

Evaluation of the Rathenau Instituut 2012-2016

15 December 2017

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Management summary

The Rathenau Instituut's image, position and tasks

All the members of the evaluation committee as well as the respondents and stakeholders consulted, are clearly positive about the overall functioning of the Rathenau Instituut. The Rathenau Instituut's position is seen as unique within the Dutch knowledge landscape and well recognized at the European level; its tasks and the quality of their fulfilment are of utmost importance in times of rapidly changing scientific and technological developments.

The Rathenau Instituut is generally praised for its ability to be impartial. The actual content of its studies is balanced and refrains from recommendations. It is obviously a greater challenge to remain neutral in external communications, but the Rathenau Instituut manages to take an independent stand.

The Rathenau Instituut's unique and critical role is widely acknowledged. Its three core fields of expertise Technology Assessment (TA), Science System Assessment (SciSA) and Information Provisioning are highly acclaimed. Given the broad scope of topics addressed and special position in the knowledge landscape, the Rathenau Instituut's profile is not yet completely clear-cut to the outside world.

Whereas internal logic has prevailed in merging the TA and SciSA functions, the Committee noted that this is not mirrored by stakeholders' expectations. To the outside world, the Rathenau Instituut's three separate functions are still highly relevant and also individually valued.

Contribution to public debate

The Rathenau Instituut exerts considerable influence by (pro)actively shaping social and political debate. One of the Rathenau Instituut's strengths is its ability to identify and select topics that, thanks to their timeliness, attract a great deal of attention. The Rathenau Instituut is clearly visible in public debates, which is particularly on account of its proactive stance. The current strategy to refocus communications on specific topics directly to stakeholders seems to be effective. As organising interaction with the public is one of the most difficult tasks, the Committee therefore recommends formulating a strategic plan for targeting the public at large more effectively. Moreover, the Rathenau Instituut should find ways to implement a broader and more heterogeneous portfolio of social media applications for two-way communications. Important input is to pick up 'soft signals' and (re)act on these signals.

Contribution to shaping political opinion

The relationship with Parliament is vital for the existence of the Rathenau Instituut. In recent years, the Rathenau Instituut has strengthened relations with both houses of the Dutch Parliament and with the European Parliament. In response to the previous evaluation committee's recommendation, the Rathenau Instituut has increased its efforts to inform and support MPs. The contacts with Parliament are both formal and informal, direct and indirect.

Since 2015, the Rathenau Instituut's visibility in the political debate and its impact has clearly increased, but there is still a lot of scope for further growth. While acknowledging that the Rathenau Instituut relies very much on being on the receiving end, the Committee recommends that the Rathenau Instituut continues to strengthen its formal contacts with Parliament and informal contacts with MPs and their staff across the entire political spectrum, and finds other innovative ways to have dialogues with Parliament about pressing issues relating to science and technology. The Committee also strongly recommends that the Rathenau Instituut continues broadening its area of work beyond the Ministry of Education, Culture & Science (OCW) policy domain.

Scientific quality

The Rathenau Instituut is well respected for the quality of its (research) work. Because the Rathenau Instituut is not purely a research Rathenau Instituut, it should not be judged on the basis of strict academic criteria. Due to the lack of an evaluation protocol and clear evaluation criteria on which the scientific quality of the Rathenau Instituut's work can be judged, the evaluation committee found it difficult to give a more detailed and well underpinned opinion on the scientific quality of the Rathenau Instituut's work.

The same applies to the scientific review system used for projects, which needs to be more transparent for outsiders. According to the Committee, it is vital for the legitimization of the Rathenau Instituut, to be explicit about how the quality assurance process is organized and what kind of peer review system is in place.

Regarding the required knowledge base, the conclusion is that the Rathenau Instituut in general has sufficient in-house knowledge to fulfil its main tasks. The core competencies of TA and SciSA experts are to elucidate the societal effects of scientific and technological development, and to analyse and describe the dilemmas and choices involved. The Rathenau Instituut's staff has these competencies. However, complementary knowledge from other research institutes is often needed, depending on the particular knowhow that is lacking to cover the full scope of the research questions in each project. The Rathenau Instituut should therefore continue to strengthen its collaboration with research institutes at home and abroad that have relevant complementary knowledge.

Information function for the science system

The information function was formerly focused on internal use, that is to say providing both Technology Assessment and Science Systems Assessment with quantitative information. Recently, the information function has been defined as a strategic theme in its own right and has consequently acquired a clear external profile.

The work of the information unit is praised unanimously. In a relatively short period of time, the Rathenau Instituut has become an authoritative source for Science & Technology (S&T) statistics. The high degree of confidence in the figures produced by the Rathenau Instituut is evidenced by the fact that they are used by all major stakeholders in the S&T (policy) field.

The Rathenau Instituut is encouraged to expand the information function by increasing the use of statistical information in a broader range of studies, e.g. in Technology Assessment studies. The highly valued information function can be linked to more projects than at present. This also implies more focus on the methodological justification of the statistics used.

Position within KNAW

Ever since its inception in 1986, the Rathenau Instituut has been part of the Netherlands Academy of Arts and Sciences (KNAW), which is operationally responsible for the Rathenau Instituut. The Rathenau Instituut's constitution resolution designed for the Rathenau Instituut states that KNAW guarantees the independent functioning of the Rathenau Instituut. Thus, while the Rathenau Instituut is currently part of the legal entity KNAW, KNAW has no control over the content and quality assurance of the Rathenau Instituut's studies.

The Committee has consulted extensively both the Ministry of OCW and KNAW on this issue. The current institutional arrangement for the Rathenau Instituut within KNAW is acceptable for the Rathenau Instituut, but no longer for KNAW. The main reason is that because the Rathenau Instituut is not a basic research institute, it therefore does not fit in with KNAW's mission.

After weighing up all the alternative options, the evaluation committee concluded that the best solution for the Rathenau Instituut would be to maintain the current organisational and administrative arrangement under KNAW, but no longer under the responsibility of KNAW. The Rathenau Instituut needs to establish a foundation and attune the current relationship with KNAW accordingly. This also implies that the Rathenau Instituut will operate under its own name, identity and brand and no longer be referred to as a KNAW institute. Given the Rathenau Instituut's possible transition to an independent foundation, the evaluation committee takes the view that the upcoming portfolio evaluation of all KNAW and NWO Institutes would no longer be relevant to the Rathenau Instituut.

Samenvatting in het Nederlands

Imago, positie en taken van het Rathenau Instituut

Alle leden van de evaluatiecommissie, de geraadpleegde respondenten en belanghebbenden zijn duidelijk positief over het algemene functioneren van het instituut. De positie van het Rathenau Instituut wordt gezien als uniek binnen het Nederlandse kennislandschap en wordt erkend op Europees niveau. De taak van het Instituut en de kwaliteit van de uitvoering ervan zijn van groot belang in tijden van snelle veranderingen in wetenschappelijke en technologische ontwikkeling.

Het Instituut wordt over het algemeen geprezen om zijn vermogen om boven de partijen uit te stijgen. De feitelijke inhoud van de studies is evenwichtig en men onthoudt zich van aanbevelingen. Hoewel het in de externe communicatie een grotere uitdaging is om neutraal te blijven, slaagt het Instituut erin om een onafhankelijk standpunt in te blijven nemen.

De unieke en kritische rol van het Rathenau Instituut wordt algemeen erkend. De drie kerncompetentiegebieden Technology Assessment (TA), Science System Assessment (SciSA) en informatievoorziening worden alom geprezen. Gezien de brede scope van de behandelde onderwerpen en de bijzondere positie in het kennislandschap is het profiel van het instituut voor de buitenwereld nog niet helemaal duidelijk.

Bij het samenvoegen van de TA- en SciSa-functies lijkt de interne logica te domineren. De Commissie merkt op dat dit niet wordt weerspiegeld in de verwachtingen van de stakeholders. Voor de buitenwereld zijn de drie afzonderlijke functies van het Instituut nog steeds zeer relevant en worden ze ook individueel gewaardeerd. Het risico bestaat dat de traditionele functie van TA verdrongen wordt door de SciSA- en informatievoorzieningsfunctie.

Bijdrage aan het publieke debat

Het Rathenau Instituut heeft een aanzienlijke invloed door (pro)actief vorm te geven aan het maatschappelijk en politiek debat. Eén van de sterke punten van het instituut is het vermogen om tijdig onderwerpen te identificeren en te selecteren die op dit moment veel aandacht hebben. Het Rathenau Instituut is duidelijk zichtbaar in het publieke debat. Dit is met name te danken aan de proactieve houding. De huidige strategie om de communicatie over specifieke thema's vooral te richten op directe stakeholders lijkt zeer effectief. Eén van de moeilijkste dingen blijft echter om de interactie met het grote publiek te organiseren. De commissie beveelt daarom aan om een strategisch plan op te stellen waarin wordt beschreven hoe het grote publiek doelgericht kan worden benaderd. Daarnaast moet het instituut manieren vinden om een breder en heterogener portfolio van social media-applicaties voor tweerichtingscommunicatie te implementeren. Belangrijk aandachtspunt daarbij is het opvangen van 'soft signals' en het (proactief) handelen op deze signalen.

Bijdrage aan het politieke debat

De relatie met het Parlement is van vitaal belang voor het Rathenau Instituut. In de afgelopen jaren heeft het Instituut de relatie met zowel de Nederlandse Tweede Kamer als het Europees Parlement verstevigd. In reactie op de aanbeveling van de vorige evaluatiecommissie heeft het Instituut zijn inspanningen opgevoerd om de leden van het Parlement te informeren en te ondersteunen. De contacten met het Parlement zijn zowel formeel als informeel, direct als indirect.

Hoewel de zichtbaarheid van het Instituut vanaf 2015 is toegenomen, blijft er aanzienlijke ruimte voor verbetering. Hoewel de commissie erkent dat het instituut zeer sterk afhankelijk is van de ontvangende kant, beveelt zij het Instituut aan om de formele contacten met het Parlement en de informele contacten met parlementsleden in het hele politieke spectrum te blijven versterken, en om andere innovatieve manieren te vinden om met het Parlement (ook griffies en werkgroepen) in dialoog te treden over urgente kwesties die verband houden met wetenschap en technologie. Het Instituut wordt

ook sterk aanbevolen om zijn werkterrein verder uit te breiden buiten het beleidsdomein van het Ministerie van Onderwijs, Cultuur en Wetenschappen (OCW).

