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Nationaal plan open science

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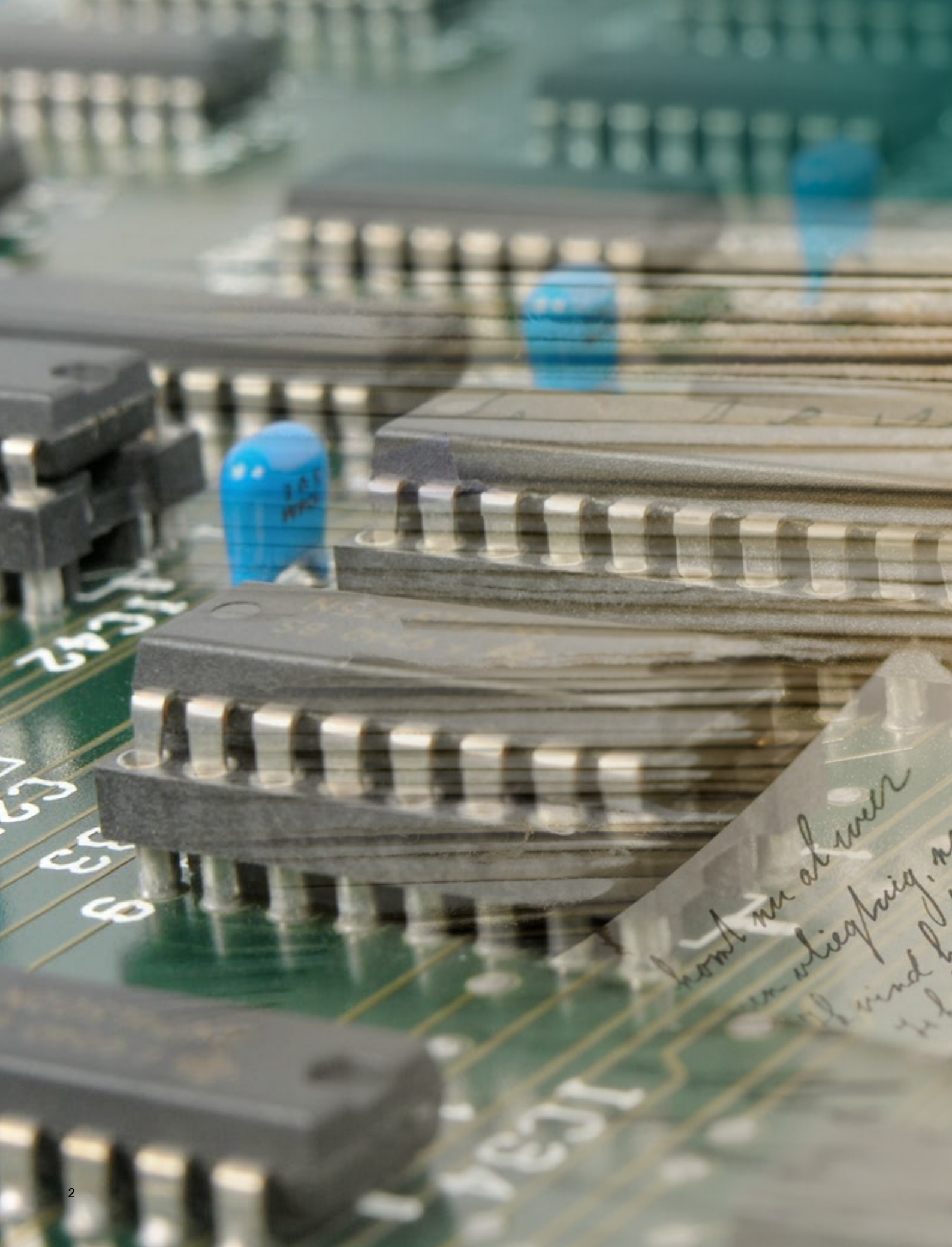
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national plan **open science**



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});
});
jQuery(document).ready(function(){
('.panel-btn').on('click', function(event){
event.preventDefault();
('.panel').addClass('is-visible');
});
('.panel').on('click', function(event){
(event.target).is('.panel')
('.panel').removeClass('is-visible');
event.preventDefault();
});
});
jQuery(document).ready(function($){
//open the lateral panel
$('.panel-btn').on('click', function(event){
event.preventDefault();
$('.panel').addClass('is-visible');
});
//clode the lateral panel
$('.panel').on('click', function(event){
if($(event.target).is('.panel')
{
$('.panel').removeClass('is-visible');
event.preventDefault();
}
});

Summary

Thanks to information and communication technology and globalisation there are now new opportunities to exchange results of scientific research - publications and research data - and even scientific methods and practices. With open science, this has to do above all with researchers and the increasing quality of their work. The scientific community is aware of these opportunities and that is why this National Plan Open Science sets out first and foremost what the parties involved[1] are already doing now and what they plan to do to grasp these opportunities and at the same time make science even more accessible to others. The transition towards an open science system requires ambition, investments in people and resources, and alertness to risks, because they too exist.

Many national initiatives have already been launched. A major boost is required if these initiatives are to be coordinated and the great ambition realised. That is why this Plan lists the ambitions and provides details of the parties intending to take action, as well as the timeframes within which they believe they can realise their objectives.

The key ambitions are:

- **Full open access to publications in 2020**
  Continue the Dutch approach for all Dutch research organisations and research areas whilst recognising their differences and similarities.
- **To make research data optimally suited for reuse**
  To set clear and agreed technical and policy-related preconditions to facilitate reuse of research data, including provision of the necessary expertise and support.
- **Recognition and rewards**
  To examine together how open science can be an element of the evaluation and reward system for researchers, research groups and research proposals.
- **To promote and support**
  To establish a 'clearing house' for all information regarding all available research support.

With the ambitions set out in this plan the Netherlands is responding to the Amsterdam Call for Action on Open Science published in 2016, the conclusions of the Competitiveness Council in May 2016, and to the in the letter to Parliament concerning open science confirmed question by the State Secretary for Education, Culture and Science (January 2017). Open access to publications and optimal reuse of research data are becoming the standard for all knowledge institutes and research areas. The motto here is as open as possible, as closed as necessary. Many technical and organisational measures are still required to ensure full compliance with this standard. To encourage the necessary cooperation, respond to new developments and monitor progress, the participating parties, with the support of the Ministry of Education, Culture and Science, are setting up the Open Science National Platform. The Platform is open to new participants and will involve researchers in particular in the ambitions and actions.

During the event on 9 February 2017, at which the Plan was presented and the Platform launched, the Dutch Open Science Declaration was signed by the parties involved.

[1] DANS, The Young Academy, DTL, GO FAIR, KB, KNAW, LCRDM, Netherlands eScience Center, NFU, NWO, PNN, SURF, 4TU.Centre for Research Data, UKB, VH, VSNU, ZonMw, at the time of publication.

national plan
open science

Open Science Declaration

9 February 2017, The Hague
Presentation of the National Plan Open Science

Assuming that open science

- is a transition which is taking place throughout the world's scientific community;
- offers great benefits for scientists in terms of research, education and valorisation;
- fosters the quality of scientific practice;
- gives people and organisations access to research and research data and enables them to contribute to it; and
- strengthens the innovative capacity of the Netherlands.

Noting that

- joint and coordinated action is required at national and international level to ensure the transition runs smoothly for researchers and other parties involved; and
- the Netherlands can play a guiding role in the transition.

We declare that we shall contribute to the transition towards an open science system in the Netherlands by

- taking measures to ensure that the ambitions in the National Plan Open Science, which require the active engagement of our organisations, are implemented; and
- participating actively in the National Platform Open Science.

