss potential candidates for their different SACs. The creation of these, however, took longer than planned. The nine new SAC were supposed to be active from the start of 2018, when the new structure became operational (or several months into 2018, realistically).

However, three SACs became operational in the first half of 2018, three in the second half of 2018, and the remaining three are in the process of being created.

In order to learn from the processes of creating these new SACs (and the inclusion of societal stakeholders), we conducted six interviews with Unit Directors (between October 2018 and January 2019; the remaining three interviews will be done when they also have their SACs operational, hopefully within the time of the JERRI project).

A main finding from these interviews is that the goal of including societal *organizations* may be partially misguided. The goal is to include *concerns* for society. And this can be done, so argue some of the Unit Directors, also by including the *right people*, e.g., people in the industry that have *societal points of view*. Another finding was that our sessions with the Strategy Managers were helpful for them; in these sessions we suggested names for possible SAC members, which helped them to start (out of the box) thinking.

Societal and Ethical Impact Canvas

The JERRI team members developed a *Societal and Ethical Impact Canvas*, through an iterative process, involving two interviews and two workshops with potential users (project managers, business developers, researchers), to test and improve the prototype. More information on the Canvas can be found on <https://innovationforwellbeing.wordpress.com/>; a high-res pdf can be found on <https://innovationforwellbeing.files.wordpress.com/2018/05/societal-and-ethical-impact-canvas.pdf> (Figure).

The intention of the Canvas is to enable 4-8 people to have a 60-90 minute workshop and to clarify and articulate: a clear mission, including impact and collaboration. During its development, many details were omitted, so that a basic Canvas remained (the original idea was to develop a Toolkit, with multiple tools). The current version of the Canvas is simple, attractive, useful and usable. It is *not* perceived as a checklist or as a compliance document (which people tend to find irrelevant or useless).

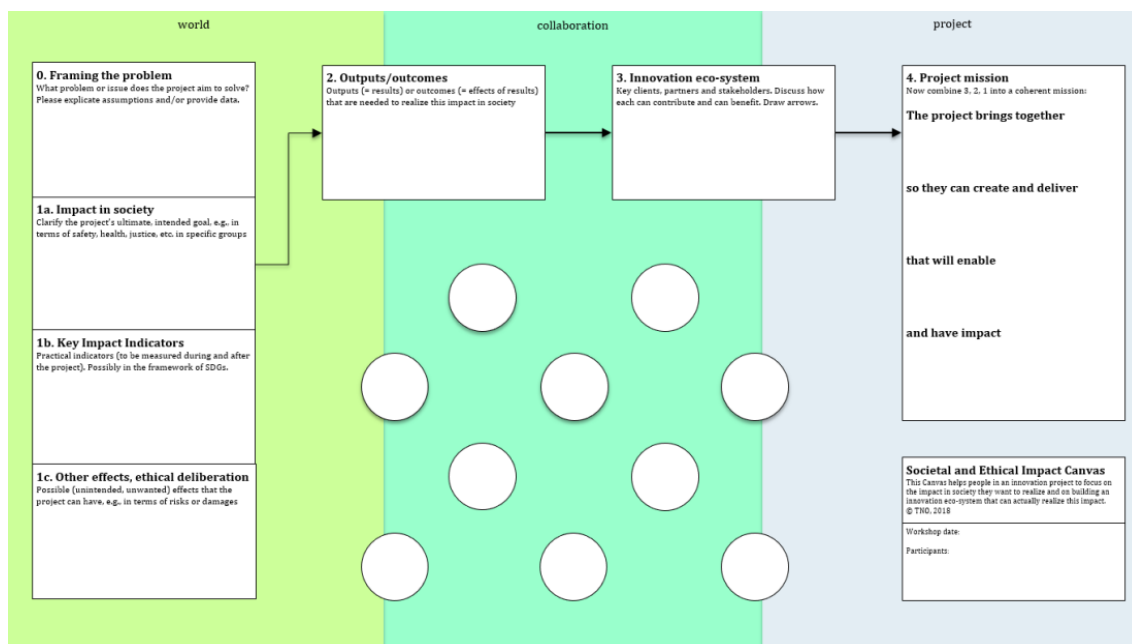


Figure 4: Societal and Ethical Impact Canvas

Despite its potential benefits, efforts were needed to incentivise people within TNO to use the Canvas. We approached some 20 people, from different Units, to discuss opportunities to apply the Societal and Ethical Impact Canvas. Overall, they were positive about the Canvas and expect it to be useful and usable. However, they found it hard to integrate the Canvas in their ongoing projects. We speculate that the introduction of anything new in the process of TNO potentially has the disadvantage of 'something additional, I'm busy enough already' or 'sorry, not interested, not invented here'.

Out of this came four projects in which we applied (or will apply) the Canvas. The Impact Canvas (for short) was used in the practice of TNO projects in four workshops:

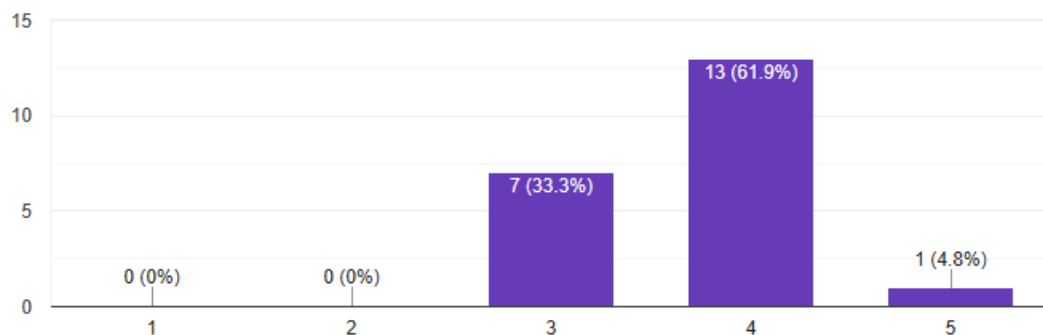
1. October 2018: In a workshop to further define an entire research programme in the area of (sustainable, inclusive) employment, with some 16 participants, in a plenary setting with the Canvas projected on a dry-erase wall, for drawing;
2. January 2019: In a workshop with four participants, the TNO-part of a larger project, which was halfway its projected lead-time (in the domain of logistics, with sensors and algorithms), with the aim to calibrate progress and make further plans;
3. February 2019: In a workshop with six people, mainly outside TNO, during the project proposal phase, second stage (in cybersecurity); many issues were already tackled in the first stage, nevertheless, the workshop gave some fresh insights.
4. March 2019: In a workshop with six people, from TNO, in a project that aims to develop tools to support policy makers, to promote 'circular' building.; the workshop gave them new insights in ways to bridge the gap between delivering outputs and

creating impact in society, and in identifying organizations that would need to be involved in order to create that impact.

Participants (e.g., project leader, business developer, expert, potential client or project partner) in these workshops evaluated both the usefulness and the usability of the Canvas positively (Figure). We used a 5-point Likert-scale to measure this. Most people found the Impact Canvas both *useful* (which refers to the added value of the workshop, e.g., insights gained during the workshop) (7 neutral; 13 useful; 1 very useful) and *usable* (which primarily refers to the Canvas as a visual, creative and collaborative tool) (7 neutral; 10 usable; 4 very usable).

How useful did you find the 'Impact Canvas'? This refers primarily to the added value of the workshop, e.g., insights gained during the workshop.

21 responses



How usable did you find the 'Impact Canvas'? This refers primarily to the usability of the Canvas as a visual, creative and collaborative tool.

21 responses

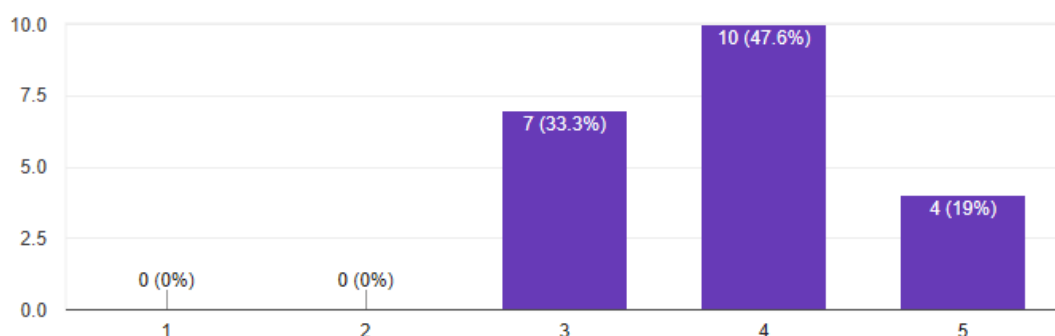


Figure 5: Results of questionnaires with participants of four workshops with the Societal and Ethical Impact Canvas (n=21: 9 from workshop 1; 4 from workshop 2; 4 from workshop 3; 4 from workshop 4)

By making this a canvas from two perspectives (both Ethics & Society) we demonstrate synergy between these two JERRI dimensions.