Wetenschappelijke kwaliteit

Het Rathenau Instituut wordt zeer gewaardeerd om de kwaliteit van zijn (onderzoeks)werk. Omdat het instituut niet een onderzoeksinstituut pur sang is, moet het niet worden beoordeeld op basis van strikte academische criteria. Door het ontbreken van een evaluatieprotocol en duidelijke evaluatiecriteria aan de hand waarvan de wetenschappelijke kwaliteit van het werk van het Instituut kan worden beoordeeld, had de evaluatiecommissie problemen om een meer gedetailleerd en goed onderbouwd advies te geven over de wetenschappelijke kwaliteit van het werk van het Instituut.

Hetzelfde geldt voor het systeem van wetenschappelijke review, dat transparanter moet zijn voor buitenstaanders. Volgens de commissie is het van essentieel belang voor de legitimatie van het instituut om duidelijk te maken hoe het proces van kwaliteitsborging en het peer review systeem zijn georganiseerd.

Wat de vereiste kennisbasis betreft kan worden geconcludeerd dat het Rathenau Instituut over voldoende kennis beschikt om zijn hoofdtaken uit te voeren. De kerncompetenties van TA- en SciSA-deskundigen zijn om de maatschappelijke effecten van wetenschappelijke en technologische ontwikkeling helder te beschrijven en om de bijbehorende dilemma's en keuzes in kaart te brengen. Het personeel van het instituut beschikt over deze competenties. Er is echter vaak aanvullende kennis van andere onderzoeksinstituten nodig, afhankelijk van de specifieke inhoudelijke kennis die ontbreekt om het volledige bereik van de onderzoeksvragen in elk project te bestrijken. Het instituut moet daarom de samenwerking blijven versterken met onderzoeksinstituten in binnen- en buitenland die deze relevante complementaire kennis hebben.

Informatiefunctie voor het wetenschapssysteem

De informatiefunctie was tot nu toe vooral gericht op intern gebruik, dat wil zeggen om kwantitatieve informatie te leveren voor zowel Technology Assessment als Science Systems Assessment. De informatiefunctie is recent als een op zichzelf staand strategisch thema gedefinieerd en heeft een duidelijk extern profiel gekregen.

Het werk van de informatie-unit wordt unaniem geprezen. In relatief korte tijd is het Rathenau Instituut uitgegroeid tot een gezaghebbende bron van wetenschaps- en technologiestatistieken. Een indicatie voor het grote vertrouwen in de cijfers die door het Instituut worden geproduceerd blijkt uit het feit dat zij door alle belangrijke stakeholders op het gebied van wetenschap en technologie(beleid) worden gebruikt.

Het instituut wordt aangemoedigd om de informatiefunctie uit te breiden door het gebruik van statistische informatie in een breder scala van studies (zoals TA-studies) te vergroten. De informatiefunctie wordt zeer gewaardeerd en kan aan meer projecten worden gekoppeld dan op dit moment het geval is. Dit betekent wel dat er meer aandacht moet worden besteed aan de methodologische verantwoording van de gebruikte statistieken.

Positie binnen KNAW

Het Rathenau Instituut maakt sinds de oprichting in 1986 deel uit van de Nederlandse Academie voor Kunsten en Wetenschappen (KNAW). De KNAW is operationeel verantwoordelijk voor het instituut. In het Instellingsbesluit van het Rathenau Instituut is bepaald dat de KNAW de onafhankelijke werking van het instituut garandeert. Hoewel het Instituut momenteel deel uitmaakt van de rechtspersoon KNAW, heeft KNAW dus geen controle over de inhoud en kwaliteitszorg van de studies van het Rathenau Instituut.

De commissie heeft over deze kwestie uitgebreid overleg gevoerd met zowel het Ministerie van Onderwijs, Cultuur & Wetenschap (OCW) als met de KNAW. De huidige inbedding van het Rathenau Instituut binnen de KNAW is aanvaardbaar voor het Rathenau Instituut, maar is dat niet meer voor de KNAW. De belangrijkste reden is dat het Rathenau Instituut geen fundamenteel onderzoeksinstituut is en dus niet past in de missie van de KNAW.

Na evaluatie van alle mogelijke alternatieven is de evaluatiecommissie tot de conclusie gekomen dat de beste oplossing voor het instituut is om de huidige organisatorische en administratieve ophanging onder de KNAW te handhaven, maar deze niet meer onder de juridische verantwoordelijkheid van de Academie te laten vallen. Het instituut zal daartoe een stichting moeten oprichten en de huidige relatie met de KNAW daarop moeten afstemmen. Het houdt ook in dat het Rathenau Instituut onder eigen naam, identiteit en merknaam zal opereren en niet langer als KNAW-instituut wordt vermeld. Gegeven de transitie naar een onafhankelijke stichting is de evaluatiecommissie van mening dat de komende portefeuille-evaluatie van alle KNAW- en NWO-instituten niet meer relevant is voor het Rathenau Instituut. Dit standpunt wordt onderschreven door de KNAW.

1. Introduction

1.1 Background

The Rathenau Instituut is the Dutch institute for ‘Technology Assessment’ and ‘Science System Assessment’. Its task is to stimulate political and societal debate on science, technology and innovation. To do so, the Rathenau Instituut organizes dialogue between stakeholders, engagement with politicians and the public at large, and can conduct or commission its own research.

The precursor to the Rathenau Instituut – the Netherlands Organisation for Technology Assessment (NOTA) – was set up by the Dutch Minister of Education and Science in 1986 to broaden the decision-making powers surrounding science and technology. In 1994, NOTA was renamed Rathenau Instituut. It originally focused on studying developments in science and technology, in order to clarify at an early stage any related social and ethical issues, so that all stakeholders could take part in the relevant discussions. The Rathenau Instituut identifies the differing views regarding new developments, allowing decisionmakers to take these aspects into account. This field of expertise is called Technology Assessment (TA). Besides TA, the Rathenau Instituut was given a second task, Science System Assessment (SciSA), in 2004. This involves researching and developing insights and knowledge on how the science system functions, in order to underpin and broaden science policy.

The Rathenau Instituut contributes to public debate and political judgement on issues related to or arising from scientific and/or technological developments, involving the ethical, social, cultural and associated legal aspects. As science and technology have such a fundamental impact on our knowledge society, their role should be properly organised, and decisions not left to the experts alone. In a democratic society, it is important to recognise that this discussion is inclusive. The Rathenau Instituut also has the explicit task of supporting the Dutch House of Representatives and Senate in their debates on and assessment of science and technology.

1.2 Aim of the assessment

Every five years, the efficiency and effectiveness of the Rathenau Instituut are assessed by an external evaluation committee according to the constitution resolution formulated by the Ministry of Education, Culture & Science (hereafter: OCW).¹

In August 2017 an evaluation committee² was established by OCW to assess the Rathenau Instituut’s performance during the period 2012-2016. The Ministry asked the committee to consider the following five topics³:

- 1) the contribution made by the Rathenau Instituut to **public debate** on issues related to or resulting from scientific and technological developments and the Rathenau Instituut’s position in society;
- 2) the contribution made by the Rathenau Instituut to **support policy making and political decision making** on issues related to or as a result of scientific and technological developments, and more specifically the Rathenau Instituut’s contributions to both houses of the Dutch Parliament and to the European Parliament;
- 3) the Rathenau Instituut’s contribution to **increasing the understanding of the science system’s functioning** and to science policy and political assessment in both houses of the Dutch Parliament;

¹ Article 8 Instellingsbesluit Rathenau Instituut (OWB/FO/13-825).

² See annex 5.1 for the composition of the Evaluation Committee.

³ Ministry of Education, Culture and Science, Decision establishing the Rathenau Instituut Evaluation Committee 2017.

- 4) the **scientific quality** of the Rathenau Instituut's work, considering that in accordance with the Constitution resolution establishing the Rathenau Instituut, it can only carry out (or commission) research for the purpose of the tasks specified in Section 3 of that resolution; and
- 5) **the Rathenau Instituut's position** within the Netherlands Academy of Arts and Sciences (KNAW, "the Academy") as regards its independent role and impartiality.

1.3 The evaluation committee's approach

All KNAW institutions are evaluated based on a generic protocol (the so-called SEP protocol).⁴ Although the Rathenau Instituut is a *de jure* KNAW Rathenau Instituut, due to its unique mission, it is not a *de facto* academic research organisation. For that reason, the Rathenau Instituut decided not to use either the SEP protocol or an alternative formal protocol in its self-evaluation⁵ describing its activities and modus operandi during the review period 2012 - 2016.

Thus, the Committee had no protocol at its disposal, and therefore no clearly defined indicators to assess the Rathenau Instituut's performance in the five topics defined by OCW.

The Committee heavily relied on the information supplied in the Rathenau Instituut's self-assessment report. The Rathenau Instituut also provided a quantitative overview of key figures⁶ and two quantitative studies it had recently commissioned: respectively a survey on the Rathenau Instituut's image among stakeholders⁷ and a media analysis⁸. The Committee has also done its own background research on publications, exposure in the media and in Parliament and on the educational background of the Rathenau Instituut's staff. In addition, the Committee set up its own limited assessment of scientific quality by asking three external reviewers to each assess one of the Rathenau Instituut's five key publications.⁹

A site visit took place at the Rathenau Instituut's premises in The Hague on 13 September 2017, with a preparatory meeting on the previous evening. The plenary committee received various groups of internal stakeholders (management team, board, researchers) and external stakeholders throughout the day.¹⁰ The consultation with external stakeholders was organised as dedicated sessions for each of the five previously mentioned topics, except scientific quality, which was a recurrent topic in all the sessions.

Six external stakeholders who could not attend the site visit were consulted separately by the committee chair and/or secretary in a second interview round. All five topics were discussed during these interviews. The compiled reports of meetings and individual interviews were all approved by the interviewees and attendees of these meetings.¹¹ Moreover, the chair and secretary of the committee carried out three exploratory interviews with representatives of OCW (the *de jure* contractor for this evaluation) and two with representatives of the Royal Netherlands Academy of Arts and Sciences (KNAW; hosts the Rathenau Instituut). These interviews focused on the final topic, namely **the Rathenau Instituut's position** within KNAW.

⁴ <https://www.know.nl/nl/actueel/publicaties/standard-evaluation-protocol-2015-2021>

⁵ Rathenau Instituut (2017) Zelfevaluatie 2012-2016 (25 July; English version 4 September 2017).

⁶ Rathenau (2017). Key Figures 2012-2016.

⁷ Berenschot (2017). Imago onderzoek 2017 Rathenau Instituut

⁸ Technopolis (2017). Meltwater analysis Rathenau Instituut. Appendices 5.4 and 5.5 contain the main study results.

⁹ See the final part of Appendix 5.2 ('Peer reviews').

¹⁰ The site visit agenda is in Appendix 5.3.

¹¹ The discussion partners are listed in appendix 5.2 and are hereafter referred to as 'respondents'.

A final draft was submitted to the Rathenau Instituut and their comments have been taken into account in the final version of the evaluation report.