Karl Dittrich — VSNU

José van Dijck — Koninklijke Nederlandse Akademie van Wetenschappen

Stan Gielen — NWO

Thom de Graaf — Vereniging Hogescholen

Rolf van Wegberg — PROMOVENDI Netwerk Nederland

Tjibbe Joustra — KB

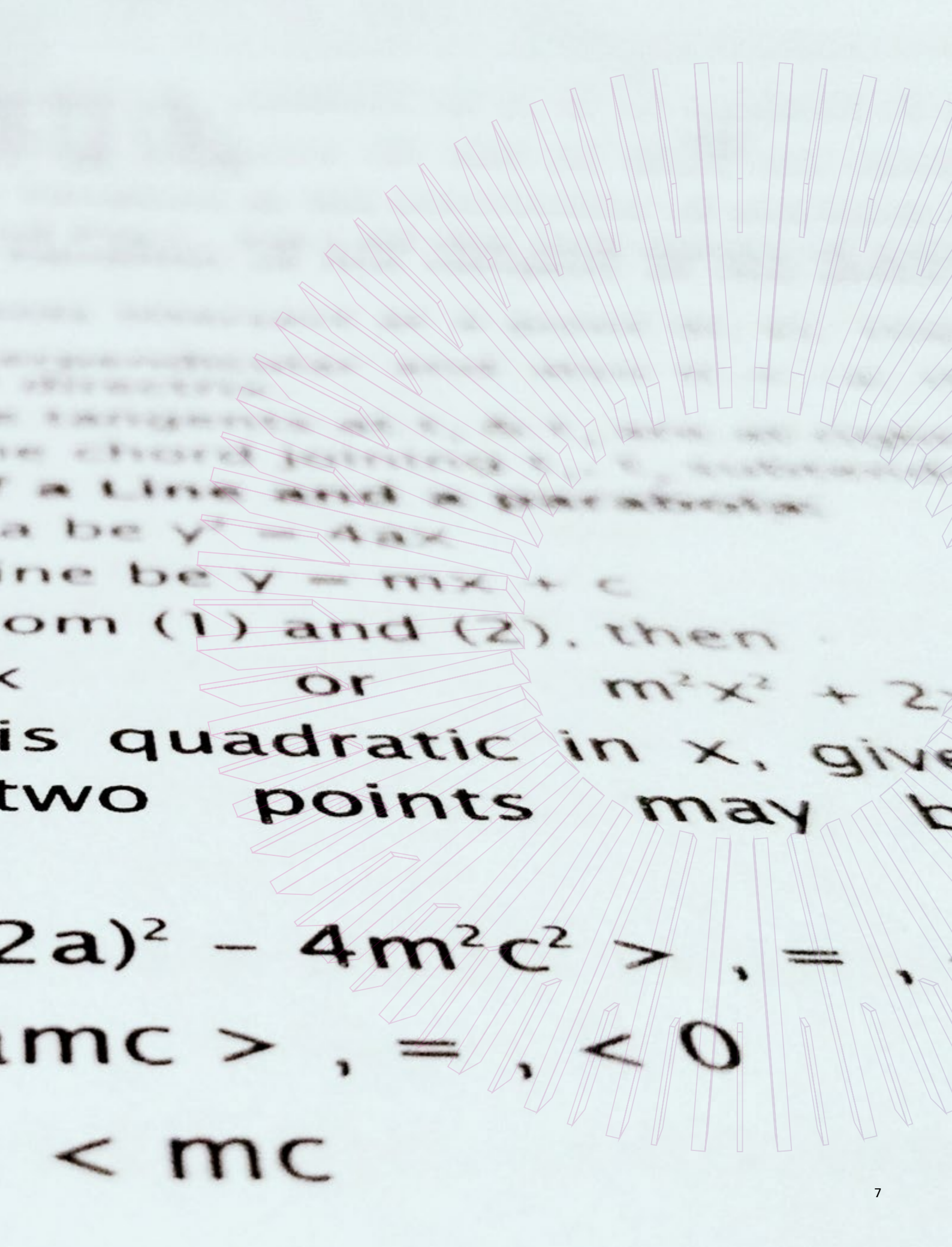
Paul Rullmann — SURF

Pancras Hogendoorn — NFU

Richard Janssen — ZonMw

Karel Luyben — GO FAIR

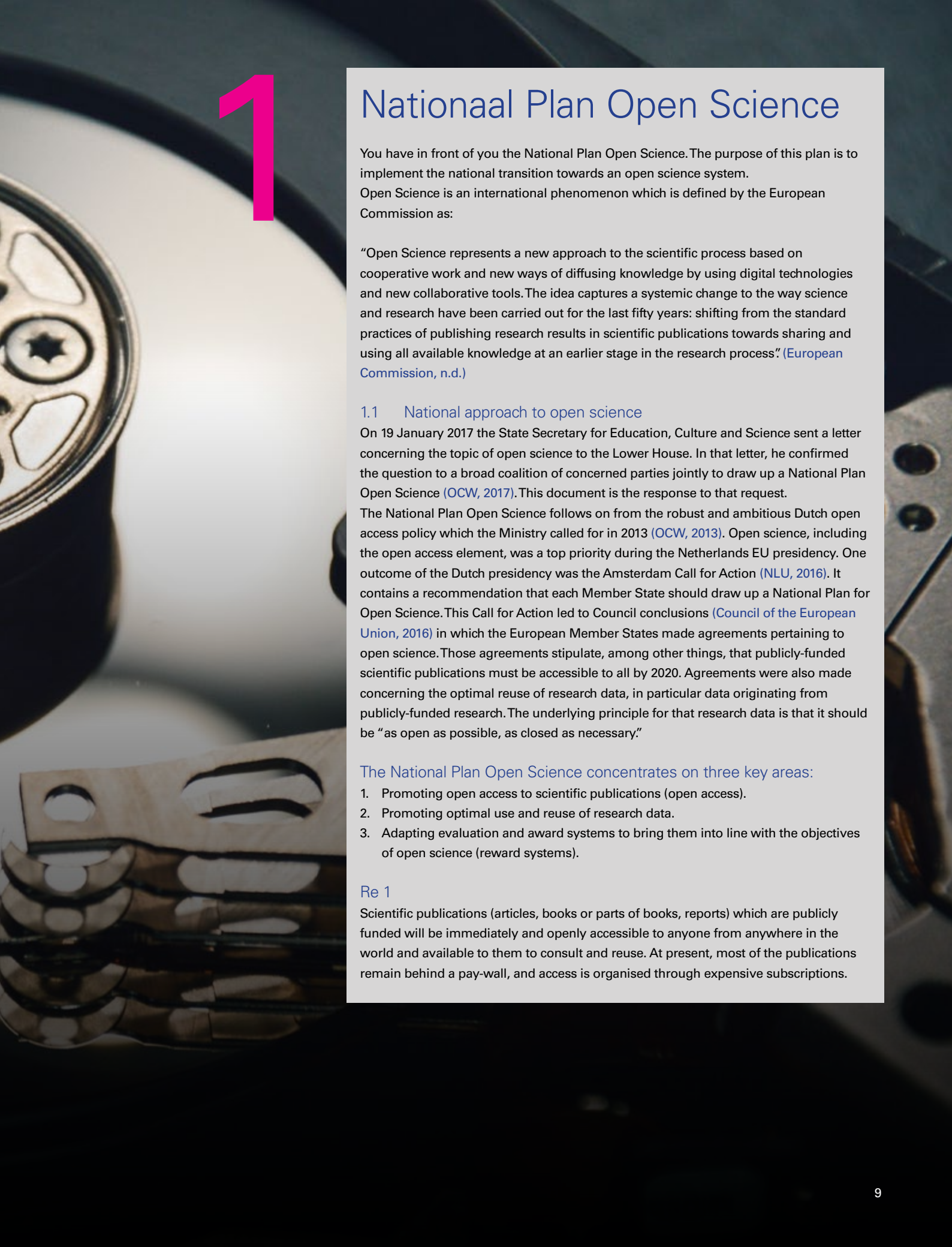
This declaration is also herewith signed by the following parties: DANS, The Young Academy, DTL, LCRDM, Netherlands eScience Center, 4TU.Centre for Research Data, and UKB


a Line and a
a be y² = 4ax
ne be y = mx + c
om (1) and (2), then
x or m²x² +
is quadratic in x, give
two points may b
2a)² − 4m²c² > , = ,
mc > , = , < 0
< mc