One example (from workshop 4) can help to illustrate the Canvas' use and added value. The Canvas was used by a team that works in a project that aims to develop tools (models and data) to support policy makers (in municipalities or provinces), to promote 'circular' building. The Canvas did help them to focus on two key questions:

- How to move from the project's output, via outcomes, to creating impact in society? The Canvas helped to focus on the *gap* between output and impact: on the efforts that would be needed to motivate and enable policy makers to adopt and use these tools, so that they can use them in policy making—so that, after a number of years, outside the scope and indeed lead time of the project, the building practices in their municipalities or provinces have indeed become more 'circular'.
- Second: Which partners do we need to create that impact—to move from output to impact? The Canvas helped to identify organizations that would need to be involved, e.g., partners that can frequently deliver practical training programs to support usage of the tools, or partners that can maintain, periodically update and commercially deliver the tools. These activities are typically outside TNO's scope.

Indeed, these two issues (bridge the gap between output and impact, and identify partners needed to jointly create impact) are what the Canvas aims to solve.

Moreover, the work on the Canvas coincided with the introduction of a policy within TNO to make explicit the ambitions of different research programs of the different Units in terms of their contributions to the Sustainable Development Goals (SDGs). This policy is being implemented as per January 2019, which can help the adoption of the Canvas, as this is one of the ways in which one can clarify a program's contribution to the SDGs. As the change agents of JERRI were also involved in the SDG Implementation; the cross benefits on integration were easily found.

An example of how Societal Engagement is integrated into our internal campaign about SDG's is presented below:



Fig 6: Internal Campaign (starting in April 2019) that connects SDG's with societal engagement

Share Best Practices in User Involvement

The work on the Strategy Advisory Councils and on the Societal and Ethical Impact Canvas took longer than originally planned, both in terms of lead time and in terms of budget. As a consequence, we had to decide to minimize the efforts to work on the goal to share best practices in user involvement.

One effort we made was to create a link between user involvement and the introduction of two policies: the introduction of the European Union's General Data Protection Regulation and the associated renewal of TNO-internal policies for privacy and data protection for projects involving people (<https://www.tno.nl/en/about-tno/contact/corporate-legal/privacy-statement/>). The idea was that such policies can tend to be associated to compliance or 'paper work' (boring, irrelevant). The idea was that creating a link to *positive* examples of the practical benefits of involving people in projects would then positively affect people's *perceptions of these policies*. However, it proved hard to create this link.

Another option would have been to ask the Marketing and Communication department to create content on user involvement. This option was not further elaborated because this would be a one-off effort—whereas we are looking for ways to institutionalize such a practice.

6.3.2 Outcomes

Include Societal ('Unusual') Stakeholders in Strategy Advisory Councils

- Almost all SACs² now have one or more societal ('unusual') stakeholders, e.g., from NGOs. The percentage went up from 8% to 12%, and from 4 to 8 in absolute numbers, see also Figure and Figure 7. In addition, the number of people who champion societal concerns, outside NGOs went up; e.g., the chair of one of the SACs is considered a 'rebel' who champions the transition towards sustainability.
- Most SACs are now more divers in terms of gender and age. See Figure and Figure 7. The percentage of women went up from 12% to 21% and from 7 to 14 in absolute numbers. The diversity in age in the period 2015-2017 is not known, although there were no members under the age of forty. The new SACs are more divers in age with 14% of the members under the age of 45, see Figure 7.

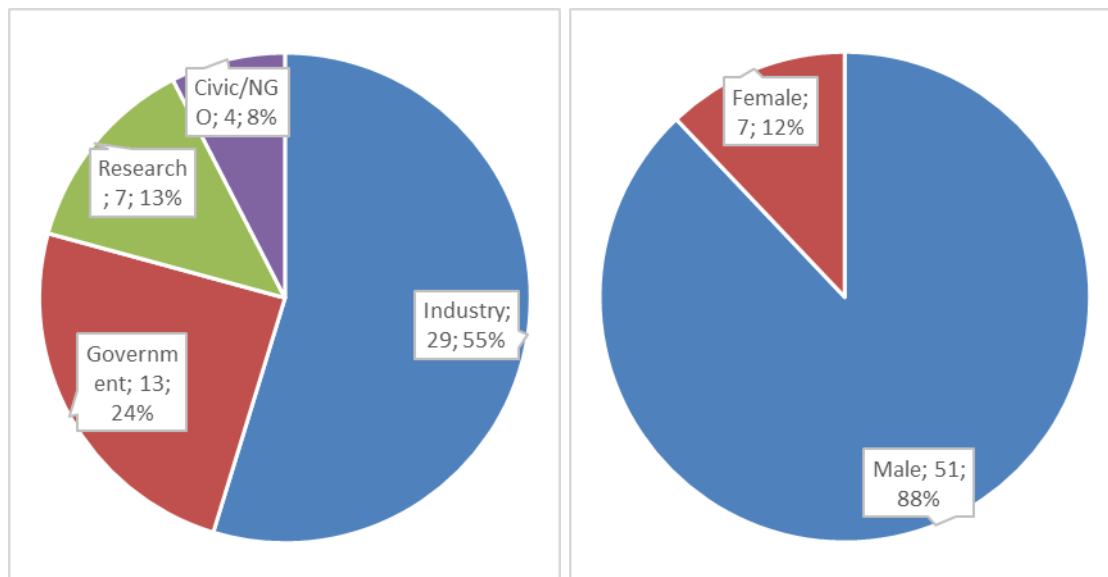


Figure 6: Members of the five Strategy Advisory Councils in the 2015-2017 period (total 58 people): their backgrounds and genders

² Seven of nine SAC's are installed

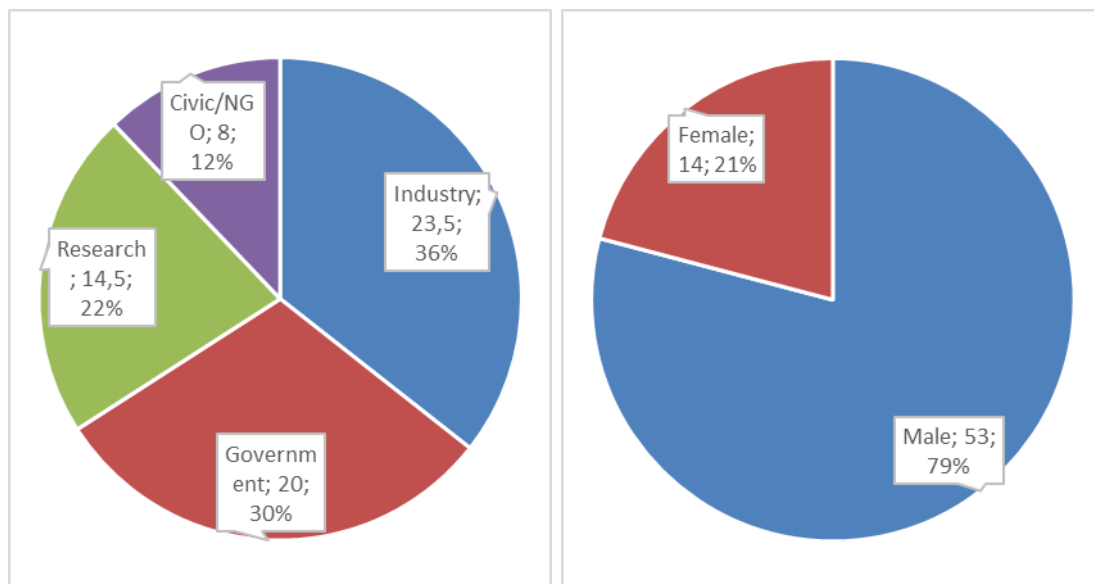


Figure 7: Members of the seven Strategy Advisory Councils for the 2018-2021 period (two Units missing) (total 67 people): their backgrounds and genders