1.4 Reading guide

The five topics or evaluation questions as stated in the OCW assignment, are discussed in individual sections in chapter 5. These sections are preceded by an overall assessment and an additional section on the Rathenau Instituut's image, position and tasks.

Every section has a similar structure, describing in turn the following aspects:

- The Rathenau Instituut's perspective
 - Based on the self-assessment and statements made during the site visit by members of the board, management team and/or staff.
- The respondents and stakeholders' views
 - Based on statements made during interviews and during the site visit, and on additional background reports provided by the Rathenau Instituut.
- The Committee's conclusions
- The Committee's recommendations.

2. Context of the Rathenau Instituut in 2016¹²

Over the course of more than thirty years, the Rathenau Instituut has acquired a strong and autonomous position. Stakeholders describe it as an expert, independent Rathenau Instituut that clarifies the links between developments in science and technology and their impact on society, and in a scientifically responsible manner. The Rathenau Instituut determines its own work programme based on current developments, but also responds to issues raised by stakeholders.

In the past five years, the Rathenau Instituut's expertise has been sought on current topics such as digitisation in the field of healthcare, robotics, innovation policy and the dynamics of industrial R&D, research funding, public participation concerning the storage of nuclear waste, and Dutch National Research Agenda priorities. That is a broad and varied range of topics, demonstrating the importance of science and technology for society and the Rathenau Instituut's crucial mission.

Apart from TA, in 2004 a second field of expertise was added, namely to improve the understanding of the functioning of the science system (*Science System Assessment*, SciSA), integrating and making the available data accessible and collecting missing data (*'Information Provisioning'*). The latter field was scaled up in 2012. Until 2016, TA and SciSA were set up as two separate units within the organisation but they have now been merged and jointly reorganised into five core areas of expertise. The STI information function has remained a separate (sixth) area of expertise.

Based on the 2011 evaluation, the Minister of Education, Culture and Science presented the cabinet's reaction to the evaluation¹³ and conveyed a number of standpoints regarding strategic developments for the Rathenau Instituut:

- The Minister encourages the establishment of concrete agreements with Parliament regarding the Rathenau Instituut's role for Parliament.
- The TA unit should primarily focus on 'disruptive technologies' and 'socio-technical systems'. Furthermore, it is important that people better understand the conditions under which technological solutions for societal problems are actually accepted.
- The Minister agrees with the committee that there is no reason to relocate the SciSA task elsewhere.
- The Minister does not accept the previous evaluation commission's recommendation to have two separate communication strategies for TA and SciSA. Instead, the Minister suggests the Rathenau Instituut highlights the generic qualities of reliability and impartiality to enhance its public image. Subsequently, the most effective communication strategy should be applied for each theme.
- The Minister greatly appreciates that host organisation KNAW has endorsed the independent substantive functioning of the Rathenau Instituut.

¹² Much of the information in this chapter is taken from the Rathenau Instituut's self-assessment report.

¹³ Reactie evaluatierapport Rathenau Instituut, 20 June 2013 (Ministry of OC&W, ref.no. 517457)

3. Findings

3.1 Overall assessment of the functioning of the Rathenau Instituut

All the members of the evaluation committee and the respondents and stakeholders who were consulted, are clearly positive about the functioning of the Rathenau Instituut. They highly value the quality of the work of the Rathenau Instituut and its active contributions to public debate and political judgement on science and technology issues, as well as the work carried out on Science System Assessment and the Rathenau Instituut's STI information function.¹⁴ The Rathenau Instituut's position is seen as unique within the Dutch knowledge landscape and well recognized at European level; its tasks and the quality of their fulfilment are of utmost importance in times of rapid changes in scientific and technological developments. When asked, the respondents and the evaluation committee gave Rathenau very positive scores.

Given these overall positive conclusions, the recommendations formulated below should be seen as suggestions for further improvement and to support the Rathenau Instituut's valuable work.

3.2 The Rathenau Instituut's image, position and tasks

From the Rathenau Instituut's perspective

The Rathenau Instituut's **vision** is that, science, technology, and innovation are essential for well-being, prosperity and innovation within society.

The Rathenau Instituut's **mission** is to connect science, technology and society by encouraging public and political debate and decision-making on the social aspects of science and technology. In particular, the Rathenau Instituut provides the basic elements for formulating political opinion in Parliament.

The Rathenau Instituut's aim is to place the social aspects of new science, technology, and innovation on the agenda, to promote public and political debate of those aspects, and to support the relevant political decision-making and policy-making.

The **distinctiveness of the Rathenau Instituut** is that it focuses on science in the public interest and parliamentary assessment of science, technology and innovation and their societal consequences. The public perspective is the starting point for the Rathenau Instituut's work, in terms of both the individual and collective impacts on society and on citizens. The Rathenau Instituut fulfils three functions:

1. The Rathenau Instituut has an **agenda-setting** role within public and political debate regarding the societal aspects of science, technology and innovation. It draws attention to trends in science, technology and innovation and investigates their current or future potential significance for citizens, companies, institutions and the authorities. In doing so, it is placing itself at the forefront of new developments. It conducts relevant research and engages with a large range of stakeholders, from ministries to companies and from environmental or consumer organisations to scientific experts. It does this both nationally and internationally.
2. The Rathenau Instituut **encourages public and political debate on disputed STI** within society. It attempts to clarify all aspects of new scientific and technological developments and relate them to the diverse views. It deliberately seeks out areas of tension in an attempt to clarify them. Thereby, it does not restrict itself to the rational, technical or functional aspects. Consequently, it contributes to the effective embedding of new technologies and innovations. Biotechnology, for example, can increase food production and reduce the depletion of natural

¹⁴ Note that respondents often had a clear view on *either* TA or SciSA; especially those who value the Rathenau Instituut for its SciSA work are very positive, but do not have a good view of the TA domain.

resources, but this also affects other values such as how we deal with animals and ecosystems as well as the issue of who determines what we eat.

3. The Rathenau Instituut has the further task of providing **support**, in the form of expertise and information, for political decision-making and policy-making regarding science, technology and innovation. The Rathenau Instituut has key knowledge and information about the functioning of the science system and strives to be better than any other party at integrating the available data and making it accessible, and collecting the missing data. The Rathenau Instituut is tasked with providing information – both solicited and unsolicited – to the Dutch government and parties within the knowledge landscape.

To achieve the above objectives, the Rathenau Instituut combines expertise on the knowledge landscape – consisting of the entire body of higher education institutions, public knowledge organisations, companies, and civil-society organisations, which interact to generate new knowledge – with expertise on specific knowledge practices and the actual embedding of science, technology and innovation in society. This combined expertise of both the knowledge landscape and specific scientific practices enables the Rathenau Instituut to analyse issues from all perspectives and make them manageable.

The Rathenau Instituut's point of departure is that it works from a public perspective, focusing on new developments affecting society as a whole. It does not have any private interest or stake in the topics it investigates and about which it initiates debate. The Rathenau Instituut stresses that it only describes the issue at stake and from the various stakeholders' perspectives. Subsequently, it advocates describing the full range of options so that citizens and politicians can make well-informed assessments. The Rathenau Instituut does not give recommendations because this would force it to choose positions. However, it is required to ensure that the results of its work are of clear relevance to public and political debate.

It is therefore crucial for the Rathenau Instituut's modus operandi and for the impact of its work, that the Rathenau Instituut operates independently regarding actual substance. This certifies its credibility as an Rathenau Instituut that can speak with authority about the knowledge system and about technological developments and their social and ethical aspects. Even just appearing to promote interests would negatively affect the authority of the Rathenau Instituut. Experience shows that its contributions are widely appreciated, but that they also give rise to discussion.

Its independent position enables the Rathenau Instituut to:

- shed new light on problematical issues where there is the threat of deadlock
- clarify the public perspective
- encourage opinion formation
- create bridges between academia, politics and policy, and society
- bring together different parties to explore solutions
- provide recommendations – both solicited and unsolicited – to politicians, policy-makers, and other stakeholders (scientific institutions, companies, civil-society organisations)
- conduct research independently.

From the respondents' perspective

Because of its mission, the Rathenau Instituut is positioned between science, society and politics. It is neither a basic research Rathenau Instituut, a news agency nor a political advisory council. Given its particular mission and the critical importance of being strictly independent, it would not be wise for the Rathenau Instituut to become formally part of any of these spheres. In a similar vein, the Rathenau

Instituut refrains from being associated with one particular view. The Rathenau Instituut is viewed as being competent, independent and scientifically responsible.¹⁵

While there is no standard protocol to guarantee impartiality, the standing policy is that the management team personally ensures that there is always a strict separation between policy options and policy recommendations. The evaluation committee and the respondents agree with this stance and encourage the Rathenau Instituut to be more explicit about its particular position, i.e. how the Rathenau Instituut assures impartiality and does not give recommendations.

The capacity of the Rathenau Instituut to organize high quality social and political debates on the societal effects of scientific and technological developments is quite unique and highly valued by all the respondents and stakeholders consulted in the Berenschot study. The Rathenau Instituut's critical role is to prepare society for changes in the socio-technical sphere, by signalling these changes at an early stage and by describing the possible societal effects. In its key task of informing society about the societal effects of scientific and technological developments, the Rathenau Instituut should crucially take a strict non-partisan view. The Rathenau Instituut is well aware of safeguarding this stance. The respondents believe that the Rathenau Instituut is doing well at remaining independent.

With regard to the relationship between funding and independence, within the broader category of external funding, the respondents firmly believe, that to guarantee the autonomy of its research, the Rathenau Instituut should not move into contract research for private sector clients.

The Committee's conclusions

The unique and critical role of the Rathenau Instituut is widely acknowledged. Its three core fields of expertise Technology Assessment, Science System Assessment and Information Provisioning are highly acclaimed. Given the broad scope of topics addressed and the particular position in the knowledge landscape, the Rathenau Instituut's profile is not yet entirely clear-cut to the outside world. However, to some extent, this is a recurring problem for TA Institutes in general.

One of the previous evaluation committee's significant conclusions was to keep SciSA and TA in separate units, recognizably for the outside world.¹⁶ In response, the Minister argued that two separate communication strategies would not necessarily contribute to an increase in brand awareness or the Rathenau Instituut's impact. The Rathenau Instituut decided not to maintain SciSA and TA as separate units. According to the Rathenau Instituut Board and management team, the split between TA and SciSA was no longer tenable and even counterproductive from an organisational point of view, because in practice, the science system cannot (or can no longer) be studied in isolation from its context (i.e., stakeholders isolated from technology and industry).

Whereas internal logic has prevailed in reorganising the Rathenau Instituut, the Committee notes that this is not mirrored in stakeholders' expectations. To the outside world, the Rathenau Instituut's three separate functions a.k.a. roles are still highly relevant and also individually valued. Some stakeholders still know the Rathenau Instituut first and foremost for its TA function, while others mainly know the

¹⁵ Berenschot (2017). Imago onderzoek 2017 Rathenau Instituut.