"The patient is the primary concern is a frequently heard motto, but this does not yet hold true for scientific publications. Even though it is of crucial importance, access for patients and patient organisations is often very limited and has a substantial price tag attached to it. The Longfonds (Lung Foundation) represents the interests of patients and is making a difference. For instance, we, and others, have ensured that Omalizumab (Xolair) is reimbursed in the government's reimbursement process. This is a drug which for some people with severe asthma is the only means of keeping their condition under control and participating in social and civic life. Without sound scientific substantiation, breakthroughs of this kind in lobbying are impossible. Direct access to scientific publications is therefore vital. At present, retrieving publications is time-consuming and we are dependent on care providers and pharmacists for access. It is not feasible financially for us and other patient organisations to purchase subscriptions for all the relevant journals. Open Access to publications makes us stronger as a lobbyist, helps to fund and stimulate scientific research and gives us the opportunity to provide our supporters with sound information concerning recent developments."

Hendrien Witte, director of the Longfonds Patients' Association



1 Nationaal Plan Open Science

You have in front of you the National Plan Open Science. The purpose of this plan is to implement the national transition towards an open science system.
Open Science is an international phenomenon which is defined by the European Commission as:

"Open Science represents a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools. The idea captures a systemic change to the way science and research have been carried out for the last fifty years: shifting from the standard practices of publishing research results in scientific publications towards sharing and using all available knowledge at an earlier stage in the research process". (European Commission, n.d.)

1.1 National approach to open science

On 19 January 2017 the State Secretary for Education, Culture and Science sent a letter concerning the topic of open science to the Lower House. In that letter, he confirmed the question to a broad coalition of concerned parties jointly to draw up a National Plan Open Science (OCW, 2017). This document is the response to that request.
The National Plan Open Science follows on from the robust and ambitious Dutch open access policy which the Ministry called for in 2013 (OCW, 2013). Open science, including the open access element, was a top priority during the Netherlands EU presidency. One outcome of the Dutch presidency was the Amsterdam Call for Action (NLU, 2016). It contains a recommendation that each Member State should draw up a National Plan for Open Science. This Call for Action led to Council conclusions (Council of the European Union, 2016) in which the European Member States made agreements pertaining to open science. Those agreements stipulate, among other things, that publicly-funded scientific publications must be accessible to all by 2020. Agreements were also made concerning the optimal reuse of research data, in particular data originating from publicly-funded research. The underlying principle for that research data is that it should be "as open as possible, as closed as necessary."

The National Plan Open Science concentrates on three key areas:

1. Promoting open access to scientific publications (open access).
2. Promoting optimal use and reuse of research data.
3. Adapting evaluation and award systems to bring them into line with the objectives of open science (reward systems).

Re 1

Scientific publications (articles, books or parts of books, reports) which are publicly funded will be immediately and openly accessible to anyone from anywhere in the world and available to them to consult and reuse. At present, most of the publications remain behind a pay-wall, and access is organised through expensive subscriptions.

Re 2

Researchers need to be able, where possible, to reuse the research data of others and to be able to exchange their own research data[2] as easily as possible. At present, research data are not being managed and published in accordance with agreed standards and methodologies and are therefore difficult to find or reuse. The European commitment concerning "text and data mining" or "content mining" is also relevant here.

Re 3

In the present evaluation and reward systems the emphasis is often on the number of publications in prestigious journals with a high impact factor, often produced by well-established publishers and to which there is no open access, thus maintaining the culture of "publish or perish". Open science invites a broader set of evaluation criteria than just research output and research quality, including, for example, the quality of education, valorisation, leadership and good data stewardship.
By adopting this approach and focusing on the abovementioned key areas, the Netherlands hopes to live up to the reputation it has built up as a lead country for open science and to benefit – and enable others to benefit – from the advantages expected of open science as soon as possible.

Other important aspects of open science including, for example, open education, the use of open source software, or citizen science, are not discussed in this Plan, or are merely mentioned in passing. Nor are public and private data, and their reuse, dealt with. The Platform (see Chapter 4) will be able to flesh out these important topics later on.

1.2 Why is open science important?

As a matter of principle, it is important that society as a whole should benefit from publicly funded research. An innovative open model needs to be developed to enable target audiences such as SMEs[3], municipalities and the 'ordinary citizen' to access research results. Moreover, Article 27 of the Universal Declaration of Human Rights provides that "Everyone has the right (...) to share in scientific advancement and its benefits" (United Nations, 1948).

Practical benefits of open science:

- For science, open science results in a more transparent, more verifiable, faster, more efficient, more reproducible and more sustainable research process and, therefore, to the accelerated development of knowledge.
- For companies, open science increases innovative capacity because they can benefit more readily from public information and use it, combined with their own knowledge, to develop innovative products and processes.
- Within society as a whole, social organisations, local and regional authorities, teachers, health care professionals, citizens, patients and other groups and individuals outside scientific circles benefit from open science because they can readily gain access to, and use, scientific information.

Through open science, users 'outside of the scientific community' can influence the world of research with questions and ideas, and help to gather research data. The group of users is as broad as society as a whole. In the education and health care sectors, for example, professionals need scientific information to pursue their occupations. Patient organisations also indicate that they need access to scientific information to be able to inform those they represent and to be interlocutors on an equal footing with health care insurers and pharmaceutical companies. They represent the interests of large groups at all levels of society in an area which many people consider to be important, namely health.

[2] The terms data and research data are sometimes used interchangeably in this Plan. Please note that in both cases the term refers to all kinds of research data.
[3] See the list of abbreviations for all abbreviations used.



"We all need to learn the rules of a different game. In the digital world you will work differently than in the material world. Stop wasting your time fighting for a bigger piece. Digital is nonmaterial, with an unlimited number of products & services. You have much bigger cakes and everyone can be thriving. Sharing can create value. Culture grows when shared, and that characterizes the digital world. So to all 'old' companies and politics: Do not stop progress, that would be bad for the entire country!"

Dirk Helbing, professor ETH Zurich, Switzerland

Caveats can also be applied to the abovementioned benefits. In some cases, full openness at an early stage of the process could result in a competitive advantage being given away and make it more difficult to apply for a patent. Where a researcher is operating at international level, national agreements could have a limiting effect. Attention is also drawn to the need for "professional ripening". A further caveat is that it is not always easy for the average citizen or professional to be able to interpret the scientific process or understand its results properly. On the other hand, a proper understanding is made harder if the citizen has access only to a summary of the article, and the scientific community, or a scientist, could help to facilitate a better understanding of the scientific process within society. See also the AWTI report for details of the required 'translation of science' (AWTI, 2016). Such caveats may result in differing speeds of development, for example, between scientific disciplines. However, the objective remains the same: to share knowledge as quickly, widely and effectively as possible.

1.3 The international playing field

Science knows no borders. A researcher looks for inspiration and collaboration in respect of topics occupying researchers throughout the world. The National Plan Open Science sets out in concrete terms what the Netherlands is doing and what it plans to do, as appropriate in the international context. This is described clearly in the European Commission's publication 'Open Innovation, open science, open to the world – a vision for Europe' (European Commission, Directorate-General for Research and Innovation, 2016a), and the aforementioned 'Council Conclusions on the transition towards an open science system' of the Council of the European Union.