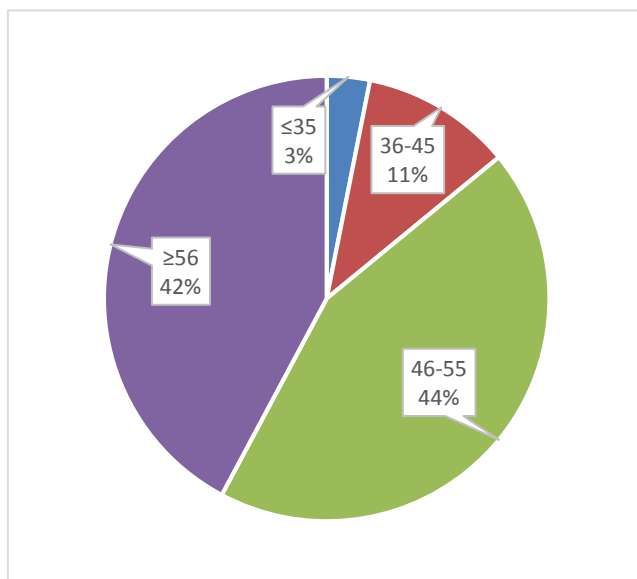


Figure 8: Diversity in age of the Strategic Advisory Councils for the period 2018-2021.

Societal and Ethical Impact Canvas

- A Societal and Ethical Impact Canvas that is ready for use.
- The Canvas was used in 4 projects; and participants evaluated the Canvas as useful and usable.

- Further dissemination will be done, e.g., via project managers (Projectleidersgilde), via lunch meetings introducing an impact on SDG mapping tool and via the (newly formed) network of Innovation Orchestrators (in the SA&P Unit).

Share Best Practices in User Involvement

- No outcomes for this goal, work on this activity was unsuccessful.

6.3.3 Deviations

Include Societal ('Unusual') Stakeholders in Strategy Advisory Councils

There was not much deviation, only the creation of SACs (outside the control of the JERRI project) took longer than expected.

Societal and Ethical Impact Canvas

There was not much deviation, only the further dissemination within TNO and outside TNO needs to be done.

Share Best Practices in User Involvement

This was not successful; no appropriate 'landing place' (institutionalization) was found; moreover, the lead time and budget were spent on other goals.

6.3.4 Deliverables

Include Societal ('Unusual') Stakeholders in Strategy Advisory Councils

- Terms of Reference Strategic Advisory Councils (internal document in Dutch).
- Lists of members of the Strategy Advisory Councils are not yet ready for external publication (some contacts are under negotiations).

Societal and Ethical Impact Canvas

- The canvas can be found on <https://innovationforwellbeing.wordpress.com/>; a high-res pdf can be found on <https://innovationforwellbeing.files.wordpress.com/2018/05/societal-and-ethical-impact-canvas.pdf>.

Share Best Practices in User Involvement

- Not applicable.

6.3.5 Evaluation

The efforts regarding Societal Engagement did deliver practical results. There are more diverse Strategy Advisory Councils with 'unusual' societal stakeholders and there is a Societal and Ethical Impact Canvas, which was proved to be useful and usable (used and evaluated in four projects within TNO).

6.4 Science Education

6.4.1 Experiences

To reiterate what has already been debated and concluded in previous deliverables (see 3.2 & 5.1), this activity has been considered from the start most 'alien' to TNO, as there was no sense of urgency to act towards society as a whole from the perspective of Science Communication (hence: a low level of maturity reported). The already established ways of communicating did not include specific activities (that could be seen as part of Science Education) except from the goal of attracting new talent.

The starting point from the JERRI project (after the completion of the State of Art-report in D1.1) was taken wider; the goal setting and roadmapping process had involved a wider circle of stakeholders (both internal and external) that helped to kick off the implementation activities.

During the execution phase of the project, contingencies played a major (positive and negative) role in the success of the realization of the goals. On a personal level, committed staff left the organization at various moments during the implementation phase. From an organizational level (on top of the reorganization of the organizational model) a full reorganization of the Marketing & Communications department (including new management) on which many of the activities relied, hindered the successful completion of some of the activities. Some of the goals that were initiated by dedicated staff could therefore not be fully finished.

Positive contingencies can also be found; a new initiative on skillstraining for science communication has been taken up as an important topic by a group of trainees. Also, the overarching need to become part of the National Code on Science Integrity played a positive role. The diversification of media (launch of TNO Insights and the podcasts on specific topics) has or could have been attributed to the discussions in the Science Education discussion (goal setting). However, it would be difficult to prove a direct link.

Lessons learned here are that, when key messages for the organisation are taken from a wider base of stakeholders (for example through workshops at the bottom of the organization, in presence of change agents) and eventually, through an elaborate approval process, get widely recognized, reinforced, agreed on in (formal) action and implementation plans, changes will happen both formally (through hard target setting)

and informally (change agents find their own ways of achieving a result). The formal execution of specific tasks can still be considered quite difficult, but the overall message of why and how, is embedded more thoroughly in the organization itself. This has led to other supporting activities that reinforce the overall goal of JERRI.

One opportunity that did not materialize was the exchange of experiences with Fraunhofer. As TNO did contact and tried to exchange with the coordinator in Fraunhofer, but the contact has been one-sided; not once did we receive a reply. During most of the exchange workshops the science education part was assigned to societal engagement.

6.4.2 Outcomes

To Show Science

Goal:

Increase the type, diversity and number of contributions in TNO TIME; this would comprise a shift in written articles to more diversified content (current status 95% articles - 5% interactive) to 75% articles – 25% interactive in 2018.

TNO has changed from TNO TIME to TNO Insight in autumn 2018. The core reasons for this change was the requirement to, one the one hand, realise a new brand name for content based TNO information and on the other hand reposition the content of the information to fit with the requirements of the readers. Starting with the last point; the way in which information is requested has changed; more mobile phone users use the TNO website and more linkages from social media sites (Facebook, LinkedIn) feed directly into the TNO information portal.

There is a change in the type of information that is posted on TNO Insight; an extension with podcasts, video's and visuals has changed the look and feel of TNO Insight. In order to understand whether the result was achieved a series of interviews was conducted with staff (3) directly involved in TNO Insight. An assessment of one of the interviewees guestimate that currently 10%-15% is now interactive content. Reasons why this is lagging behind is that most content is still text based and the content is aimed at a B2B market, where content and display of expertise is deemed more appropriate than interactive ways of communication. Interviewees stated that it is difficult to change this (cultural change) from the perspective of the content owners (specialists). They are used to different ways of communication and do not (yet) see the added value of more visual or interactive content. Interviewees pointed at a need for content owners/specialist to be trained in other ways of communication.

Science communication (additional supportive activity)

To address the previous point, a new activity has been started: Science Communication. This was a trainee project that took place from September 2018- January 2019 where

the most important task was to identify what was required for researchers in terms of training, support or other means to be able to reach a wider audience (not specific science based). The aim was to empower scientist to enjoy making impact and understand their requirements for support (e.g. providing them with skills, tools and assistance). By using the internal Yammer-platform this has resulted in contributions and a wide internal debate (approx. 350 views, 84 votes, 18 content related reactions (January 2019)—see Figure 9).