¹⁶ "Combining the two departments within the Rathenau Instituut was approached from several perspectives by the Committee. It observed potential friction between the ex ante, opinion-shaping and forum functions of TA and the more ex post function of SciSA. It finally concluded that both departments can exist in one Rathenau Instituut and could even be combined for some topics. Close collaboration should first be evaluated formally in a limited number of projects. Despite collaboration within the Rathenau Instituut, the Committee is convinced that stakeholders have different expectations of the two departments. Thus, separate entities and preferably communication strategies are required for the outside world." (Report on the Evaluation of the Rathenau Instituut 2006-2011, p.7.)

Rathenau Instituut for its work on SciSA and/or Information Provisioning.¹⁷ This raises the question among respondents and the evaluation committee alike, how the integrative approach adopted by the Rathenau Instituut is reflected in its profile. Can the three activities be integrated in a description of the Rathenau Instituut's work that reflects the full scope of the three functions? An answer to these questions can clarify the common identity of the Rathenau Instituut and the interrelationship between the three (or two plus one) functions.

The Rathenau Instituut is generally praised for its ability to be impartial. The actual content of its studies is balanced and refrains from giving recommendations. It is obviously a greater challenge to remain neutral in its external communications, however the Rathenau Instituut manages to take an independent stand.

Recommendations

The Rathenau Instituut should make its common identity clearer to the outside world. How are the three fields of expertise Technology Assessment (TA), Science System Assessment (SciSA), and the information service interlinked and whether and how could they contribute to a greater whole? *Within* this common identity, individual fields of expertise could then be highlighted for specific themes and/or constituencies.

The Rathenau Instituut should safeguard a fair balance between the relative focus on all three functions, so that success in one field does not 'crowd out' the other functions. This applies especially for the highly valued studies on SciSA/STI information. These are in high demand by policymakers and politicians alike, and carry the risk of pushing the traditional function of TA more to the background.

The Rathenau Instituut is encouraged to remain active in protecting its neutral and impartial position and refraining from (policy) recommendations. Providing the full range of options so that stakeholders can make their own considerations, is vital for the legitimization of the Rathenau Instituut. Moreover, ensuring that the nuances of a debate are conveyed in its external communications will remain a challenge.¹⁸ In this respect, the current policies should be continued and further explored.

The Rathenau Instituut is advised to develop an evaluation protocol that matches the Rathenau Instituut's particular mission. This can improve the evaluation system for internal use and for the next evaluation in another five years. In particular, the protocol should include a set of concrete evaluation criteria that can be measured in an objective manner. As a formal evaluation protocol was lacking during the current evaluation, the Committee could not judge the Rathenau Instituut's performance based on ex ante explicitly formulated evaluation criteria.

¹⁷ The Rathenau Instituut defines itself as a strictly independent institute that monitors scientific and technological developments with the particular aim of informing society about the possible consequences of these changes (Technology Assessment, TA), and how to deal with these changes (with a particular focus on the government's role). During the site visit, the management team, Board and staff referred to the Rathenau Instituut primarily in terms of this TA function.

¹⁸ When fighting for media attention, the Rathenau Instituut faces the challenge of constantly having to refrain from using catchy headlines. In general, the Committee believes that the Rathenau Instituut is taking this issue seriously.

3.3 Contribution to the societal debate

The perspective of the Rathenau Instituut

The Rathenau Instituut has a clear strategy on agenda-setting. If it notes that a certain debate is lacking a specific critical component (i.e. a stakeholder/perspective) or if a debate seems to be diverging, the Rathenau Instituut steps in. The Rathenau Instituut has successfully intervened on several occasions. Clear examples are the study on the so-called Robot Society (introducing a much more nuanced perspective), the study on public funding of universities (creating common ground) and the study on public participation (building a bridge between opponents and advocates of nuclear energy).

Organizing interaction between relevant stakeholders is ingrained in the Rathenau Instituut's activities. It is one of the ways that the Rathenau Instituut assesses the quality of its projects (alongside scientific quality and communications). Every project plan must map all relevant stakeholders, and describe those stakeholders who will be contacted and how to establish a dialogue with them. An external review concluded that the internal processes at the Rathenau Instituut ensure stakeholders are involved throughout the entire duration of projects.¹⁹

Respondents and stakeholders' perspectives

In early 2017, the Rathenau Instituut commissioned Berenschot consultancy to conduct a survey to assess the Rathenau Instituut's public image. The results showed that stakeholders are primarily familiar with the Rathenau Instituut through the reports it publishes, through personal contacts, the events it organises and its newsletter. More than 80% of the stakeholder survey respondents said that they appreciated these practices.²⁰ They had a positive or highly positive response to the expertise, relevance, information content and topicality. Fewer than 5% of the respondents had a negative comment about these aspects.

In the period from 2013 to 2016, the Rathenau Instituut was mentioned between 7 and 12 times a week in the media. Reporting on the Rathenau Instituut is more than 90% neutral/factual; most of the remaining reporting can be classified as positive.²¹

The Rathenau Instituut exerts considerable influence by (pro)actively shaping social and political debate. The Rathenau Instituut clearly contributes to societal debates via the interaction with stakeholders during the execution of projects and the external communication on the outcomes of projects. The media outreach is relatively high. The respondents and the evaluation committee highly appreciate this role.

One of the Rathenau Instituut's strengths is its ability to identify and select topics that thanks to their timeliness attract a great deal of attention. Respondents in general acknowledge that the Rathenau Instituut writes in an accessible manner for a broad audience about complicated and technical topics, although some respondents think the writing style is still too academic.

Until recently, the Rathenau Instituut has focused its communication on public media because this is considered the most effective way to influence public and political debate. However, according to the Rathenau Instituut's management team, the downside of this approach is the indirect contact with stakeholders. Thus, the current strategy is to refocus communications about specific topics directly to stakeholders, which seems to be quite effective. In general, the respondents were satisfied with how

¹⁹ Internal learnig trajectory on stakeholder involvement led by one of the experts on this subject, Dr. Frank Kupper, guest lecturer from the Athena Institute (VU Amsterdam)

²⁰ Berenschot (2017).

²¹ Figures on the visibility of the Rathenau Instituut in the social debate (citations/use in public media, downloads of reports and twitter followers are in appendix 5.4.

they were included. Only one respondent complained that in a particular case, the Rathenau Instituut disregarded a key stakeholder's comments.

The Rathenau Instituut attaches great importance to ensuring that communication with the public at large is uniform and consistent. All communications and reporting are therefore checked in advance by the management team, the Head of Research and the Head of Communications. This is endorsed by the evaluation committee.

According to the respondents and also the management team, the biggest challenge for the Rathenau Instituut is to reach a large number of stakeholders effectively. This issue was also raised by the previous evaluation committee in its statement: "[...] many products do not reach beyond the inner circle of stakeholders". Since 2011, the outreach to the public at large has been strengthened. Rathenau staff members frequently attend events and other activities in the Netherlands, and are regularly invited as experts in public debates and at conferences. Moreover, they have regular contact with NGOs, companies and other stakeholders.

The Committee's conclusions

The Rathenau Instituut is clearly visible in the public debate, which is particularly thanks to its proactive stance. The current strategy to refocus communications about specific topics directly to stakeholders seems to be quite effective. One of the most difficult tasks is to organise interaction with the public at large. The Rathenau Instituut is rapidly improving its skills in this area and its use of social media, which is now being tackled more systematically. The evaluation committee encourages the Rathenau Instituut to further strengthen this strategy. Important input is to pick up 'soft signals' and (re)act on these signals.

Recommendations

The Rathenau Instituut should further improve its ability to reach a broader audience. While communications with targeted groups of stakeholders seems quite effective, more focus is required on communications with the broader public. The committee recommends:

- **formulate a strategic plan for targeting the public at large more effectively.** The current strategy is rather diffuse. Reflect more thoroughly on which activities are clearly contributing to this objective and which are less effective.
- **find ways to implement a broader and more heterogenous portfolio of social media applications for two-way communications.** So far, the systematic social media reporting seems to focus on the Rathenau Instituut's brand awareness. Effective two-way communications with the public at large requires sophisticated use of social media (e.g., to identify emerging trends in public opinion concerning science and technology, pick up 'soft signals' and elicit feedback and responses in specific projects).
- **accompany each report with a two pager for the public at large and visuals** (e.g. You Tube video; infographics). The Rathenau Instituut already uses this medium for a selected number of publications (e.g., Robot Society) but might consider further increasing the use of visuals, obviously if the budget allows.
- **select a number of employees who are capable of becoming 'recognized media figures'** and train them accordingly.

3.4 Contribution to the political debate

From the Rathenau Instituut's perspective

The contribution to political debate is one of the Rathenau Instituut's major objectives. In recent years, the Rathenau Instituut has strengthened relations with both houses of the Dutch Parliament and the European Parliament. It has provided technical briefings on specific studies, organised round table discussions for politicians, and was involved, for example, in giving expertise at hearings before the Senate and the Knowledge Chambers for various ministries. Besides the formal contacts, the Rathenau Instituut also has informal contacts, particularly via a dedicated liaison officer.²² The Rathenau Instituut has also worked on reinforcing relations with the national media and has good relations with journalists and editors of national newspapers, online media, radio and television programmes.

The 2015 report *Working on the Robot Society* is one example of how the Rathenau Instituut has helped to put the social aspects of science, technology and innovation on the political agenda.²³ The report was written in response to questions from the Parliamentary Committee on Social Affairs and Employment (SZW). The Committee asked the Rathenau Instituut to investigate the extent of scientific knowledge about the impact of technological developments on employment.

The responses in the House of Representatives showed that MPs were very satisfied with this publication. The timing also contributed to the success of the investigation. The House had time to investigate the subject prior to the Ministry developing a policy document. All the political parties were represented in the supervisory committee. The committee members described the report as being "from all of them" and supported its conclusions.²⁴

The House of Representatives organised an expert meeting to further investigate the options outlined in the report. The Rathenau Instituut also supported that meeting. The House then asked the Dutch government for a response. The Rathenau report was also used as valuable groundwork by the Social and Economic Council of the Netherlands (SER) in their policy advice regarding the impact of robotics on the labour market.

Figures on the visibility of the Rathenau Instituut in political debate are in appendix 5.5.

From the respondents' perspective

According to several respondents, one of the most effective ways to gain access to Parliament is via direct contact with MPs or their policy team. It is necessary to build up a personal network and then provide them with timely and tailor-made advice.