The Open Science Policy Platform, set up in 2016, plays a role in the designing and developing of a European open science agenda (European Commission, Research & Innovation, 2016). This agenda covers a wide range of topics ranging from the sharing of good practices of open science and the development of research infrastructures to the creation of sound incentives for researchers, the guaranteeing of quality, impact and integrity of research, and the embedding of open science in society (including citizen science). Member States will also work together on the advancement of open science through, for instance, the "ERAC opinion on open research data" (European Union, European Research Area and Innovation Committee, 2016, February 3), and the opinion of the High-Level Expert Group on the European Open Science Cloud (European Commission, Directorate-General for Research and Innovation, 2016b) drawn up with the Netherlands playing a leading role.

Open access to publications and open research data are already the standard ("comply or explain") in Horizon 2020, the European Union's research funding programme. Open science is also on the agenda beyond Europe. For instance, in December 2016, it was announced that eight major research funders in the United States have together set up the ORFG, the Open Research Funders Group (Tananbaum, 2016). This initiative is intended to increase access to research results. It involves not only agreeing a coordinated policy to enable access to publications or research data, but also the funding of the necessary infrastructure and proper documentation of the assessment process for applications made to the funds involved.

Access to research data offers opportunities to the scientific community in 'the global south'. With open science, emerging countries, for example, on the African continent, can make a leap forward and improve the quality of their scientific practice. Countries such as China and India have grown into major scientific powers with an output which is relevant to other countries. Promoting open science throughout the world is therefore in our own interest, too. With its European partners, the Netherlands will have to find ways of promoting open science internationally, for example, through UNESCO.

1.4 The creation of this Plan

This Plan describes the open science playing field from the perspective of the parties involved in the Netherlands. What are their plans and ambitions, and how can coherence be brought to them so as to promote and accelerate the development of open science? Various parties were involved in the creation of this Plan, including researchers, but the wide support base of researchers was not actively approached. That role was set aside for the National Platform Open Science.

The parties involved in the development of this Plan are:

- Researchers at universities, the KNAW, The Young Academy, the PhD Candidates Network of the Netherlands and PostdocNL.
- Educational and research institutions and libraries: the VSNU, NFU, VH, the Royal Library, the UKB, and the CvDUR.
- Government policy and funding: Ministry of Education, Culture and Science, Ministry of Economic Affairs, NWO and ZonMw.
- Supporting organisations, platforms in science: DANS, Netherlands eScience Center, DTL, 4TU.Centre for Research Data, SURF, LCRDM, Data4lifesciences and Health-RI.

Open science affects many interested parties, but for the most part they are not all actively involved in the development of open science in the primary and public area or could not be included because of the time available for the creation of this Plan.

The parties with which talks were held are:

- User groups of scientific publications, such as health care professionals, people in education, legal practitioners and patient organisations.
- The business community: high-tech companies with sizeable R&D departments through Business Europe, SMEs, the VNO-NCW, and publishers through the STM organisation.
- Organisations and institutions which exert influence because they are researching research itself: the KNAW as an advisory body of the government, the Rathenau Institute, AWTI and the national UNESCO Committee.

The following chapters deal successively with precisely what the parties involved in this Plan are doing (Chapter 2), and what they will be doing (Chapter 3) to implement open science in the Netherlands. The final chapter (Chapter 4) looks ahead to how the National Platform Open Science can help here.



"Access to scientific publications is hugely important to my work as it enables me to build up knowledge relating to the latest developments in the field of oncology and to share knowledge. I cannot rely on abstracts alone to assess whether a research project is relevant to the KWF's mission."

Wies van Roosmalen, programme coordinator of KWF Kankerbestrijding (Dutch Cancer Society)





"The teachers in our team are always looking for better ways to assist children with their learning. Recommendations from research are tested in practice and evaluated. To support this inquiring attitude of the teachers, I would like to see the unnecessary obstacles to access removed and free access to scientific publications become the norm."

Jacqueline Kenter, head teacher of De Touwladder Primary School

"I need access to scientific publications because the latest insights from science, mathematics and educational theory inspire me and encourage me to continue to develop as a teacher. I need that inspiration to be an inspiring teacher for my pupils. If teachers are unable to gain access to those publications to study the research, for whom are they actually being written?"

Gerardo Soto y Koelemeijer, mathematics teacher

2 What is happening already?

An inventory has been prepared which lists the initiatives which the parties involved are already developing. This list is far from exhaustive and only shows some of the most important initiatives. Additions to the list of initiatives may be made through the openscience.nl website. The initiatives have been classified according to phases in the research process and supporting elements such as training courses, tools and evaluation and rewards.

2.1 Research planning

Many parties are actively involved in open science in the initial phase of the research. There are activities to do with financing, the provision of existing research data and support with the preparation of data management plans. Some parties have also started research involving making data machine readable and storing them in a manner enabling them to be retrieved. Some examples include:

- DANS offers information and support with respect to the preparation of data management plans for projects, including for projects within the framework of Horizon 2020.
- University libraries (together with ICT support staff and policy departments) provide advice, guidance and support to researchers of their own university in the field of data management. The relevant knowledge is exchanged through the UKB. Activities carried out within this partnership include the preparation of inventories of templates for research data management plans, training courses and the reuse of research data. The UKB's Research Data working group has an overview of topics which have been tackled and exchanged over the last three years.
- University of applied sciences' libraries, grouped together in the SHB, provide advice on research and encourage the sharing of knowledge in this area.
- DANS provides access to research data and a research data management system. This is related in part to preparations for research, but also the execution of research.
- NWO has requested a data management plan for all the research it finances and set up a data management policy framework for her institutes.
- The eScience Center supports researchers in respect of data management: it finances research projects, has a software and knowledge platform and provides training for the use of tools in the field of open science.
- A coalition of the VSNU, KNAW, SURF and NWO is examining the possibilities of a system which will allow for uniform recording and exchange of research information. This is also being done by other parties (e.g. NFU) on a discipline-specific basis, for example in the field of research involving human subjects.
- ZonMw is working in a national and international context on policy and supporting researchers so that they can collaborate in research data infrastructures.
- DTL is examining ways of producing data in as compact a form as possible and making them machine-readable, as well as supporting that process.
- SURF is currently carrying out an Open Science Innovation Programme. This programme's ambition is to bring service development and support in line with the needs of researchers, within the frameworks of national and international open science policy. The programme devotes particular attention to the optimal use of compute, data and network services and to providing support in respect of the reuse of research data (data and publications). It ties in expressly with the international context of the European Open Science Cloud and the FAIR data principles.