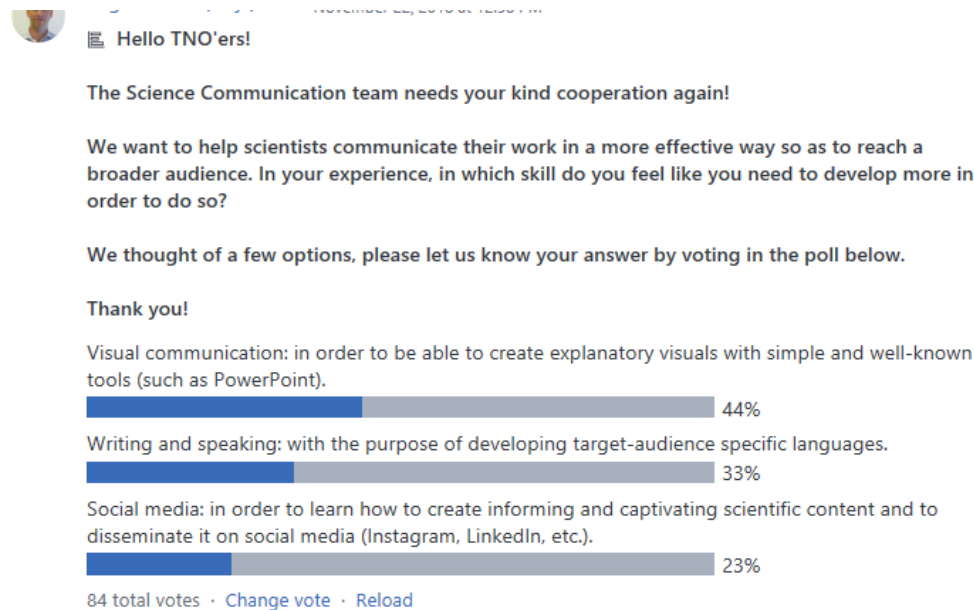


Figure 9: Screenshot of communication on Yammer (internal communication in TNO)

Hard work on the Science Communication trainee project culminated into an entertaining and valuable workshop on how to effectively communicate on your science, creating more impact in the process. Clearly, we cannot teach you how to become an expert on the subject in a single workshop (you can obtain PhD's in the field), but we came up with an inspiring curriculum containing good and bad examples of science communication within TNO, the importance of understanding various levels of language and a masterclass on how to use social media for effectively sharing your work.

Are you intrigued? We still have a couple places left in the workshop! It will take place in the TNO Leeghwaterstraat office on Tuesday February 5th 2019, from 9:00 to 13:00.

The result of the previous action has led to a new initiative for a workshop to test and receive feedback on what would be the most appropriate next steps.

The lessons learned³ were:

..”That is why the Science Communication project team tried to accommodate the first step of reaching out: what are the first steps a TNO’er should take to communicate about their work, to the outside world? In this context, we have developed a workshop on TNO’s communication gems, understandable language and storytelling, in close collaboration with M&C and HR Development. Furthermore, we came up with a handy infographic, showing you in one glance the first questions you should ask yourself when you have decided to reach out. The results of this project are both pragmatic and visionary and will find continuation within established M&C programs.

Simon Sinek, a British-American organizational consultant, developed a simple but useful model for inspirational leadership called the *Golden Circle*. It shows three rings of communication: communicating on the *why*, the *how* and the *what*.. Sinek argues that you convey your message more strongly if you start with why. The project team did this for Science Communication and the resulting circle is stated below:

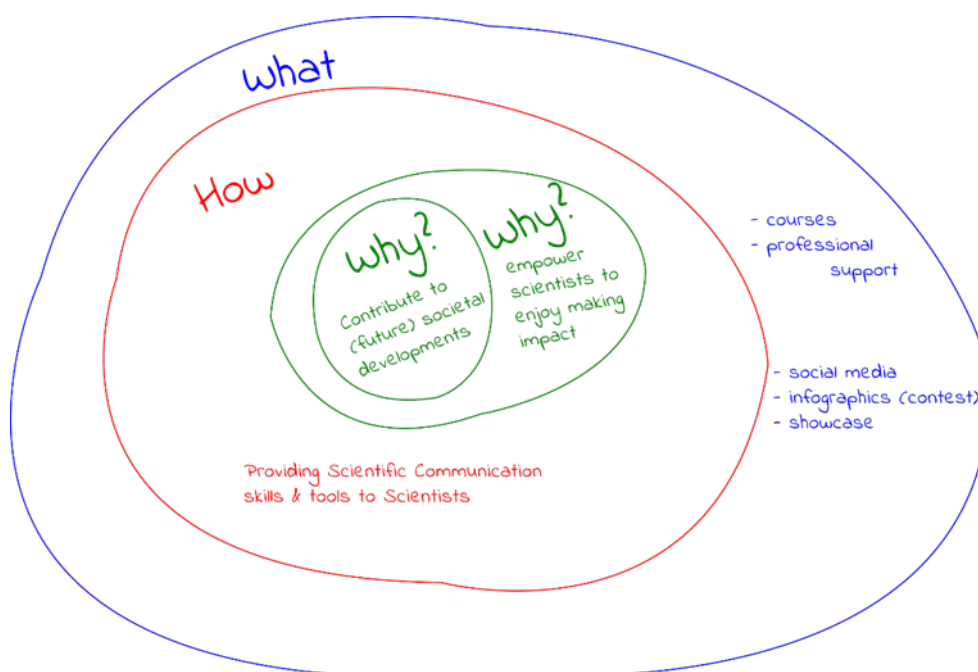


Fig 10 Summary of statements from Science Communication

³ Summary Trainee project “Science Communication” february 2019

This *Why*-statement makes it easier to see why Science Communication is of crucial importance to TNO: it helps TNO contribute to societal developments and it empowers scientists to enjoy making impact.”

The result of this Trainee project has resulted in the inclusion of a science communication workshop (with the help of external trainers) for career development of (primarily) scientist. A leaflet was produced that helps scientist to decide how they could make use of different types of communication (for different audiences and types of media. See Annex 2.

To champion the value of science

- Make a public statement on TNO website how we do projects and are accountable for our scientific integrity in 2018.
- Share at last two sensitive dossiers per year.

In discussions with the newly appointed Science Director (Q1 2018) it was agreed that the best way of achieving the goal of a public statement about the way and the quality of science in TNO was a two folded strategy. First of all the national effort from the Netherlands Academy of Science on a Code on Scientific Integrity was already well underway. This would give opportunity to become part of a national effort, and to join forces with other (national) RTO's, universities and other stakeholders in the field of scientific research. TNO actively help to steer the Code in such a way that the specific Code could be applicable for a RTO.

The second line of activity was to demonstrate ‘how’ TNO would use the new code in its practice. This was done in the form of a public statement which was eventually followed up by TNO in March 2019 with a Proposed Decision which needs formal approval of the Works Council and the Defense Research Council as it eventually affects all staff of TNO⁴:

“In August 2018, the Executive Board indicated its intention to accept and implement the NGWI⁵, subject to the approval of the Defence Research Council and the Works Council.

TNO is motivated to endorse the NGWI because the transparency, integrity and independence of our research are of great importance to TNO's position in society and science.

The NGWI describes the principles, standards and institutional duty of care to perform sound scientific research. Violations and sanctions for non-compliance are also described. Among the relatively new aspects compared to the current standards at TNO is the principle 'as open as possible, as

⁴ Internal Announcement by Executive Board of TNO (14th of March 2019)

⁵ NGWI: Nederlandse Gedragscode Wetenschappelijke Integriteit/ Netherlands Code of Conduct for Scientific Integrity

closed as necessary' with regard to research data and results. Special attention is also paid to entering into joint research with research partners who do not subscribe to the code. This is only possible if there is sufficient confidence that one's own share of the research can be carried out in accordance with the NGWI and that the joint results comply with generally accepted principles of scientific integrity."

The national code on scientific integrity was published on the 14th of September 2018. TNO is one of the signatories [\(link\)](#).

TNO published a public statement on the 14th of September 2018, where it outlines how and when the Code will be implemented [\(link\)](#).

To invite society

- a) Open Day on location
 - b) Managed information portal for society
 - c) Develop relations with crowdsourcing platforms
- a) Both in 2017 & 2018 open days were held during the National Weekend of Sciences. 2017 was a top-down approach (and coinciding with the 85th anniversary of TNO). 2018 was a year where we saw that individual parts of the organization continued to be part of the event, without support from other parts of the organisation. Sometimes because of the location (other parts of the research facilities were open, 1 location), but most times out of a genuine belief and normative emotion that this is just part of 'business as usual' to do this (2 locations). Staff members that participate found this a good way of showing friends, family but foremost interested youth and their parents to demonstrate what applied science is and invite them to participate in little quizzes, games and other activities. The event was highly appreciated by visitors