According to the focus groups that have been used in the Berenschot imago research, the impact of the Rathenau Instituut is especially on policy making, to a lesser extent on the public debate but less so on the political debate.²⁵ In one of the individual interviews it was however mentioned that "[the] Rathenau Instituut is an authority when it comes to [STI] figures and cannot be ignored."²⁶ From the individual interviews with parliamentarians it appears that they read publications from the Rathenau

²² A senior researcher who devotes half of her time (0.5 FTE) to the liaison function. Prior to 2014, she was seconded to Parliament for two years.

²³ Rathenau Instituut (2017). Self-assessment, p. 24-27.

²⁴ Ibid.

²⁵ The impact scores were respectively: policy [72%], public debate [5%], political debate [33%], science [28%]. Source: Robert Wester, Erik van Venetië, Alexandra Schippers (2017). Imago onderzoek 2017. Rathenau Instituut. Berenschot (project no. 56527), p.19.

²⁶ Ibid.

Instituut less frequently than the other focus group members. One parliamentarian indicates that she reads the reports when they are being sent to her.²⁷

The evaluation committee interviewed one other Parliament representative.²⁸ He thinks that the Rathenau Instituut's visibility is still rather low. According to the interviewee this might be partly due to the more general fact that science and technology are not so high on the political agenda and must compete with other urgent societal issues. Moreover, the Rathenau Instituut depends on the politicians' response to its work. In this respect, it is important to continue strengthening the relationship with MPs and other Ministries, such as Economic and Social Affairs, which are also confronted with the impact of rapid changes in science and technology. This might trigger broader attention for the Rathenau Instituut's work, also in Parliament. The way the case study on *Working on the Robot Society* has been promoted, is a good example of this approach.

The Committee's conclusions

Due to the inconclusive results of the qualitative data it is difficult for the Commission to assess the actual contribution of the Rathenau Instituut to the political debate. However, based on the quantitative data that is included in the self assessment, the relationship with Parliament seems to have been strengthened in the period under review.²⁹ In response to the previous evaluation committee's recommendation, the Rathenau Instituut has increased its efforts to inform and support MPs. The contacts with Parliament are both formal and informal, direct and indirect. As formulated in the constitution resolution, the Rathenau Instituut drafts a two-year work plan that is sent along with the Minister of OCW's view to both Houses of Parliament, who then decide how to discuss this work plan. The Rathenau Instituut also uses formal channels to bring its reports to the attention of Parliament. At the request of Parliament, the Rathenau Instituut can carry out research for Committees set up by Parliament, hearings or technical briefings.

Given most MPs' workload, limited time and resources, there seems to be a great potential for an independent institute such as Rathenau to support MPs in forming judgements about issues arising from scientific and/or technological developments (hence not about science and technology per se).

Because the relationship with Parliament is vital for the Rathenau Instituut's existence, the committee and respondents endorse continuing to ensure the special contact with MPs. Besides personal contacts and formal contacts, other innovative events for MPs might help the dialogue with them (e.g. regular meet-ups, an annual debate on a potential new key report by the Rathenau Instituut on trends in science and technology, and other exciting events, such as Master Classes). Also, a more proactive social media approach (to the wider public) may strengthen the attention paid in Parliament to the work carried out by the Rathenau Instituut. However, the Committee is well aware of the fact that the Rathenau Instituut can only take a servant stance here, and is very much on the receiving end, i.e. dependent on MPs.

²⁷ Op.cit., p.20

²⁸ Eight parliamentarians (who were member of the relevant parliamentary committees during the period 2012-2016) have been invited to participate in the site visit. One of them indicated that he would not be available during the site visit. Instead he has been interviewed prior to the site visit. The other invited parliamentarians did not reply.

²⁹ See again Appendix 5.5

Recommendations

The Rathenau Instituut should continue to strengthen the formal contacts with Parliament and the informal contacts with MPs and their assistants across the whole political spectrum and find other innovative ways to have dialogues with Parliament about pressing issues related to science and technology. As the relationship with Parliament and their support staff (especially clerks) is crucial to the Rathenau Instituut's mission, the efforts to further explore and intensify this relationship remain of utmost importance. The Rathenau Instituut has had a dedicated liaison officer (0.5 fte) for Parliament since 2014 (2012), who is doing an excellent job. Whether more time needs to be devoted to this task, will be considered.

The Rathenau Instituut is strongly recommended to continue broadening its area of work outside the Ministry of OCW policy domain. Whereas OCW is primarily concerned with science (hence is mostly affiliated with science system assessment), the other main field of expertise - Technology Assessment – is mostly related to other Ministries' domains, including Economic and Social Affairs. This will trigger broader attention for Rathenau's work, also in other relevant Parliament committees.

3.5 Scientific quality

From the Rathenau Instituut's perspective

Proper methodology is fundamental to the quality of the Rathenau Instituut's work. The Rathenau Instituut makes use of a wide variety of analytical and communicative methods, such as focus groups, citizen panels, statistics, scientometrics, surveys, interviews, visualisations, debates and presentations. All the work done by Rathenau Instituut researchers is based on such methods and techniques.

As a rule, the Rathenau Instituut's research projects have an Advisory Board, which is chaired by a member of the Board. The Board monitors the quality of the result and the embedding of the project within the broader policy and social context.³⁰

The core values the Rathenau Instituut aims for in its analytical and democratic activities are to be topical, relevant, challenging, and inviting. The Rathenau Instituut strives for excellence in translating political and policy debate into research projects and research projects into political and policy relevance. As carrying out this translation is a key task for the Rathenau Instituut, embedding its work in the social and political framework is crucial.

In addition, timing and responding to the dynamics of political and policy debate play an important role. The conclusions and recommendations formulated are up to date and can be implemented by the parties concerned. They are the result not only of empirical research but also of proper analysis of the actors involved and their positions (interests, knowledge, contacts, instrumental possibilities/impossibilities, etc.)

Meetings, results and contributions are designed in such a way to invite a response. They allow people to explore new ways of thinking. People are also invited to participate in relevant public and political debate. That is expressed in the style and tone of the contributions, which are clear, accessible and constructive.

The Rathenau Instituut publishes its investigations mainly in the form of reports. These are always published open-access and are made publicly accessible on the Rathenau Instituut's website and thus available for anyone to consult. To fulfil the above mission, the Rathenau Instituut ensures that specific target groups are involved in the research and dialogue on issues by means of debates, consultations, networking activities, various forms of targeted STI information provisioning, presentations at scientific conferences, radio and TV appearances, and representation at festivals.

The Rathenau Instituut has explicitly stated that it is not a basic research Rathenau Instituut and therefore should not be assessed according to academic criteria like the number of publications and citations in academic journals. Alongside scientific quality, the Rathenau Instituut applies two other criteria internally to assess the quality of its work, namely social networking (are all relevant stakeholders involved) and relevance (are the results useful, is the timing of the publication appropriate).

From the respondents' perspective

It is difficult to assess the scientific quality of the Rathenau Instituut, since the Rathenau Instituut's scientific work is based on its mission and aims.³¹ The Rathenau Instituut differs in that respect from other (KNAW) research Institutes and research groups at universities. Consequently, opinions diverge on what type of quality criteria should apply to the Rathenau Instituut. Some respondents believe that the Rathenau Instituut should excel in academic publications as well as in societally relevant

³⁰ Rathenau Instituut (2017). Self-assessment, p.17.

³¹ This was also observed by the previous evaluation committee (p.18).

publications that are scientifically well underpinned, while most others stress the importance of the latter type of publications. In general, the respondents seem to be satisfied with the quality of the Rathenau Instituut's work.³²

This difference of opinion is also reflected in the comments of the reviewers asked to review specific reports.³³ In general, the three reviewers are positive about the scientific quality of the reports. They stress the importance of being clear in reports as to whether the text refers to relevant literature, interviews, or any other sources. Usually, this point is well taken care of. However, they emphasize the importance of a more thorough description of the data (e.g., underlying distributions, effect of potential biases, differences in definitions used). In addition, they recommend providing more information on how interviews have been conducted, and how representative the qualitative results are likely to be.

There is general agreement among the respondents that the Rathenau Instituut should have core expertise in-house to perform its main tasks, that is, to assess technology (TA) and science systems (SciSA), and to provide quantitative information on science systems. They think that with its current budget and number of research staff (approximately 30 researchers), the Rathenau Instituut is able to cover several different policy research fields at the same time without compromising the quality of its work.

For specific projects, collaboration with external domain experts is established and/or experts on temporary contracts are brought in. This seems to function well. The staff does not necessarily need to have substantive knowledge on specific science and technology fields but needs to be able to acquire it (e.g., from external domain experts such as academic or corporate researchers). This capability should be safeguarded. Although technology foresight is an important component of the Rathenau Instituut's signalling function, it could also acquire the results from foresight studies by established specialist peer organisations.³⁴

The Committee's conclusions

The Rathenau Instituut is well respected for the quality of its (research) work. Because the Rathenau Instituut is not purely a research institute, it should not be judged based on strict academic criteria. Due to the lack of an evaluation protocol and clear evaluation criteria on which the scientific quality of the Rathenau Instituut's work can be judged, the evaluation committee found it problematic to give a more detailed and well underpinned opinion on the scientific quality of the Rathenau Instituut's work.

The same applies to the scientific review system, which needs to be more transparent for outsiders. According to the Committee, it is vital for the legitimisation of the Rathenau Instituut to be explicit about how the quality assurance process is organized and what kind of peer review system is in place.

Regarding the required knowledge base, the conclusion is that the Rathenau Instituut in general has sufficient in-house knowledge to fulfil its main tasks.³⁵ The core competencies of TA and SciSA experts are to elucidate the societal effects of scientific and technological development, and to analyse and describe the dilemmas and choices involved. The Rathenau Instituut's staff has those competences.

³² Appendix **Fout! Verwijzingsbron niet gevonden.** provides an overview of the Rathenau Instituut's publications.

³³ See final part of Appendix 5.2 ('Peer reviews').

³⁴ For instance, the Copenhagen Rathenau Instituut for Future Studies.

³⁵ One indicator is that the number of publications with an external co-author as first author is relatively low, namely 23% (see appendix **Fout! Verwijzingsbron niet gevonden.**).

Recommendations

The Rathenau Instituut is advised to continue working actively on the methodological underpinning of its research. The evaluation committee endorses thoroughly underpinning for instance the data sources used and the selection of stakeholders, and to take criticism seriously.

The Rathenau Instituut is advised to make both the criteria for evaluation and the scientific peer review system more explicit for outsiders. The evaluation committee proposes to convert the Advisory Board into an Expert Board for every project. Key experts in the particular field studied should be represented on this Board as well as key societal stakeholders. Additionally, the Committee recommends inviting preferably two or three external scientific experts to critically read the draft report.