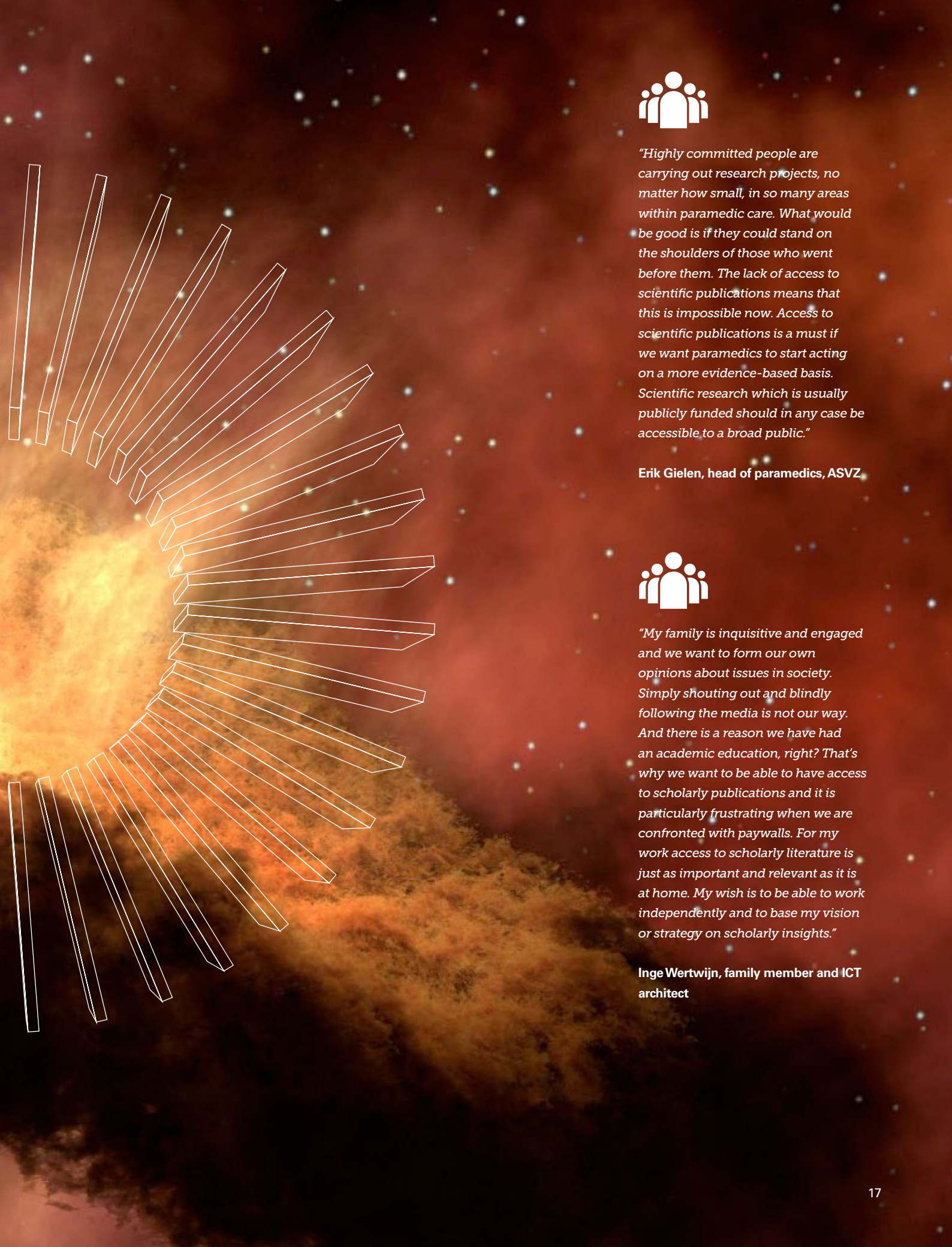
- The National Coordination Point Research Data Management (LCRDM) is a growing partnership of many parties which are engaged in research data management, including the VSNU, SURF, RDNL, UKB and DTL. Since 2015, the LCRDM has been facilitating efficient and effective development and execution of RDM and RDM policy for scientific research in the Netherlands, with the sharing of knowledge and cooperation being the most important cornerstones. The focus is on five core issues, which are dealt with by working groups.
- 101 Innovations in Scholarly Communication, an initiative originating from Utrecht university library, has created a list of available tools to do with open science and continues to examine new possibilities.

2.2 Research activities

Research activities rely on infrastructures (laboratories, collections and other facilities) plus support for the storage, management and analysis of research data. The support is both technical in nature, in the form of repositories and search mechanisms, the provision of facilities and assistance with the processing and analysis of data, and also policy-based, in the form of protocols and guidelines.

Below are examples of facilities and initiatives set up in the Netherlands:

- Universities provide infrastructure for the storage, transfer and automatic documentation of data sets, and help with the creation of metadata. Additional information is usually available through the university libraries. The parties involved can vary; ICT support provided by faculties or more central bodies also helps here.
- The NFU has set up a shared data infrastructure for biomedical research. Data may be stored in it, but are usually reused for new research. A special manual, called 'HANDS', has been developed in order to facilitate data stewardship for the data. DTL is also involved in this.
- Attention to the research facilities needed is also being paid at national level. On the instructions of the Ministry of Education, Culture and Science, the Large-Scale Scientific Infrastructure Permanent Committee has set up the National Roadmap for Large-Scale Research Facilities 2016.
- SURF is coordinating the national e-infrastructure for research and education, for, among other things, access, transport, long-term storage and analysis of research data, including large-scale research data. SURF is also responsible for the coordination and cooperation elements of the e-infrastructure within an international context. SURF is one of the parties in the EOSC pilot (a H2020 project) which is working on the implementation of a coherent international e-infrastructure which is in line with the needs of international research.
- DANS, SURF and the 4TU. Centre for Research Data provide data labs for the storage and combining of research data.
- The eScience Center ensures that the entire scientific community has public access, on an open-source fully documented basis, to research data related to all research projects involving Dutch universities, through the eScience Technology Platform and open platforms such as GitHub and Zenodo. The eScience Center also makes an active contribution to the continued development and Dutch use of the most promising software and tools in the field of open science. Examples include the Common Workflow Language, for the description of analyses and the use of software, and Docker, which can be used to create a durable record of software for reuse. Both assist with the reproducible performance of analyses irrespective of the computer or environment.
- The UKB is examining which data policy is needed and which data principles should be applied for open science. The LCRDM is supporting the coordinated policy development and implementation.



"Highly committed people are carrying out research projects, no matter how small, in so many areas within paramedic care. What would be good is if they could stand on the shoulders of those who went before them. The lack of access to scientific publications means that this is impossible now. Access to scientific publications is a must if we want paramedics to start acting on a more evidence-based basis. Scientific research which is usually publicly funded should in any case be accessible to a broad public."

Erik Gielen, head of paramedics, ASVZ

"My family is inquisitive and engaged and we want to form our own opinions about issues in society. Simply shouting out and blindly following the media is not our way. And there is a reason we have had an academic education, right? That's why we want to be able to have access to scholarly publications and it is particularly frustrating when we are confronted with paywalls. For my work access to scholarly literature is just as important and relevant as it is at home. My wish is to be able to work independently and to base my vision or strategy on scholarly insights."

Inge Wertwijn, family member and ICT architect



"Where Society feels the need to understand the world it regularly turns to the scientific community for analysis, insight and answers. Open science allows the public and scholars to keep the dialogue open as it enables all of us to provide a solid basis for decision making and develop opportunities for the future. I hope it provides also a source of inspiration for young generations of researchers."

Ben Feringa, professor University of Groningen

[4] Some of the links may not have an English version.

2.3 Research results

Many of the current open science activities are geared towards the publishing, dissemination and long-term archiving phases. RDM policy, aimed at the reuse of data, affects all phases of the research process. Infrastructures and/or support are available for the archiving and long-term accessibility of research results:

- Where possible, NWO requires 'immediate open access' for all research it funds and for research carried out at her own institutes. NWO is developing and implementing policy in respect of monitoring and compliance.
- The VSNU is negotiating with major publishers to ensure there is direct open access to publications. Additional information on the strategy and specific state of affairs may be found in the VSNU's E-zine and at openaccess.nl.
- The KNAW has pooled opinions and experiences of researchers to do with open access.
- CLARIAH is the research infrastructure available for Humanities (which is also geared towards the analysis phase).
- All universities have their own repositories. A national policy was recently determined whereby scientific output must be stored in trusted repositories. The university libraries are helping researchers in this process. Some universities also have open access funds, which they use to reimburse their researchers the costs that may arise when articles are published directly in full open access journals.
- Repositories such as the much-used Sharekit[4] and a higher professional education knowledge base are available for universities of applied sciences. The Practice-oriented Research Podium has also been set up, and the OPUS-platform has been formed in collaboration with various universities. Support for open access is offered through the network of copyright information points within higher professional education, the NAI HBO. In collaboration with SURF, HKI and NRPO-SIA, a plan is being developed for better access to research results.
- The Royal Library (KB) functions as a guide for the public at large in order to improve access to open access publications. It is collaborating with public and university libraries.
- The Royal Library is organising the long-term storage of and access to Dutch cultural and scientific textual heritage. It makes data available to the scientific community through Data Services. The Royal Library functions as one of the cornerstones of the Digital Heritage Network (resulting from the National Digital Strategy) in collaboration with the National Archive, the Netherlands Cultural Heritage Agency, the Netherlands Institute for Sound and Vision, and Digital Heritage Netherlands.
- Research Data Netherlands is a partnership involving 4TU.Centre for Research Data, Data Archiving and Networked Services (DANS) and SURFsara. With this coalition, the three data archives join forces in the field of long-term data archiving.
- The Health-RI-initiative is an open national platform whose aim is to link and develop existing infrastructures, such as biobanks, population cohorts, data collections, imaging collections and experimental facilities, with the objective of supporting and encouraging inter-disciplinary research in the field of personalised medicine & health.
- It costs money to invest in and maintain a new infrastructure. The LCRDM has begun a survey to identify the financial implications of responsible storage and to make recommendations in this regard.
- At international level, there are developments where elementary collections of reference data are put together in international repositories. This is taking place in particular with regard to life sciences.