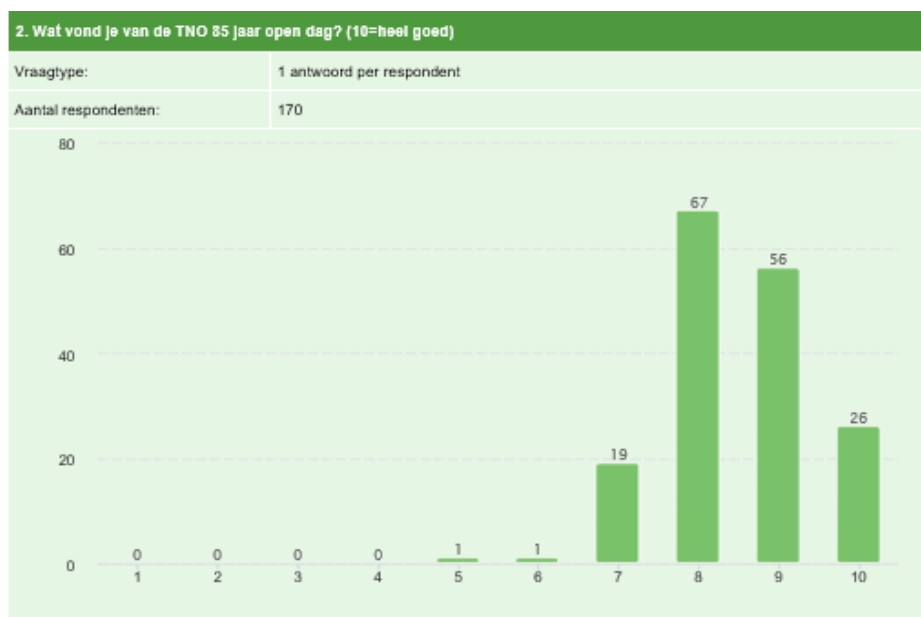


Fig 12 170 respondents rated the event (1 poor – 10 excellent) in 2017 (source M&C Evaluation)

In 2017 approx 2.000 visitors experienced in 12 locations where activities take place in TNO. In 2018 approx 750-800 visitors were counted in 3 locations⁶. For the moment the locations have indicated that they will continue their efforts in the foreseeable future.

b) As part of our engagement with JET-NET schools (by our Marketing & Communications Department), TNO has pro-actively adopted Segbroeck College (a secondary school). TNO has engaged with the school intensively in 2019 to find out more about what secondary schools require and to find out which kind of topics are interesting for a secondary school.

The activities and information that has been collected for Segbroeck, is now open for all secondary schools in the Netherlands. TNO is establishing an information portal to help direct students, scholars and other interested parties to engage pro-actively with TNO. The portal is currently (pre-)filled through 8 examples of interesting topics, guiding research questions and links to find more information. Here students can find, but are also invited to contact TNO research staff. There is an information desk (TNO Wegwijzer), which is already a point of guidance for other questions, that have been instructed how to deal with questions related to the topics in the information portal. In the event of staff changes, students/scholars/interested persons will still be able to get assistance.

The link to the portal is: <https://www.tno.nl/nl/career/profielwerkstuk/>. In the portal we provide scholars from secondary education with interesting topics for their coursework

⁶ Numbers received from M&C Campagne Evaluation (january 2018)

(‘profielwerkstuk’). We have highlighted seven interesting topics (a.o. programming the quantum computer, underwater sounds, circularity in design and construction, light and perception, charging phones everywhere, climate change). Scholars are provided with typical starting questions and some links to additional information. There is an opportunity to get in contact with TNO about these topics via the information desk.

Another initiative to manage information request was introduced through TNO Insights. The idea was to start the building of an informed ‘community’. Hereto a reaction/reply button was added to every contentitem in the webportal of TNO Insight. However, this is not a success, reactions were not always constructive and easy reactions, replies or questions often require lengthy responses. In practice it has proved difficult to keep the original editor or content expert interested to respond to his own contentitem. Also, the original editor /content owner is not always monitoring his/her own articles, so the time to react is relatively slow.

c) The idea to embark on an exploration of how to invite science was enthusiastically taken up by the Marketing & Communications department, but also quickly halted in Summer 2018. After the JERRI goals of Science Education were finalized, the contributors to the workshops took it to themselves to start with a new initiative. A plan was developed for crowd-funding research, done by TNO. This was rather a paradigm shift from a crowd-sourcing approach, as conceived by the Science Education team and in the work shop. Crowd funding would leave the initiative for the research question, approach and methodology with the researchers and only requires funding from ‘the crowd’ for the execution of the research. As a contrast, crowd sourcing would leave the initiative to the ‘crowd’ where TNO researchers would be guiding the efforts and the results would be reaped together.

The two proposed ways (crowdsourcing & crowdfunding) for progressing ‘crowd’ based initiatives were stopped as the two were not able to agree on a joint solution where input and efforts were required from both teams. It was decided to stop the efforts and discontinue.

6.4.3 Deviations

As could be described, not all goals have been achieved (in full) and other activities that support the notion of Science Education (such as Science Communication) have been supported.

To a degree the restructuring of the organization and the following reorganisation of the Marketing & Communications department have led to significant changes in goals and delays in execution.

6.4.4 Deliverables

- Link to TNO Insights

- Link to Landing Page with examples
- Link to Code on Scientific Integrity & TNO statement
- Workshop setup/programme for Science Communication

6.4.5 Evaluation

As discussed earlier in this report, Science Education has started at the lowest level of maturity. The impact created has led to results that have prepared and structured the organization in such a way that the topic and efforts are no longer ad-hoc/unstructured, but to a certain degree institutionalized (see the open days). Through the JERRI project, institutionalization has been attempted, but a fertile landing spot has not been found, due to changes in people and the reorganisation of certain important departments. In this way Science Education remains fragile and is not well institutionalized. The consequences of this will be discussed in D7.2.

This can be further considered when we look at a fundamental question, that has not been properly addressed from a communications perspective: who is our target audience for our website? From a marketing & communications perspective the goal of the website is to help other parts of the organisations to get in contact with prospective customers (B2B). Another function of the website is recruitment. A minor function of the website is to give information about the organisation (legal status, annual reports, contact addresses etc.). A perspective on what we should tell society (or citizens) has not been in focus of the M&C department. With the benefit of hindsight this is a missed opportunity. The scope of the dimension should therefore be more approached from a societal engagement perspective, where we can address this issue of our message to and involvement from society more integrally.

6.5 Open Access

6.5.1 Experiences

IP versus Open Access

In order to achieve a favourable climate for Open Access at TNO, the tension between IP issues on one hand and Open Access goals on the other had to be discussed in the open. That is the reason why our first goal was to establish an Internal Open Science Platform (POS) at TNO.

Need for publication policy

Due to our effort to place OA on the agenda, a need for a publication policy occurred. Parallel to POS a group of scientists around the Chief Science Officer has been busy most of 2018 with the formulation of an overall and new TNO Publication Policy, of which Open Access was a part as well. The Chief Science Officer was the linking pin

between these two teams, and made responsible to ensure that Open Access would be incorporated in the final texts.

Cross-pollination Fraunhofer

Even though the actual solutions cannot always be transplanted from Fraunhofer to TNO or vice versa, the exchange of spirits between the two organizations has helped very much in overcoming various blind spots that occurred in our quest for the final solutions.

Time & Budget

Having sufficient time and budget to prepare, organize and analyze the input of the activities are limiting conditions in order to progress on the open access objectives. Without the JERRI funding, we would not be able to carry out the activities we did as well to create awareness and sense of urgency in TNO that this subject needs and deserves.

Understanding TNO

Implementing open access related activities in TNO asks for understanding the organization culture as well structure. In our experience, understanding this can contribute to develop a starting position that can be seen as a fundament in the process.

Structuring discussions

TNO uses different sets of rules and procedures for numerous activities. They deal with the 'openness' of the research results, or simply put: which info can be made publicly available, outside TNO, and which cannot. Due to the great variety of sponsors, sectors, clauses and funding formulas, the rules and procedures vary wildly as well. As a consequence, policies in place are not always unambiguous or clear. That's why we experienced how important it is to structure the discussion, to separate essentials/main issues from side-issues and to unravel different concepts in Open Access, Open Science, Publication policy, Open Data, Open models and methods.

Limited applicability OS

Open Science is of increasing importance for science and economic growth. That is why government funding programs increasingly impose specific requirements that are motivated by Open Science. In addition, the first experiences at TNO show that in some cases Open Science can have positive effects on market turnover. However, it should be noted that the benefits of Open Science do not apply to all domains and activities of TNO, most important exceptions:

- Research linked to Defence, Security and State Security.
- Contract research for companies.
- (Contract) research that should lead to IP.

6.5.2 Outcomes

Implementation Annual Plan 2018

Establishing an Internal Open Science Platform (POS)

In order to bring rhythm in the process to regularly address Open Science within different layers of the organization a(n) (internal) Platform (POS) was established to facilitate the internal discussion about this subject, in the form of workshops, discussions and conversations. As an outcome, we see that the reasons why TNO should focus on Open Science are shifting. From a state of coercion imposed by the government, there is now a growing awareness that there may also be advantages to pursue Open Science.