The Rathenau Instituut should continue to strengthen its collaboration with research Institutes in the Netherlands and abroad that have relevant complementary knowledge. The Rathenau Instituut generally has sufficient in-house knowledge to fulfil its main tasks. However, complementary knowledge from other research institutes is often needed, depending on the particular knowledge that is lacking, to cover the full scope of the research questions in each project.

3.6 STI Information function

From the Rathenau Instituut's perspective

The STI information function has become part of the mandate of the Rathenau Instituut together with the SciSA function. It has grown out of the work on government R&D expenditures (the annual TWIN figures) and the mapping of the science system (the Facts and Figures series). It has been expanded to its current situation in 2015.

At the request of the Ministry of Education, Culture and Science, the Rathenau Instituut will further develop the knowledge and information function in the coming years. Scientific research is increasingly becoming an international issue. That is why the scope is being broadened by involving international studies and making international comparisons.³⁶

Perspective from the respondents

The work of the information unit is unanimously praised. In a relatively short period of time, the Rathenau Instituut has become an authoritative source on S&T statistics. The figures produced by the unit (especially the TWIN figures) are generally regarded as very useful.

So far, the Rathenau Instituut's S&T statistics have been mainly limited to basic data (such as TWIN). Three respondents, invited because of their expertise in this field, indicated that the usability of the Rathenau Instituut's figures could be further improved by putting the data more into context. For instance, statistics could be placed in a specific historical period (i.e., using longer time series) or linked to underlying changes in society and/or public policies (i.e., reflected in changes to definitions or methods).³⁷ This also requires more focus on the methodological justification of the statistics published. For instance, more information could be provided in a technology annex about the particular (selected) choices made regarding definitions, time-frame and methods.

The Committee's conclusions

The Rathenau Instituut clearly has a very important and highly appreciated role to play in collecting S&T statistics. The high degree of confidence in the figures produced by the Rathenau Instituut is evidenced by the fact that they are used by all major stakeholders in the S&T (policy) field.

The information function was - and still is - focused on the science systems assessment.³⁸ In some cases however, the information function could be used more to provide quantitative substantiation of TA studies.

The Rathenau Instituut is widely acclaimed for its non-partisan and impartial position. This is also a vulnerable and exposed position. The Rathenau Instituut is already treading a fine line between providing merely descriptive and richer interpretative data. There is a genuine demand for the latter type of data (e.g., the 'spinning plates' study on the actual flow of funding streams in Dutch university research was very well received).

Recommendations

The Rathenau Instituut is encouraged to expand the information function by increasing the use of statistical information in a broader range of studies, e.g. in Technology Assessment studies. The Information function is highly valued and can be linked to more projects than at present. This also implies more focus on the methodological justification of the statistics used.

³⁶ Ibid.

³⁷ Eurostat (2017). Towards a harmonised methodology for statistical indicators. Part 3 - Relevance of indicators for policy making (2017 edition). Luxembourg: Publications Office of the European Union.

³⁸ Note that the self assessment report uses the label 'information function *for the science system*'.

3.7 Position within KNAW and the independence of the Rathenau Instituut

From the Rathenau Instituut's perspective

The Rathenau Instituut has been part of the KNAW ever since its inception (in 1986, as NOTA). As stated in the explanatory memorandum accompanying the constitution resolution, the Rathenau Instituut has a unique task and status. It is not one of the advisory councils, planning agencies, or regular institutions for policy research. To properly regulate the relationship between the Rathenau Instituut and KNAW, a structure has been chosen consisting of an independent Board of the Rathenau Instituut and a director who prepares and implements the decisions of this Board and manages the Rathenau Instituut on a day-to-day basis.

The Board is responsible for the strategic and substantive aspects of the work of the Rathenau Instituut and for its mission and strategy. In particular, the Board's task is to determine the work program and annual report on the tasks performed, as well as adoption of the annual budget and financial report, in the latter two cases after the KNAW Board's approval. The Chair and new members of the Rathenau Instituut's Board are appointed by the Ministry of OCW, on the recommendation of the present Board of the Rathenau Instituut, the KNAW Board and the Netherlands Scientific Council for Government Policy (WRR) having been consulted. Board members are appointed based on their substantive knowledge and experience with respect to the Rathenau Instituut's mission and their position in society. The current members of the Board are listed in Appendix 5.7.

Legally, the Rathenau Instituut is part of KNAW. The President of KNAW legally represents the Rathenau Instituut. Rathenau Instituut staff are employed by KNAW, according to the collective labour agreement (CAO) for Dutch universities. The constitution resolution establishing the Rathenau Instituut gives details of the administrative relationship with the Academy, thus guaranteeing the Rathenau Instituut's independence as regards content. The Constitution resolution states that the Academy guarantees independent functioning regarding the Rathenau Instituut's content and makes the government budget available to the Rathenau Instituut without delay.³⁹

The Board and management team of the Rathenau Instituut believe that the current arrangement with KNAW works well. They have also declared that any change to the current arrangement should not have a negative effect on the current operations.

From the respondents' perspective

Several respondents believe that the current arrangement, where the Rathenau Instituut legally resides under KNAW, is the best option. They also think there are no fundamental obstacles to placing an independent institute such as Rathenau under KNAW. Although the Academy can be seen as both judge and being judged (by different institutes working under the KNAW umbrella) in public S&T debates, it thinks it is perfectly viable that the Rathenau Instituut operates from within KNAW, as long as both their perspectives are made clear to the outside world.

The committee has consulted extensively both the Ministry of Education, Culture & Science (OCW) and KNAW on this issue. KNAW is positive about both the Rathenau Instituut's existence and work. However, according to KNAW, the Rathenau Instituut's mission and tasks as well as its governance do not fit in with KNAW's mission and governance, while the roles of the Rathenau Instituut and KNAW sometimes clash concerning topics addressed by both organizations.

KNAW's main argument is that the Rathenau Instituut is not a basic research institute, but an institute that encourages public and political debate on disputed STI within society. Therefore, according to

³⁹ Herziening van het Instellingsbesluit (revision of the Implementation resolution) (OWB/FO/130825), 22 July 2009 (especially articles 6.1 and 7.1).

KNAW, Rathenau does not fit within the portfolio of its research institutes. Moreover, in addition to being a learned society and a management body for national research institutes, KNAW is also an advisor to the Dutch government on matters relating to scientific pursuit. Because of their independent advisory tasks, KNAW and the Rathenau Instituut sometimes get in each other's way. KNAW also has no control over the content and quality assurance of the Rathenau Instituut's studies or its administration. At the same time, the Rathenau Instituut is currently part of the legal entity KNAW. From an administrative, legal and communication point of view, this is an undesirable situation for the KNAW.

The above problem triggered the evaluation committee to investigate whether another institutional arrangement would be preferable, without incurring too much time and reorganisation efforts for the Rathenau Instituut.

The Committee assessed all the possible alternative options to establish the Rathenau Instituut as a legally independent organisation not associated with KNAW. However, none of the options appeared to be feasible because of not meeting the necessary legal and/or political requirements in terms of size, scope, character and mission.

The Committee's conclusions

The current institutional arrangement for the Rathenau Instituut within KNAW is acceptable for the Rathenau Instituut, but not (any longer) for KNAW. The most important reasons are: the Rathenau Instituut does not fit in its mission and governance and the advisory tasks sometimes clash. The current set-up will probably be critically discussed next year during the portfolio evaluation of all KNAW and NWO institutes. Hence it would be beneficial for the Rathenau Instituut and KNAW to seek another arrangement that better suits the interests of both organisations.

After evaluating all the alternative options, the evaluation committee concluded that the best solution for the Rathenau Instituut would be to maintain the current administrative arrangement with KNAW as much as possible, albeit as an independent foundation with its own employees, associated with KNAW, but no longer under the responsibility of KNAW.⁴⁰

⁴⁰ This is similar to the Duitsland Instituut (<https://duitslandRathenau Instituut.nl>) that is also an independent foundation, associated with the University of Amsterdam (the coordinator on behalf of ten other universities). An example in other countries is TA-SWISS that is, as a non-profit organisation, part of the Swiss Academies of Arts and Sciences (see <https://www.ta-swiss.ch/en/mandate-and-organisation>).

Recommendations

The evaluation committee recommends a legally independent entity for the Rathenau Instituut – a foundation with its own board, management and employees, but associated with KNAW. In this way, the Rathenau Instituut can strengthen its independent position, while KNAW is no longer responsible for the Rathenau Instituut. KNAW can still make the Government budget available to the Rathenau Instituut without delay. Employees of the Rathenau Instituut can be employed by the foundation under similar labour conditions as at present.⁴¹

It is recommended that all current operational arrangements remain in place as much as possible through a service agreement between the Rathenau Institute and KNAW. The evaluation committee advises to try to keep all operational arrangement the same, such as accommodation, IT, accounting and access to online libraries. In this way, the switch to another body ('foundation') will hardly affect employees' daily work.⁴² The Rathenau Instituut should be at liberty to make different operational arrangements in the future that best suit the Rathenau Instituut's interests.

The Rathenau Instituut needs to establish a foundation and attune the current relationship with KNAW accordingly. The establishment of a foundation will require some revisions to the current relationship with KNAW. It also implies that the Rathenau Instituut will operate under its own name, identity and brand and will no longer be referred to as a KNAW institute.

The Rathenau Instituut no longer needs to be part of the upcoming portfolio evaluation of all KNAW and NWO Institutes. Given the possible transition to an independent foundation, the evaluation committee takes the view that this evaluation is no longer relevant for the Rathenau Instituut.

⁴¹ Note that employees can still belong to the government pension funds, ABP. Also note that the special status of civil servants will no longer exist as of 1 January 2020 anyway (see for instance <https://www.rijksoverheid.nl/onderwerpen/overheidspersoneel/werknemer-bij-de-overheid/nieuwe-rechtspositie-ambtenaren>).

⁴² Herziening van het Instellingsbesluit Rathenau Instituut (Revision of the Implementation resolution Rathenau Instituut), 3 July 2009 (OWB/FO/130825), Article 7.

4. Overall assessment and recommendations

4.1 Overall assessment of the functioning of the Rathenau Instituut

All the members of the evaluation committee as well as the respondents and stakeholders consulted, are clearly positive about the functioning of the Rathenau Instituut. They highly value the quality of the Rathenau Instituut's work and its active contribution to public debate and political judgement on science and technology issues. Its output in terms of reports and other publications and media exposure are high. The Rathenau Instituut's position is regarded as unique within the Dutch knowledge landscape and of utmost importance in times of rapid changes in scientific and technological developments. When asked, stakeholders scored Rathenau with an eight or even higher. When asked to the respondents and the evaluation committee to give a mark, the Rathenau scores very positive.