2.4 Training courses and technical tools

Training courses are available to provide support and technical tools are being developed to allow online collaboration and exchange of information. Providers include private and also public organisations:

- Training courses for researchers through universities and universities of applied sciences. Additional information on this may be found through the websites of the university library or university of applied sciences concerned.
- Research Data Netherlands, a partnership involving 4TU. Centre for Research Data, DANS and SURFsara, offers the Essentials 4 Data Support course for support staff.
- Training courses for research are provided through SURF. In addition to training courses, SURF provides consultancy and, under the name Support4research, is geared towards the connection between research support at institutional level and support provided by SURF.
- The eScience Center offers training courses such as 'data carpentry' and 'software carpentry' which focus entirely on open science and open source. Such training courses, in particular those aimed at making data FAIR, are also provided by DTL in the context of ELIXIR.
- The PhD Candidates Network of the Netherlands actively emphasises the importance of providing researchers in the Netherlands with the best possible training in the skills required to be able to carry out open science.

2.5 Evaluation and rewards

In many cases, there is an absence of explicit rewards for the efforts made and results achieved by researchers in the field of open science. It was argued in the Amsterdam Call for Action and also in the recent Parliamentary letter that rewards are an important condition for transition. Naturally, a methodology for evaluation is also required. Developments which are already underway include:

- The SEP - the methodology used to evaluate institutes, institutions and universities. It describes, among other things, how such an evaluation is performed and the responsibilities of the various actors. The new protocol used within UMC Utrecht, for example, for the SEP stipulates explicitly that "the unit of assessment promotes open data and reproducibility." It also proposes a number of indicators, such as "Availability of data management plans" and "Publication of raw data or availability of data for external use".
- The Protocol for Research Quality Assurance in Higher Professional Education (BKO) for universities of applied sciences contains elements of open science, but also other criteria allowing institutions an option to choose.
- To support the general research evaluation systems, DANS, in collaboration with DTL, is developing a system for the assessment of research data in accordance with the FAIR principles.



"We need a "Deltaplan for Science in Transition". We need to start rewarding scientists for research which has an impact, or has the potential to have an impact. For this to happen, scientists will have to ask the right questions, consult with parties in society, use the correct methods and store and disclose the data properly. Once we start doing that, there may be repercussions as regards the way in which we distribute funds. No longer on the basis of publications (or numbers of doctoral programmes or numbers of students) alone, but on the basis of many more indicators. It will probably be a complicated business to change the entire system, but we do need to make a start. The intention continues to be to reward excellence, but to define it differently. This is essential in health care. Assessing scientific quality on the basis of publications results in differences in valuation, with genetics and molecular biology, for example, being valued more highly than general medicine or rehabilitation science, whilst the differences in valuation are unjustified by the greater impact on patients."

Frank Miedema, professor UMC Utrecht



"Let's build a new publishing system that offers openly, globally and perpetually accessible science. That was my original thought and I have made it a reality by launching SciPost. Most importantly, there are no fees for access, and no fees for publication in all of our journals. All contributors to SciPost are professionally-active scientists dedicated to serving their community, and to realizing the dream of true openness in scientific publishing. We enforce the highest refereeing standards with our innovative peer-witnessed refereeing methods, while maintaining much lower operational costs than traditional/corporate publishers. The small financial backing needed by the SciPost Foundation is coordinated under our Supporting Partners programme, and is sought from organizations which are positively impacted by the Foundation's activities, directly or indirectly, i.e., funders, universities, libraries, academic consortia, governmental bodies and anyone interested in ensuring a proper and healthy future to scientific publishing."

Jean-Sebastien Caux, professor
University of Amsterdam



3 Dutch ambitions

The many activities described in Chapter 2 offer the opportunity for development and acceleration. The ambitions formulated by parties involved for the years to come are set out below. In principle, this involves the period 2017-2020, but some ambitions have a longer completion time. The ambitions are classified in accordance with the aforementioned key areas for open science: Full open access to publications (paragraph 3.1), making research data optimally suitable for reuse (paragraph 3.2) and research evaluation: recognition of and rewards for researchers (paragraph 3.3). The topic 'Promoting and supporting open science' has been added (paragraph 3.4). Finally, one more paragraph 'Further research' has been included.

3.1 Full open access to publications

The ambition of the Netherlands is to achieve full open access in 2020. The principle that publicly funded research results should also be publicly accessible at no extra cost is paramount. Until the ambition of full open access to publications in the Netherlands and beyond is achieved, access to scientific information will be limited for the majority of society. With the ambitions set out below, coalitions of the parties concerned are planning to take further concrete steps. The ambition of 100% open access in 2020 asks universities to flesh out in the intervening years how to embed open access publications in the research evaluation system.

3.1.1 Ambition: broaden administrative support base

To reach full open access the continuation of support, commitment and cooperation between the parties involved, with a focus on further joint development of policy and implementation of that policy is of the utmost importance. Furthermore it remains crucial that the government and political bodies, in particular the Ministry of Education, Culture and Science, continue to play their part.

Responsible coalition:
KNAW, NWO, VSNU, NFU, VH, and PNN[5]

Indication of the timeline:
- At least up to the year 2020, in view of the timeframe of the declared ambition.

3.1.2 Ambition: broaden European and worldwide support base

Further development of the lobby, knowledge-sharing and cooperation in respect of open access within the European Union and with countries actively engaged in open access, including Finland, Germany and Austria. Developments in Europe are being monitored and contributions are made to those developments where necessary. It remains crucial that the government and political bodies, in particular the Ministry of Education, Culture and Science, continue to play their part.

Responsible coalition:
KNAW, NWO, VSNU, VH, KB, PNN, SURF (and later Neth-ER too)

Indication of the timeline:
- At least up to the year 2020, in view of the timeframe of the declared ambition.

[5] The order in which the Parties are listed in this and following responsible coalitions is randomly chosen.

3.1.3 Ambition: open access for knowledge institutions and research disciplines

Open access will be realised and reach the very capillaries of all knowledge institutions and research disciplines. Everyone has to take part in this: all knowledge institutions and research disciplines need to have an open access policy. 100% open access for all research disciplines means that differences between disciplines and types of research (e.g. applied research) will be taken into account, and therefore customised approaches are possible. There is a need to stimulate a change in behaviour to reach 100% open access (see also 3.1.4 and 3.3). Furthermore it is necessary that all Dutch research organisations and research disciplines are able to apply a financial model and corresponding work process suitable for open access publishing.

Responsible coalition:
VSNU, NFU, SURF, KNAW, NWO, VH, KB, PNN, HKI and NRPO-SIA, and (joining later) PostdocNL

Indication of the timeline:
- Formulating the necessary policy objectives and starting to initiate the necessary steps towards 2020: 2017.
- Implementing the policy, so that it will be fully effective everywhere as of 2020, both in organisational terms and in respect of ICT facilities: 2017-2018.
- Jointly listing current well-functioning business models, and identifying disciplines where the new business model is less fitting: 2017.
- Developing and testing alternative business models and corresponding work processes, in particular against an international context: 2017-2018.
- Implementing (new) business models and refining work processes: 2018-2020.