Within POS the strategies for a successful Open Access policy in relationship to a healthy IP policy were discussed, as well as different ways of structuring the complex questions around publication decisions in general, and Open Access in particular.

Publication Policy

In Q4 2018 the new proposed policy has been accepted by the TNO Science Board and the Board of Managing Directors. It is now almost ready for implementation. A communication strategy, supported by tooling on the Intranet, is expected to be developed in Q2-3 of 2019.

6.5.3 Deviations

One of the dimension-specific goals for the JERRI project at TNO was the stimulation of Open Access publications in the scientific TNO community. Soon it became clear that the autonomous drive of the scientists was already rather strong enough in itself. This drive accounted for double-digit growth rate figures in Open Access publications in the past four years. However, this growth was not met with the same enthusiasm by top- and middle management at TNO. They saw in this trend serious threats for the IP (intellectual property) of both TNO and its clients. These threats were in fact more related to the risks of untimely publication of scientific findings as such, than to Open Access, which is just a specific method of publishing. But the perceived IP risks of untimely publishing were very present all the same, and the introduction of Open Access made these feelings only stronger. Thus, the only way Open Access could be stimulated at TNO, appeared to be addressing the IP worries in all-encompassing TNO Publication Policy. This policy would serve as a guideline for all of TNO, and its application would ensure that at any given time or place, the 'publish yes/no' decision would be safely and uniformly taken. With the major worries of TNO management addressed, the enthusiasm of the TNO scientists would do the rest, and no additional actions for the stimulation of Open Access at TNO would become necessary. Just a company-wide communication of the publication policy (including a safe guide for Open Access at TNO) would suffice.

Consequently, the goals of JERRI at TNO have moved during the project from a direct stimulation of Open Access to establishing a TNO Publication Policy.

Decision Making Tool

In the Open Access goals for JERRI, the development and implementation of a specific deliverable has been announced. This deliverable consists of a decision making tool for Open Access publishing.

The tool should assist TNO scientists in their choice of publishing (yes/no) and Open Access (yes/no) while deciding on the way they disseminate their final research results to the outside world. It incorporates several complex decision making variables like IPR (intellectual property rights) and Homeland Security (confidentiality,) and the maximizing of impact in the scientific community. In practice, the steps for development and implementation consist of the development of a logical model of a decision making tree. Next, this model should be built into a digital environment, like the TNO City Portal, that runs on Microsoft SharePoint software.

However, recently it has been made clear to the JERRI project team that scientific projects and those responsible for project management are not just confronted with Open Access issues, but with a score of other decision making dimensions too. Examples are for instance the GDPR legislation (privacy issues), our export permits, our data management and the so called Human Research Committee each require similar decision making tools for scientific project managers.

Furthermore, these decision making tools will not just ideally share the same application/software environment, but they will probably also be logically intertwined. That makes the original goal of developing and implementing the Open Access tool within the JERRI context unrealistic in terms of both time and budget. As a consequence, the Open Access dimension of JERRI at TNO chooses to postpone this deliverable. Since the JERRI project is due to end in May 2019, the realization of the Open Access Decision Making Tool will probably be part of other TNO software projects in the near future.

6.5.4 Deliverables

There are no deliverables that can be shared at the moment of writing this report.

6.5.5 Evaluation

Cross-pollination Fraunhofer

Business structure has proved to be a vital element in the differences that TNO and Fraunhofer have encountered in their attempts to introduce and stimulate Open Access in their organizations. TNO staff is centralized, and therefore has direct access to the decisionmakers. At Fraunhofer, the independence of the units/laboratories might call for a different approach towards the organization.

Some 'project surprises' might stem from cultural differences. At TNO, management was hesitant about Open Access at first, but the scientific community was enthusiastic.

Timing

In addition, timing is crucial. That might even call for a healthy bit of opportunism: it might be necessary to piggy-back the Open Access theme on relevant other organizational issues that happen to be top-of-mind. In our case that was IP policy and the introduction of new rules for document security at TNO.

7 Conclusions

In this report we have stated what has been happening with the individual dimensions and their planned activities. We have included the context and contingencies of the organisation and showed how these interact in a dynamic way with the possibility to achieve individual goals. In the previous chapters we have discussed the experiences, outcomes and deviations from the initial plan and we have briefly evaluated on a dimension level our results. We must also conclude that there is an immense overlap between dimension in different activities.

The results of all the JERRI Implementation activities can be summarised through the following figure. This sheet has been used to monitor the progress of JERRI in TNO.




Ethics	Gender	Open Access	Societal Engagement	Science Education
1. Improve Ethical Awareness and Moral Capabilities: A game/training, for top management and for trainees	1. Female leadership training	1. Open Access Platform, Action Plan 2018	1. Involve ('unusual') stakeholders in Strategy Advisory Councils	1. To show science
✓	✓	✓	✓	✗ ✓
2. Ethics in Society: An 'Ethical and Societal Issues tool, for business development and project management	2. Database for female talent	2. Decision Tree on Publishing	2. Societal Impact' tool for project management	2. To champion the value of science
✓	✓	✗	✓	✓
3. Scientific Integrity: An e-learning module, for (principal) scientists, science directors, RM's	3. Implicit Bias Training (25 TOP managers)		3. Share Best Practices in User Involvement	3. To invite Society
✗	✓		✗	✓ ✗
	4. Contribute case to game (Ethics Goal 1)		4. Contribute case to game (Ethics Goal 1)	4. Mutual exchange with FhG
	✗ ✓		✓	✗

✓ Achieved

✗ Not achieved

Fig 13 overview of activities in the JERRI project (april2019)

As can be seen from the above figure, not all individual activities have been fully realised (only two scores were possible). As a result where results have not been realised in full, or are realised through other ways, the outcome can still be qualified in the form of a red cross (not achieved). To compensate for this, we have added additional markings between brackets.

Another way of looking at the results is to see if TNO has managed to achieve an improvement in the maturity level of dimensions. As indicated in paragraph D3.1 fig 2, chapter 5 at the start of the JERRI project we have found the organisation in a certain state.

The same assessment has been taken place at the end of the project (feb 2019). The project team has assessed the status of the dimension and this enables us to compare

the pre- and post situation. The assessment can be seen as a prelude to the institutionalization of JERRI. How successful has the project been in raising awareness, changing habit, structures and processes and can this change be a lasting change.

This gives the following insight into the different dimensions:

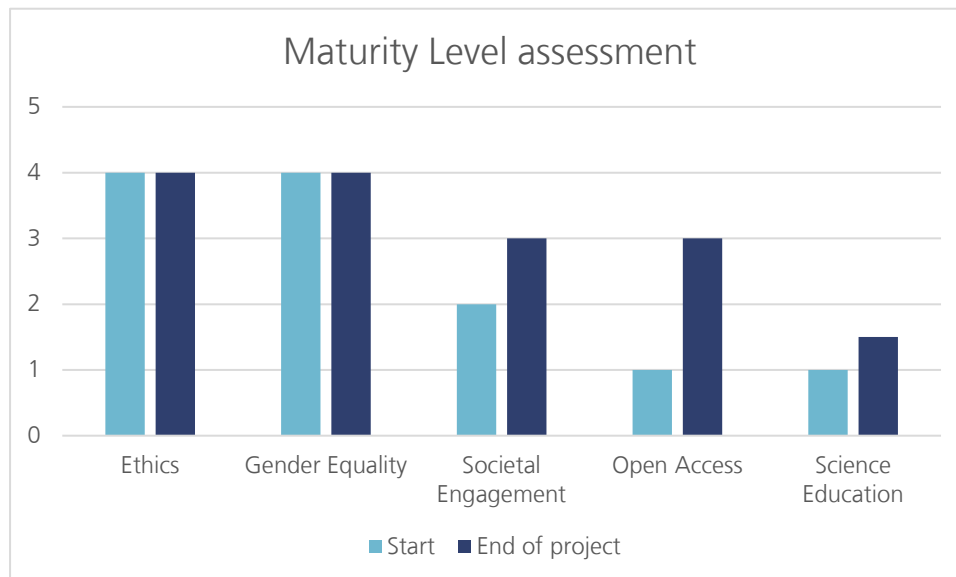


Fig 14 Maturity Level Assessment pre- and post JERRI

1. *Initial*, ad hoc, personal actions
2. *Repeatable*, e.g., documented
3. *Defined*, part of business process
4. *Capable*, e.g., managed with metrics
5. *Efficient*, e.g., including improvement

As we can see from the above figure, most dimensions have either stayed at the same level of maturity or have improved, as a result of contingencies and JERRI activities.