Given these overall positive conclusions, the recommendations formulated below should be seen as suggestions for further improvement and to support the Rathenau Instituut's valuable work.

4.2 Recommendations

4.2.1 On the Rathenau Instituut's image, position and tasks

The Rathenau Instituut should make its common identity clearer to the outside world. How are the three fields of expertise Technology Assessment (TA), Science System Assessment (SciSA), and information service interlinked and whether and how could they contribute to a larger whole? Within this common identity, individual fields of expertise could then be highlighted for specific themes and/or constituencies.

The Rathenau Instituut should safeguard a fair balance between the relative focus on all three functions, so that success in one field does not 'crowd out' the other functions. This applies especially to the highly valued studies on SciSA/STI information. These are in high demand by policymakers and politicians alike, and carry the risk of pushing the traditional TA function to the background.

The Rathenau Instituut is encouraged to remain active in safeguarding its neutral and impartial position and refraining from (policy) recommendations. Providing the full range of options so that stakeholders can make their own informed considerations, is vital for the legitimization of the Rathenau Instituut. Moreover, it will remain a challenge to ensure that the nuances of a debate are conveyed in its external communications. In this respect, the current policies should be continued and further explored.

The Rathenau Instituut is advised to develop an evaluation protocol that matches its particular mission. This can improve the evaluation system for internal use and for the next evaluation in another five years. In particular, the protocol should include a set of concrete evaluation criteria that can be measured in an objective manner. As a formal evaluation protocol was lacking during the current evaluation, the Committee could not judge the Rathenau Instituut's performance based on ex ante explicitly formulated evaluation criteria.

4.2.2 On the contribution to the societal debate

The Rathenau Instituut should further improve its ability to reach a broader audience. While communications with targeted groups of stakeholders seem quite effective, those with the broader public needs to be improved. The Committee recommends:

- formulate a strategic plan for targeting the public at large more effectively. The current strategy is rather diffuse. Which activities are clearly contributing to this objective and which ones are less important, should be reflected upon more thoroughly.
- find ways to implement a broader and more heterogeneous portfolio of social media applications for two-way communications. So far, the systematic reporting of social media seems to focus on the Rathenau Instituut's brand awareness. Effective two-way

communications with the public at large also requires sophisticated use of social media (e.g., to identify emerging trends in public opinion concerning science and technology, pick up 'soft signals' and elicit feedback and responses for specific projects).

- accompany each report with a two pager for the public at large and visuals (e.g. You Tube video; infographics). The Rathenau Instituut already uses this medium for a selected number of publications (e.g., Robot Society) but might consider further increasing the use of visuals, obviously if the budget allows.
- select a number of employees who are capable of becoming 'recognized media figures' and train them accordingly.

4.2.3 On the contribution to the political debate

The Rathenau Instituut should continue to strengthen the formal contacts with Parliament and the informal contacts with MPs and their assistants across the whole political spectrum, and find other innovative ways to have dialogues with Parliament about pressing issues related to science and technology. As the relationship with Parliament and their support staff (especially clerks) is crucial to the Rathenau Instituut's mission, the efforts to further explore and intensify this relationship remains of utmost importance. The Rathenau Instituut has had a dedicated liaison officer (0.5 fte) for Parliament since 2014 (2012), who is doing an excellent job. It will be considered whether more time needs to be devoted to this task.

The Rathenau Instituut is strongly recommended to continue broadening its area of work outside the Ministry of OCW policy domain. Although OCW is primarily concerned with science (hence mostly affiliated with science system assessment), the other main field of expertise - Technology Assessment – is mostly related to other Ministries' domains, among which Economic and Social Affairs. This will trigger broader attention for Rathenau's work, also in other relevant committees in Parliament.

4.2.4 On scientific quality

The Rathenau Instituut is advised to remain active on the methodological underpinning of its research. The evaluation committee endorses thoroughly underpinning for instance the data sources used and the selection of stakeholders, and to take criticism seriously.

The Rathenau Instituut is advised to make the criteria for evaluation and the scientific peer review system more explicit for outsiders. The evaluation committee proposes to convert the Advisory Board into an Expert Board for every project. Key experts in the particular field studied are represented on this Board as well as key societal stakeholders. Additionally, the committee recommends inviting preferably two or three external scientific experts to critically read draft reports.

The Rathenau Instituut should continue to strengthen its collaboration with research Institutes in the Netherlands and abroad that have relevant complementary knowledge. The Rathenau Instituut generally has sufficient in-house knowledge to fulfil its main tasks. However, complementary knowledge from other research institutes is often needed depending on the particular knowledge that is lacking to cover the full scope of research questions in each project.

4.2.5 On the STI information function

The Rathenau Instituut is encouraged to expand the information function by increasing the use of statistical information in a broader range of studies, e.g. in Technology Assessment studies. The Information function is highly valued and can be linked to more projects than at present. This also implies more focus on the methodological justification of the statistics used.

4.2.6 On the position within KNAW and the Rathenau Instituut's independence

The evaluation committee recommends a legally independent entity for the Rathenau Instituut – a foundation with its own board, management and employees, but associated with KNAW. In this way,

the Rathenau Instituut can strengthen its independent position, while KNAW is no longer formally responsible for the Rathenau Instituut. Employees of the Rathenau Instituut can be employed by the foundation under similar labour conditions as present.

It is recommended that all current operational arrangements remain in place as much as possible through a service agreement between the Rathenau Institute and KNAW. The evaluation committee advises to try to keep all operational arrangement the same, such as accommodation, IT, accounting and access to online libraries. In this way, the switch to another body ('foundation') will hardly influence the employees' daily work. The Rathenau Instituut should be at liberty to make different operational arrangements in the future that best suit the Rathenau Instituut's interests.

The Rathenau Instituut needs to establish a foundation and attune the current relationship with KNAW accordingly. The establishment of a foundation will need some revisions in the current relationship with KNAW. It also implies that the Rathenau Instituut will operate under its own name, identity and brand and will no longer be referred to as a KNAW institute.

The Rathenau Instituut no longer needs to be part of the upcoming portfolio evaluation of all KNAW and NWO institutes. In light of the possible transition to an independent foundation, the evaluation committee takes the view that this evaluation is no longer relevant to the Rathenau Instituut.

5. Appendices

5.1 Composition of the Evaluation Committee

Chair

Prof.dr. Jacqueline Cramer (Utrecht University)

Members

Dr. Martijn van Calmthout (de Volkskrant)

Prof. dr. Michael Nentwich (Austrian Institute of Technology Assessment)

Dr. Véronique Timmerhuis (Sociaal-economische Raad, SER)

Prof.dr. Patti Valkenburg (University of Amsterdam)

Secretary

Drs. Robbin te Velde (Dialogic)

5.2 List of discussion partners

Rathenau Instituut, Board (site visit)

- Dr. Hans Dröge (Board Rathenau Instituut, Unilever)
- Gerdi Verbeet (Chair Board Rathenau Instituut)
- Prof.dr. Marijk van der Wende (Board Rathenau Instituut, Utrecht University)

Rathenau Instituut, Management Team (site visit)

- Jeroen Jongeling MSc, MBA. MRM (Head of Communications)
- Prof. dr. Barend van der Meulen (Head of Research)
- Dr.ir. Melanie Peters (Director)
- Els Versteegt (Head of Department)

Rathenau Instituut, Researchers (site visit)

- Jos van den Broek MSc (Researcher)
- Lisa van Bodegom MSc (Researcher)
- Dr. ir. Jasper Deuten (Coordinator Research and Dialogue)
- Dr. ir. Rinie van Est (Coordinator Research and Dialogue)
- Drs. Jos de Jonge (Coordinator Research and Dialogue)
- Drs. Ira van Keulen (Senior Researcher, Parliamentary Liaison Officer)
- Dr. Elisabeth Koier (Researcher)
- Linda Kool Msc. MA (Senior Researcher)
- Timo Maas Msc. (Researcher)
- Ir. Alexandra Vennekens MBA (Senior Researcher)
- Dr. ir. Sue-Yen Tjong Tjin Tai (Researcher)

Site visit (external stakeholders)

- Mr. Anneke Bovens (Advisory Council for Science, Technology and Innovation, AWTI)
- Drs. Erik Drop (TNO)
- Dr. Pieter Heringa (Ministry of Economic Affairs)
- Dr. Luuk Klomp (Ministry of Economic Affairs)
- Pieter-Gerrit Kroeger (PBLCO, ScienceGuide)
- Drs. Erik van de Linde (KNAW)
- Dr. Ir. drs. Bennie Mols (science journalist, NTR)
- Prof.dr. Gerard van der Steenhoven (Royal Netherlands Meteorological Institute, KNMI)
- Dr. Bas Straathof (CPB Netherlands Bureau for Economic Policy Research)
- Drs. Han van Yperen (VSNU)

Interviews (external stakeholders)

- Dr. Arne Brentjes (University of Amsterdam)
- Dr. Eppo Bruins (MP ChistenUnie, STW)
- Mr. Richard Derksen (Ministry of Education, Culture & Science) ⁽¹⁾
- Prof.dr. José van Dijck (KNAW) ⁽¹⁾
- Prof.dr. Koen Frenken (Utrecht University)
- Prof.dr.mr. Marc Groenhuijsen (KNAW) ⁽¹⁾
- Prof.dr. Andre Knottnerus (WRR)
- Drs. Marlies van der Meent (NWO)
- Prof.dr. Kim Putters (The Netherlands Institute for Social Research, SCP)
- Prof.dr.ir. Wim van Saarloos (KNAW) ⁽¹⁾
- Dr. Nora van der Wende (Ministry of Education, Culture & Science) ⁽¹⁾
- Mr. Mieke Zaanen (KNAW) ⁽¹⁾

⁽¹⁾ Interviewed in the context of alternative options for institutional embedding.