3.1.4 Ambition: no non-disclosure licensing agreements

Non-disclosure agreements[6] do not match with open science. Transparency of costs should be a condition for all licensing agreements (with open access as a component). If legally possible, universities would like to make the costs of these agreements publicly available via the "Wet Openbaarheid van Bestuur". A legislative regulation requiring this transparency would prevail, and is being investigated, together with OCW.

Responsible coalition:
VSNU (if relevant together with OCW)

Indication of the timeline:
- 2017 and beyond.

3.1.5 Ambition: anchoring open access

The right to open access publishing is laid down in the copyright law in the Netherlands. This still needs to be better communicated to researchers for the best result. The parties involved are set to launch a campaign aimed at increasing the uptake of open access publishing by researchers. In addition, attention needs to be paid to the ownership of scientific publications to encourage reuse, without additional costs.

Responsible coalition:
VSNU, NWO, VH and PNN, and (joining later) PostdocNL

Indication of the timeline:
- At least up to the year 2020, in view of the timeframe of the declared ambition.



"On 18 January 2017 a round table conference took place with a view to starting to prepare a roadmap which will result in a publicly accessible and open legal knowledge infrastructure for scientific and practice-oriented legal information and for government publications in the legal field. This infrastructure must be able to operate with the standards developed by legal experts (Juriconnect) so that the data are not only open, but also readily accessible and capable of being linked and analysed."

Ton Hol, Chairman of the Board of Deans of the Law Faculty

[6] In this context: non-disclosure agreements related to the costs of open access publishing.

"My recruitment experience at the Champalimaud was unusual. I had learned to present relatively conservative future plans at other institutes, to prove the feasibility and immediate fundability of my research. When I started describing the very predictable "next experiments" I would do at the Champalimaud, however, my future colleagues interrupted me. "Is that what you really want to do?" they asked. It wasn't, actually, and it was liberating to be able to admit it. I had found a place that cared about my big ideas and that didn't want me wasting time on more feasible experiments before pursuing them. I took the job at this private institute, where not just my colleagues but also the structure of the position encouraged me to pursue creative new directions. The renewable 6 year appointments, with review after 3 years, come with internal funding for startup and running costs that are sufficient to run a small lab. In my case, this seed funding allowed me to attract additional flexible external funding from the Howard Hughes Medical Institute (which funds "people, not projects"), and to build a new research program that now forms the basis of my ERC grant. The environment at the Champalimaud has enabled my colleagues and me to take big risks and succeed in unexpected ways."

Megan Carey, principal investigator Champalimaud Research, Portugal

3.1.6 Ambition: open access for society at large

Free access to scientific publications is only the first step: understanding where you can find the publications, understanding the publications and how you can use them is step two. The scientific information landscape is diverse, continuously changing and there is more than one way of gaining access to it. The public at large will therefore benefit from an organisation which plays a guiding role.

Responsible coalition:

KB, supported by public libraries, including Plus libraries (public libraries with a collection of scientific literature for readers at higher professional education level and above) with parties operating in the field of science communication.

Indication of the timeline:

- Work out the guide function in greater detail and organise access: 2017-2018

3.2 Making research data optimally suitable for reuse

The aim of open science is to ensure that researchers reuse research data and services of others where possible and make their own data as easily accessible as possible. To that end, the data first need to be stored and described so as to make them accessible for reuse and to allow research to be reproduced. Technical and also policy-based preconditions must be met to enable research data to be stored in this way, including during the conducting of a research project. Expectations are that a substantial part of those preconditions will be discipline-specific. The facilitating role other parties – such as publishers – could play here requires further elaboration.

3.2.1 Ambition: a consistent system to allow FAIR access to research data

Practical execution and implementation of FAIR criteria within technical and policy-based preconditions.[7] The following elements are addressed here:

- Interoperability: select standards to ensure data can be readily found, accessed, exchanged and cited. Computer programs and people need to be able to read and find the data.
- Rules and agreements ("rules of engagement") for this element of open science.
- The way in which these research data are currently accessible for straightforward and effective reuse by third parties.
- Documentation for the purposes of verification. This means that details of all research steps and analyses completed in order to derive the final research data and results from the raw data must also be supplied.
- Guidelines pertaining to privacy, ownership rights, rights of reuse and the durability of public and also private facilities within which research data are shared.

Responsible coalition:

- For the determination of the policy framework: KNAW, NWO, ZonMw, VSNU (in collaboration with UKB), VH, NFU, and PNN, with the subsequent support of the LCRDM and other parties including the NCDD.
- For the drawing up of protocols, where necessary, for each discipline: GO FAIR, DANS, SURF, 4TU.Centre for Research Data, NFU and DTL in collaboration with representatives of the disciplines, and large-scale infrastructures (including Health-RI), taking into account public-private partnerships.

Indication of the timeline:

- Policy framework: end of 2017.
- Preconditions: as of the end of 2018.

[7] Consideration should be given to everything that is happening, and has happened, within the disciplines, for example, in relation to research into the human genome, climatology and particle physics.

3.2.2 Ambition: long-term storage and provision of research data for the purpose of access

Keeping research data permanently available is costly and it is not always expedient to do so ad infinitum. Critical selection at the start ('which data really need to be preserved') and an active de-selection policy ('do data still need to be preserved after a certain period') remains necessary to contain the total volume of data and to keep the costs under control. As far as possible, the strategy to be followed should be determined at the beginning of the research project. The criteria required for that determination may be laid down in discipline-specific protocols.

Responsible coalition:

- For the determination of the policy framework: KNAW, NWO, VSNU (in collaboration with UKB), VH, NFU, PNN and KB, and supported by the LCRDM, and possibly ZonMw.
- For the drawing up of preconditions, where necessary, for each discipline: GO FAIR, DANS, SURF, NFU, and DTL in collaboration with representatives of the disciplines.

Indication of the timeline:

- Policy framework: 2018.
- Preconditions: it is difficult to say at the moment. Once the policy framework has been completed, we will be able to prepare a baseline measurement of the state of affairs in the Netherlands (and taking account of international developments) and it might be possible to issue a follow-up timetable.

3.2.3 Ambition: having the technology available for the long-term storage of research data for the purpose of reuse

It is necessary to ensure that it is also possible to store research data in a consistent, reliable and sustainable manner.

In any event, to achieve that ambition it will be necessary:

- to define the characteristics of an approved data repository, using all the certifications and initiatives for this purpose already in place at international level.
- to list the repositories already in existence and their status (at international level).
- to create new, sector-wide data repositories, if required on the basis of the above aspects.
- to actively encourage open-source software and tools which will allow all science workflow to be recorded and produced in the future.
- to include software sustainability: to ensure the long-term storage of the software "belonging to" the research data itself as well.
- to develop tools to enable all data repositories to be searched, data to be linked, etc. (and to ensure that any new data repository if created meets the minimum required standards).

GO FAIR, the European Open Science Cloud pilot, and also the LCRDM have already made preparations in respect of these points and it would be useful to adopt them and develop them further in the Dutch context. Since January 2017, SURF has been involved in the EOSC pilot where the support, governance and financing models for an integrated European e-infrastructure are being explored with a broad coalition of European partners. Experiences from the EOSC pilot are being linked to GO FAIR pilots within the SURF Open Science programme in advanced user pilots.

GO FAIR is the working title of the international strategy for boosting developments aimed at achieving the desired 'Internet of FAIR data and Services'. It is an open and inclusive consortium launched by several progressive and enthusiastic EU Member States.





The storing and sharing of data will require a reinforcement of the infrastructure, including the ICT infrastructure, and this will involve costs. The Permanent Committee for Large-Scale Scientific Infrastructure is preparing an advice concerning the ICT infrastructure for the Netherlands. Expectations are that this advice will be delivered during the spring.