The most improvement has been realised in the dimension of Open Access. The topic has received attention (internal and external), policies have been formulated and progress has clearly been made.

The situation with Science Education is more serious, again contingencies (and lack of continuity, change agents) play a role here. Some activities (Science Communication, Open Days) have had results, are documented and part of the 'system' (being a calendar, a training), more serious attention need to be directed here to make it sustainable.

As discussed, we have seen many overlap in activities between dimensions, most notably for Ethics, Open Access and Societal Engagement and to a lesser degree for gender equality and science education.

- Collaboration between Societal Engagement and Ethics for developing and deploying the Societal and Ethical Impact Canvas;

- Open Access issues were taken up in the development of the Scientific Integrity Code (= dimension Ethics) (D7.1, p. 21);
- Gender/Diversity was integrated in the creation of new Strategy Advisory Boards (= dimension of Societal Engagement);
- Unfortunately, Gender/Diversity was (unintentionally!) not taken up in the development of the Ethics Game for Managers (although that was the plan). Only in the execution phase female advisors were introduced (4 out of 8).

The overlap come about through personal interests of change agents, similar interests or simply because topics need to be answered to integrally.

As a conclusion we can state that the JERRI individual activities have, improved to a certain degree the professionalism of the dimension as such, although contingencies from inside and outside the organisation have played a far greater role than foreseen in the ability to achieve these specific goals and outcomes.

References:

JERRI D1.1 *Synthesis on existing RRI practices*, 2016. Available at <https://www.jerri-project.eu/jerri/results/deliverables/>

JERRI D1.2 *Deepening 'Deep Institutionalisation'*, 2016 (revised 2017). Available at <https://www.jerri-project.eu/jerri/results/deliverables/>

JERRI D3.1 *Concept on organizational RRI goal development: 'How we set goals' (at TNO)*, 2017 (revised 2018). Available at <https://www.jerri-project.eu/jerri/results/deliverables/>

JERRI D3.2 *Description of specified RRI goals at TNO*, 2017. Available at <https://www.jerri-project.eu/jerri/results/deliverables/>

JERRI D5.1 Discussion paper on organizational barriers and enablers for the institutionalization of RRI. Working paper.

JERRI D10.2 Lessons learned for goal development, 2017. Available at <https://www.jerri-project.eu/jerri/results/deliverables/>

TNO, Strategic Plan 2018-2021 Flywheel of Innovations for The Netherlands, Available at: <http://digitalpages.tno.nl/flywheel-of-innovation-in-the-netherlands-strategic-plan-2018-2021/page/1>

TNO Internal Memo, CSR Steering Committee, CSR Strategy 2018-2021; TNO (2018)

TNO PD Approval of National Code for Scientific Integrity (14th of March), TNO Intranet (internal)

TNO Summary Science Education (february 2019)

Annexes

Annex 1 CSR Strategy (in Dutch)

TNO CSR Strategie 2018-2021

TNO heeft sinds 2008 een MVO Stuurgroep en een MVO Officer. Met MVO wordt bedoeld Maatschappelijk Verantwoord Ondernemen. In 2017 is de naam van deze stuurgroep gewijzigd CSR Steering Committee (Corporate Social Responsibility).

Voor de nieuwe strategieperiode 2018-2021 is dit document opgesteld als leidraad voor de komende periode tot en met 2021 en de vorming van een CSR klankbordgroep. Deze CSR klankbordgroep werkt op basis van de CSR Strategie en met behulp van jaarplannen.

Waarom CSR

CSR is één van de onderwerpen die diep in de cultuur van TNO is geworteld. De missie van TNO onderstreept dat: *TNO verbindt mensen en kennis om voor complexe vraagstukken slimme – duurzame - oplossingen te ontwikkelen*, TNO is actief deelnemer in de maatschappij (bijvoorbeeld als oplosser van maatschappelijke uitdagingen, als werkgever, als gebruiker van middelen).

In de CSR Strategie 2018-2021 staat centraal:

- Wat doen we (hoe meten de impact van TNO projecten);
- Hoe wij projecten uitvoeren (op welke manier creëren we die impact op een duurzame manier)?
- Hoe delen we dit in onze organisatie en met onze stakeholders?

Hiermee dragen we bij aan een duurzame lange termijn relatie met onze stakeholders. Die lange termijn relatie is essentieel, omdat het innovatiesysteem (gouden driehoek/triple helix) richting een quadruple helix model verschuift, waarin maatschappelijk actoren en partijen een belangrijkere rol spelen. TNO's 'right to play' vraagt daarbij om continue (her)bevestiging om de rol die wij vervullen van waarde te laten zijn.

Tegelijkertijd heeft de maatschappij verwachtingen over de manier waarop door TNO deze rol wordt ingevuld. Van TNO wordt verwacht dat zij een zogenaamde Responsible

Research & Innovation (RRI)⁷ organisatie is. Dit komt neer op randvoorwaarden en ambities die aangeven hoe het innovatiesysteemmodel kan worden ingericht om de lange termijn balans tussen enerzijds onderzoeksorganisaties en anderzijds haar stakeholders te borgen.

De ambitie van TNO op CSR

De nieuwe strategie van TNO (2018-2021) benoemt een aantal externe drivers voor de focus van TNO. Deze drivers geven de aandachtsgebieden weer waar de noodzaak van innovatie het meest urgent is. TNO kiest er voor in de nieuwe strategieperiode om de impact van het werk waaraan TNO bijdraagt zichtbaar te vergroten.

Economische impact krijgt al aandacht. De maatschappelijk en sociale impact van onze programma's willen we als organisatie beter op de voorgrond plaatsen. De CSR klankbordgroep helpt dit te verankeren in onze dagelijkse praktijk. In 2017 heeft TNO zich gecommitteerd om impact met behulp van de UN Sustainable Development Goals uit te werken.

De manier waarop wij impact bereiken is een belangrijk punt van aandacht. In 2021 willen we significante stappen hebben gezet op een substantieel aantal onderwerpen van onze bedrijfsvoering. Hiervoor gebruiken we de CSR Ambitie ladder (zie bijlage). Daarmee dragen we bij aan de discussie over de manier waarop wij onze bedrijfsvoering duurzamer maken.

Wij geven inzicht in en dragen verantwoording af aan de maatschappij over onze activiteiten o.a. via de transparantiebenchmark en het jaarverslag en betrekken onze stakeholders bij ons onderzoek (onderzoeksagenda en -uitvoering), waar dat mogelijk is. We vertalen onze kennis voor de maatschappij en zijn actief in het maatschappelijk debat (thought leadership) op onze kennispositie. Het doel is dat we op de lange termijn een onmisbare partij zijn en blijven, die gekend wordt door haar toegevoegde waarde voor maatschappij op basis van haar unieke kennis en impact.

Daarbij is de ambitie dat wij als RTO vooropstaan in Nederland en Europa en verbindend willen zijn naar collega-instituten.

De focus van CSR Activiteiten

De CSR klankbordgroep staat een brede aanpak voor. Zij doet dit op verschillende manieren, in interactie met het primaire proces van TNO en in lijn met de nieuwe TNO strategie.

⁷ Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society). RRI rethinks the basic connection between science and society. It emphasizes the multi-dimensional, dynamic, and co-productive ties between different actors of an innovation system, namely science, society, industry and government. (Von Schumburg; 2011, 2012; 2014)

Een belangrijk onderdeel voor de nieuwe strategieperiode is de herijking van het model voor lange termijn waardecreatie. Waarde wordt daarin onder andere vertaald in profit, planet en people en vertaalt zich ook door in de organisatiecultuur en in de materiële onderwerpen waar TNO prioriteit aan geeft⁸.

Onderdeel hiervan is de wens van de Raad van Bestuur om de materiële onderwerpen opnieuw vast te stellen (inclusief prioritering en het ambitieniveau).