Peer reviews

- Dr. Neil Foster-McGregor (UNU-MERIT) → R&D goes global (2015)
- Dr.ir.drs. Bennie Mols (NTR) → Robot Society (2015)
- Dr. Jeroen van der Waal (Erasmus University) → Vertrouwen in de wetenschap (2015)

5.3 Site Visit Agenda

Time	Discussants
9:00-10:00	Management team Rathenau Instituut
10:00-10:15	Parliamentary Liaison Officer Rathenau Instituut
10:45-11:15	Researcher Rathenau Instituut
11:15-12:00	External stakeholders (c.) information function
12:00-13:15	Evaluation Committee (lunch, internal discussion #1)
13:15-14:00	External stakeholders (a.) societal debate
14:00-14:45	External stakeholders (b.) political debate
14:45-15:00	Evaluation Committee (internal discussion #2)
15:00-15:45	Board Rathenau Instituut
15:45-16:30	External stakeholders (e.) position KNAW
16:30-16:45	Evaluation Committee (internal discussion #3)
16:45-17:00	Evaluation Committee (feedback to Management Team)

5.4 The Rathenau Instituut's visibility and use in societal debate⁴³

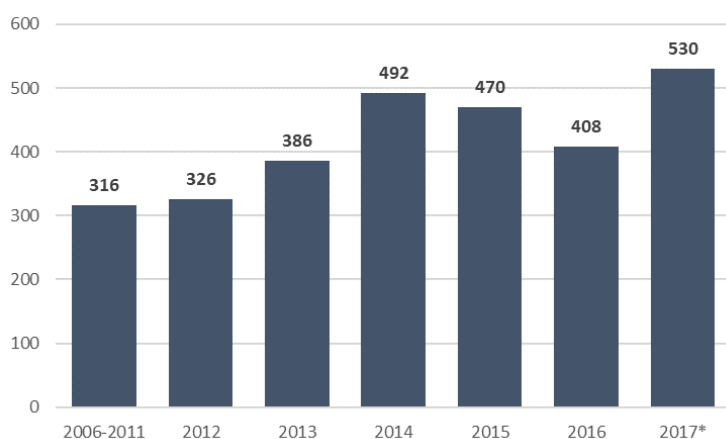


Figure 1. Citations/use in public media (source: Technopolis (2017) Meltwater Analysis).⁴⁴

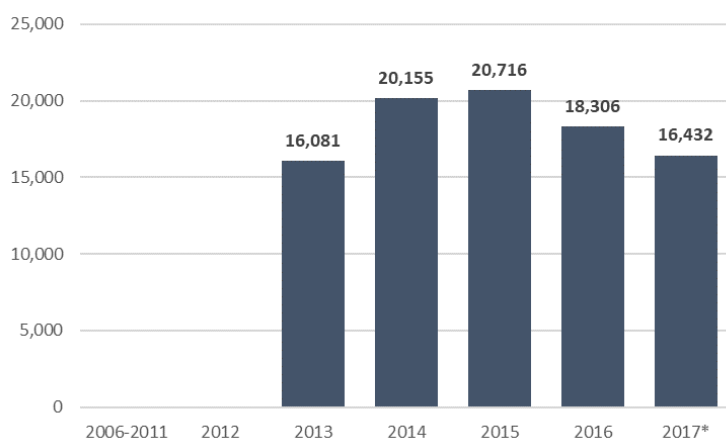


Figure 2. Downloads of reports (source: Technopolis (2017) Meltwater Analysis).

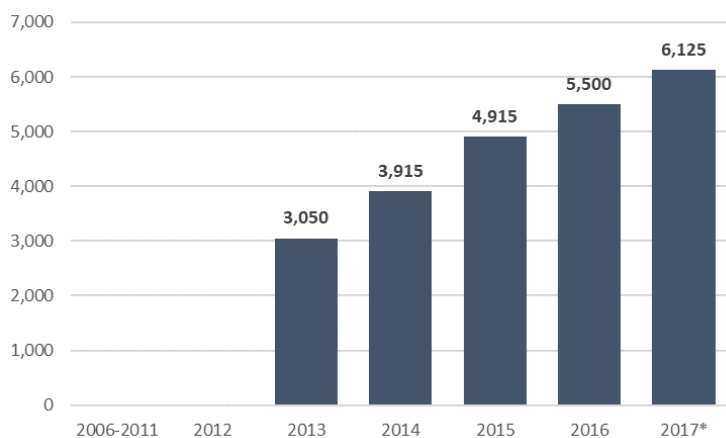


Figure 3. Twitter followers. (source: Rathenau Instituut (2017))

⁴³ 2017: up until August.

⁴⁴ Note that Technopolis mentions the exposure of both the Rathenau Instituut *and its peers* but the numbers are combined. Thus the figures above show the totals (also in the following appendix).

5.5 The Rathenau Instituut's visibility and use in political debate

The assessment of increased political impact is based on analysis by the Rathenau Instituut of the references to Rathenau Instituut in Parliamentary documents (both Parliament and Senate), which was collected through the website of the parliament⁴⁵.

All appearances of the period 2006-2017 have been filed and subsequently scored in terms of:

- Appearance in documents sent to the parliament by the government (Figure 4)
- Mentioning of the "Rathenau Instituut" in parliamentary debates (Figure 5).

The results of the analysis have been included in the self-assessment. Upon request, the source data has later been sent to the committee and has been cross-checked by Dialogic.⁴⁶

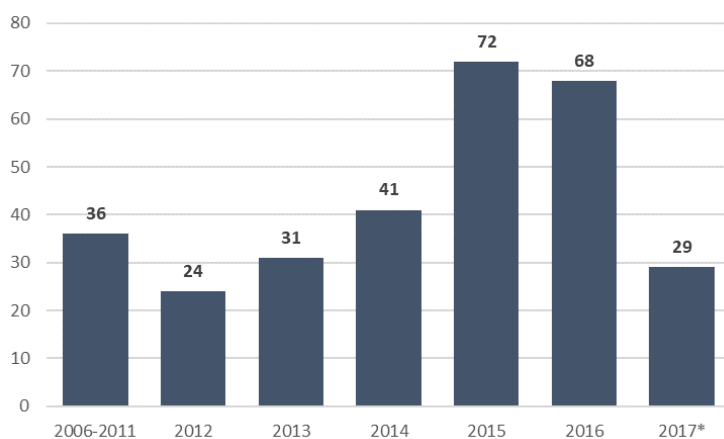


Figure 4. Number of letters and reports for Parliament in which Rathenau Instituut output is used (source: Rathenau self-assessment)

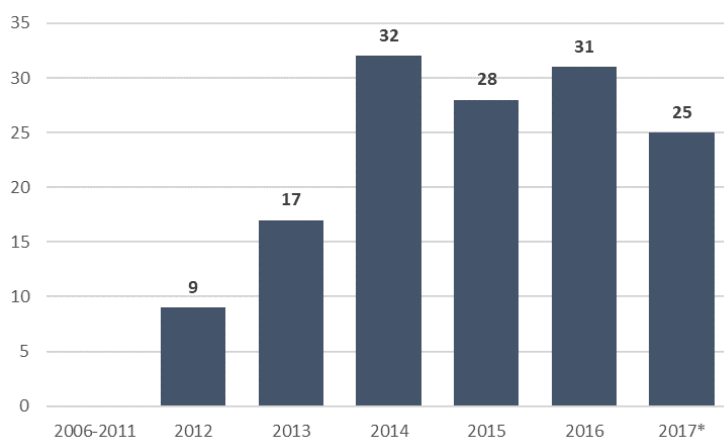


Figure 5. Number of debates in Parliament in which Rathenau Instituut output is used in the argumentation (source: Rathenau self-assessment)

⁴⁵ www.overheid.nl/officielebekendmakingen

⁴⁶ On average, in each year about 20% of the documents counted include either strictly administrative notices (e.g., inclusions in 'list of documents') or implicit references (e.g., to meetings in which staff members of the Rathenau Instituut participated).

5.6 Publication at Rathenau Instituut

Table 1. Total numbers of publications, by type of publication, 2012-2016⁴⁷

Type of publication	2012	2013	2014	2015	2016	2012-2016
policy report ⁽¹⁾	22 (59%)	17 (37%)	31 (61%)	15 (44%)	17 (52%)	102 (51%)
academic publication	11 (30%)	23 (50%)	16 (31%)	16 (47%)	7 (21%)	73 (36%)
statistical report	3 (8%)	6 (13%)	4 (8%)	3 (9%)	7 (21%)	23 (11%)
memorandum	1 (3%)	0 (0%)	0 (0%)	0 (0%)	2 (6%)	3 (2%)
Totals	37 (100%)	46 (100%)	51 (100%)	34 (100%)	33 (100%)	201 (100%)

⁽¹⁾ Including books and essays.

Source: Rathenau (2017). Key Figures 2012-2016

Table 2. Total numbers of publications (excluding scientific publications), by type of author

Type of author	Total	%
Total number of publications	128	100%
of which with co-authors	50	39%
of which co-author as first author	29	23%
of which co-author affiliated PhD/post-doc	16	12%

Source: www.rathenau.nl (2017). Coding: Dialogic.

Table 3. Total numbers of publications (2016), comparing Rathenau Instituut to three benchmark organisations⁴⁸

Organisation	Research staff (FTE)	Policy reports	other external publications	Total publications	Policy reports/ FTE	Total publications/ FTE
Rathenau Instituut	31	24 ⁽¹⁾	9	33	0.77	1.06
ITA	22	13	68	81	0.59	3.68
SCP	75	40	150	190	0.53	2.53
Dialogic	22	72	8	80	3.27	3.64

(1) Policy reports plus statistical reports (see Table 1)

⁴⁷ Excluding periodicals and newsletters.

⁴⁸ These benchmark organisations represent various types of organisations that operate in the same domain as the Rathenau instiut. The Institute of Technology Assessment (ITA) is part of the Austrin Academy of Sciences. Sociaal Cultureel Planbureau (SCP) is a public research organisation. Dialogic is a private research consultancy. Data for ITA and Dialogic were available via the Evaluation Committee, data from SCP is taken from the 2016 annual report. Data from Rathenau Instituut is taken from the Key Figures 2012-2016 memorandum (Rathenau, 2017). It should be noted that 2016 has been taken as a reference year because it was the most recent year for which data was available, and in fact the only year for which comparable information was available for all benchmark organisations.

5.7 Members of the Board of the Rathenau Instituut⁴⁹

The Chairman and other members of the Board are formally appointed by the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Scientific Council for Government Policy (WRR), at the nomination of the sitting members of the Board.

Chair

Gerdi Verbeet. President of the House of Representatives from 2006 to 2012. Member of the House of Representatives from 2001 to 2006.

Members

Prof.dr. Emile Aarts. Rector of Tilburg University. Professor of Computer Science and Deputy Dean at Eindhoven University of Technology.

Prof.dr. Wiebe Bijker. Professor of Technology and Society at Maastricht University and part-time professor at the Norwegian University of Science and Technology (NTNU).

Prof.dr. Roshan Cools. Professor of Cognitive Neuropsychiatry at the Faculty of Medical Sciences at Radboud University, Nijmegen.

Dr. Hans Dröge. Former Vice President R&D at Unilever Nederland.

Edwin van Huis. Director of Naturalis Biodiversity Center, Leiden.

Prof.dr. Peter-Paul Verbeek. Professor of the philosophy of humans and technology and co-director of the DesignLab at the University of Twente.

Prof.dr. Marijk van der Wende. Dean of Graduate Studies, Utrecht University.

Secretary

Dr.ir. Melanie Peters. Director of the Rathenau Instituut.

⁴⁹ See for a more detailed overview <https://www.rathenau.nl/en/page/board>