De kaders voor de materiële onderwerpen volgen uit:

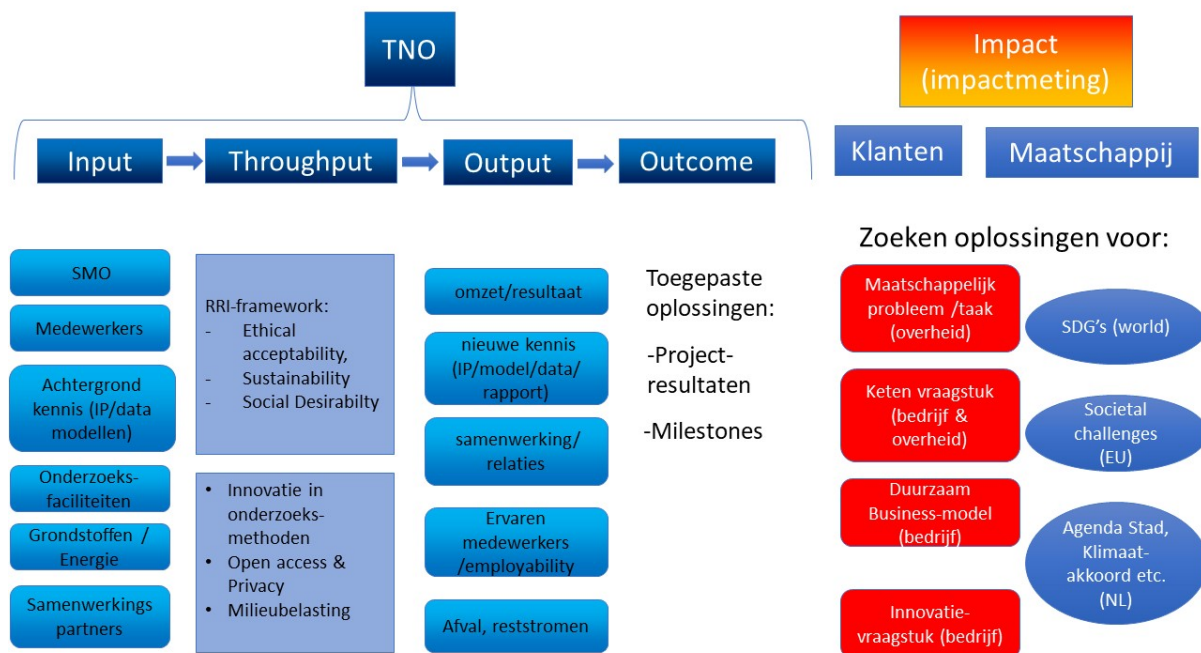
- de TNO Strategie 2018-2021 (inhoudelijke ontwikkelingsrichting) van TNO;
- de TNO Code of Conduct (ontwikkeling van de organisatiecultuur);
- de Corporate Governance code (richtlijnen ten aanzien van bestuur en risicomanagement);
- en wordt mede bepaald door externe factoren (toekomstige wet-en regelgeving die impact heeft op de bedrijfsvoering van TNO).

Dit vraagt om een verkenning en vervolgacties rondom vaststelling van en besturing op de materiële onderwerpen voor de komende strategieperiode en de verslaglegging hierover (periode 2018-2021).⁹

Een ander focuspunt van de CSR klankbordgroep is de impactmeting van onze projecten, de wijze waarop wij invulling geven aan de manier waarop wij onderzoek initiëren, uitvoeren en de resultaten vertalen met behulp van of ten behoeve van onze stakeholders (throughput).

⁸ Conform de Corporate Governance Code 2016

⁹ In bijlage 4 is een procesaanpak uitgewerkt.



De CSR klankbordgroep heeft hier geen hiërarchische verantwoordelijkheid voor, maar is een katalysator en spiegel voor de organisatie. Duidelijk herkenbaar zijn de verschillende niveaus waarop de CSR Klankbordgroep acteert:

Operationeel: Onderwerpen zijn op plaatsen belegd in de organisatie. De CSR klankbordgroep helpt mee te rapporteren (jaarverslag, benchmark, communicatie); De CSR Klankbordgroep helpt mee organisatie-brede thema's te verbinden met de medewerkers (CSR in mindset/ practice what you preach).

Tactisch: CSR Officer helpt mee de organisatie/primaire proces/ondersteunende processen op een hoger ambitieniveau te krijgen (inspireren, aanjagen, verbinden):

Leden CSR klankbordgroep ondersteunen/faciliteren of definiëren projecten;

De rol van de CSR Klankbordgroep

De CSR Klankbordgroep is om twee redenen essentieel; het is een katalysator die binnen en buiten de organisatie het status quo kritisch beschouwt, weegt, nieuwe activiteiten initieert en adviseert aan stakeholders. Daarmee is het een klankbord voor bestuurders, directeuren en medewerkers om die ambities te formuleren en realiseren, die een positieve bijdrage leveren aan de TNO-organisatie, reputatie (als merk, als werkgever, als maatschappelijk actor), cultuur ('CSR in hearts & minds', practice what you preach) en de impact van onze activiteiten in de maatschappij en bij onze klanten (in projecten en als organisatie) zorgvuldig te volgen.

De CSR Klankbordgroep heeft een belangrijke signaalfunctie en lijn met de Raad van Bestuur, via de Market & Strategy Board.

Daarnaast voert de CSR Officer ook zelfstandig projecten en activiteiten uit, zoals onder meer te zien is in het Jaarplan 2018 (zie bijlage 2).

Annex 2 Science Communication

“ I want to communicate the results of my project! ”

What should I do?

...start by answering the following questions:

What do you want to communicate?

Why do you want to communicate your project?

Who is (are) your audience(s)?

Why is it relevant for this audience?

Check the roadmap of your project for TNO's vision and ambition regarding your subject.

Tip!

TNO 

The questions below help you to assess the news value for external communication.
If you tick few to none of the boxes you can always consider internal communication.



Is the topic current? Is it happening now?



Has there been interest in the subject for some time and is there something to add or to refute?
Or
Do you want to deliberately draw attention to the subject?



Is the bringer of the news, a TNO-colleague, an authority on the subject?



Can TNO be the first to bring out the news? Is there a scoop?



Is it a conflict situation that TNO can indicate or on which we can offer a new perspective?



Is there a certain size, speed or other extremes?



Is it something visual? An attractive image always attracts attention.



Positive result? Contact your M&C consultant!

 **TNO**

All employees can place internal news items on TNO's internal systems, like:

- ◊ A Yammer post
- ◊ An intranet news item

Take a look at the back of this page and find 'Internal news' for more information.

Overview of M&C consultants



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*This section will be updated after the reorganisation of M&C.

Look at the back of this page for various types of communication.

Take a look at some of the possible communication means:

WHITEPAPER:

Contact your M&C consultant for advice and communication support.

DESIGN: [PI&Q](#)

CONFERENCE/FAIR:

Contact M&C for advice, communication support and possible project coordination.

PREFERRED SUPPLIER: [Design fair stand](#)

PRESENTATION/ SLIDESHARES:

Can be used without the consultation of M&C.

MORE INFO: [Slideshare.net](#)

POSTER:

Can be used without the consultation of M&C, but M&C can give advice on the message, target group etc.

DESIGN: [PI&Q](#)

INFOGRAPHICS:

Contact your M&C consultant for advice, communication support and possible use of the infographic within TNO channels.

DESIGN: [PI&Q](#)

VIDEO/animation:

Contact M&C for advice, communication support and possible project coordination.

TNO works with [eight contracted video & animation producers](#) who have extensive experience in producing video content on a wide range of topics within TNO's field of work.

BLOG:

Can be used without the consultation of M&C, for example on personal social media channels. Please note the TNO [policy](#) on 'external profiling' and TNO [guidelines](#) on social media.

Contact M&C when you think the blog should be posted on TNO Insights and the TNO social media channels.

SOCIAL MEDIA:

Can be used without the consultation of M&C, for example on personal social media channels. Please note the TNO [policy](#) on 'external profiling' and TNO [guidelines](#) on social media.

Contact M&C when you would like a message to be posted on LinkedIn or Twitter via the official TNO account.

PODCAST:

Contact M&C for information on the possibility to get your story on the podcast of TNO Insights.

PRESS RELEASE:

Carry out the [news value check](#) of M&C and contact them with the result.

TNO.nl/TNO Insights:

Contact M&C for policy and procedures for these external communication means.

INTERNAL NEWS:

All employees can place an internal news item on TNO's internal systems, like a Yammer post or a news item on Intranet.

MORE INFO: [Internal news item](#)

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- Specific audience
(e.g. experts)
- General audience
- Clients
(e.g. deliverables)
- Colleagues