Responsible coalition:
GO FAIR, SURF, DANS, DTL, 4TU.Centre for Research Data, eScience Center, PNN, and (yet to join) Health-RI, Target Groningen.

Indication of the timeline:
- To be determined later on.

3.3 Recognition of and rewards for researchers

The current evaluation systems do not provide sufficient incentives for scientific practice based on the open science criteria. In the present assessment system, the number of publications in journals that have historically been highly regarded and have a high impact factor plays a substantial role. As a result, the "publish or perish" culture is maintained. Technical and practical support are not enough to speed up the process of open science. Practising open science requires encouragement and reward. To promote open science in the first, second, third and fourth "flow of funds" within an institute, it is important to investigate how open science can be an element in the evaluation of researchers and research proposals. The important work required to enable research data to be shared, in part carried out by data stewards or data engineers, is often given too little credit. It is difficult to make such efforts visible by the traditional way of citing. When open science criteria in future are part of research evaluation, it is important that account should be taken of the context in which researchers operate: they want to be recognised internationally and to be distinctive. Furthermore, care must be taken to ensure that the way science is practised in the natural sciences does not dominate the transition towards open science. The National Platform Open Science should be aware of the major differences between scientific disciplines.

3.3.1 Ambition: to examine how the Standard Evaluation Protocol (SEP) could facilitate the transition towards open science

In its current form, the SEP provides possibilities for the inclusion of indicators for open science. What's more, it is important that those indicators are in fact selected and used by the units of the institutes under evaluation. In the forthcoming interim assessment of the current SEP protocol extra attention will be given to the topic of open science and, if needed, recommendations for adjustments to increase usage will be formulated for the next SEP.

Responsible coalition:
NWO, KNAW, VSNU, possibly ZonMw

Indication of the timeline:
- Mid-term review will take place in early 2018.

3.3.2 Ambition: to examine how open science can be integrated within the evaluation of researchers and research proposals

Open access publishing will be the norm and the importance of sharing the research process is more and more recognised. Therefore, consideration will be given as to how open science can be integrated within the personnel policy of institutions.
The coalition will start this by first examining alternative indicators (altmetrics) for the assessment of researchers.

NWO is already examining more than just publication lists when carrying out assessments. NWO is requiring open access and data management plans from researchers. NWO will take the challenge to accommodate open science in the broader context in the assessment of research applications. A study will be launched for this purpose. Efforts will be made to tie in with international developments.

Responsible coalition:
NWO (funders), VSNU (institutions), VH (institutions)

Indication of the timeline:
- The study will start in the course of 2017.

3.4 Promoting and supporting open science

Research often exceeds the limits of departments, institutions, countries and, to an increasing extent, disciplines, too. However, support in the form of expertise and facilities is usually organised within those limits. Viewed from the research process it is fragmented, although researchers often know perfectly well what is going on within their disciplines and what is relevant to them. The useful additional facilities on offer are not immediately apparent to the researcher; conversely, those facilities need not necessarily be adapted to his or her specific needs. Meanwhile, successful practical examples are relatively unknown and economies of scale are missed.
Effective support for open science requires a coordinated approach. A stated ambition of the European Open Science Cloud is to establish links between research infrastructures and thus facilitate the availability of research results. With its strong culture of cooperation and limited geographical size, the Netherlands is ideally placed to inspire as many countries as possible as a frontrunner in this movement. The National Platform Open Science (see Chapter 4) could play an important role here.

3.4.1 Ambition: to create a broadly supported portal for researchers and support staff which handles requests for support and information and referrals to the appropriate agency

All information concerning the available research support should be readily accessible in this 'clearing house'. This requires organised cooperation among research support staff. A multi-faceted approach should be chosen here: Aim for primary support staff, ICT decision-makers and research directors.
The digital scholarship centre e-Humanities could be used as an initial pilot here.

Responsible coalition:
For its development: NWO, VSNU, VH, UKB, KNAW, SURF, LCRDM, DANS, 4TU. Research Data, eScience Center (ePLAN), GO FAIR, DTL, and the NFU
For the implementation: UKB, SURF, and eScience Center (ePLAN)

Indication of the timeline:
- First meeting to discuss competences: second quarter of 2017.
- List of bodies and meeting agenda for OpenScience.nl: third quarter of 2017.
- Incorporation of results and 'address' in the Platform: fourth quarter of 2017.

3.4.2 Ambition: discipline-specific agreements concerning the development of research support

The precise structure of research support will differ from discipline to discipline. Discipline-specific agreements may be initiated only by the scientific community itself. This will require a careful approach and the involvement of the right scientific bodies.

"The Committee for scientific transparency, data storage and reproducibility is active within the Social Sciences disciplinary consultation. Based on a list of the research protocols within social sciences at Dutch universities, the committee is currently in the process of drawing up a protocol. The intention is that this should be a guide with regard to data packages and data management within social sciences. As a Social Sciences Disciplinary Body we are committed, being the relevant faculties, to making joint agreements on how we deal with such data. In future, this will facilitate further the accessibility and exchange of research data and benefit our science."

Daniel Wigboldus, hoogleraar Radboud Universiteit

Responsible coalition:
NWO, GO FAIR, ZonMw, UKB

Indication of the timeline:
- First meeting and incorporation of the results in the Platform: second quarter of 2017.

3.4.3 Ambition: to involve researchers in the transition towards open science

Allow researchers, including junior researchers, to respond to the National Plan Open Science and contribute to the National Platform Open Science (online by 09/02/2017). Keep the dialogue with the entire research community open regarding the further development and implementation of the ambitions named in this Plan. Articulate the requests for support from the scientific community. Use best practices to illustrate what helps the researcher and professor at universities of applied sciences to conduct sound research.

Responsible coalition:
The Young Academy, PNN (together with PostdocNL), UKB (together with 101 Innovations), DTL (together with ePLAN), and with the subsequent support of the Association of 'Lectoren' (research professors at Universities of Applied Science)

Indication of the timeline:
- Organisation of the initial event: second quarter of 2017.

3.5 Further research

Topics requiring further research include:
- A study to establish the impact of and incentives for open science in order to foster the use of open science (making use of studies already available, including an expected policy memorandum for the VSNU by LCRDM).
- A study to establish the qualitative and quantitative need for data stewards and research software engineers in the Netherlands, the content of their role, the training required, and the rewarding of their work.
- Economic approach of open science. Develop business cases (for the time being limited to open access and research data):
  - How do we cover: the costs for building and maintaining infrastructure; the costs for training and deploying data stewards?
  - Which benefits or advantages can be expected from the reuse of research data? How will research become more efficient, cheaper or more reliable through the reuse of research data?
  - Costs and benefits of open access publishing in the Netherlands.
- An investigation into the matter of ownership of research data and how to make optimum use of this in the public-private playing field. In other words, not just the scientific community which makes the research data available and the business community which converts these data into new information and sells them, but also the awareness that e.g. financial institutions are in possession of data which academic economists would gladly use for research. This should result in a code of conduct or the formulation of principles for the business community and scientific community (or tighter opt-out criteria). This has been raised as an item for discussion by the LCRDM's Legal Aspects working group.
- A study with regard to, and consultation on, the costs associated with open access.





4 National Platform Open Science

Achieving open science requires the commitment and dedication of many parties. On the one hand, it involves the parties concerned taking responsibility and, on the other, coordinating and linking the ambitions. In so doing, the parties concerned are responding to the request of the State Secretary for Education, Culture and Science, and the Netherlands is implementing the collectivity called for by the European Council Conclusions. To show their commitment to the National Plan Open Science, the parties concerned signed the Open Science declaration on 9 February 2017. The delivery of this Plan is just the beginning. The National Platform Open Science has been created to show the joint and coordinated commitment to open science and to promote its importance.

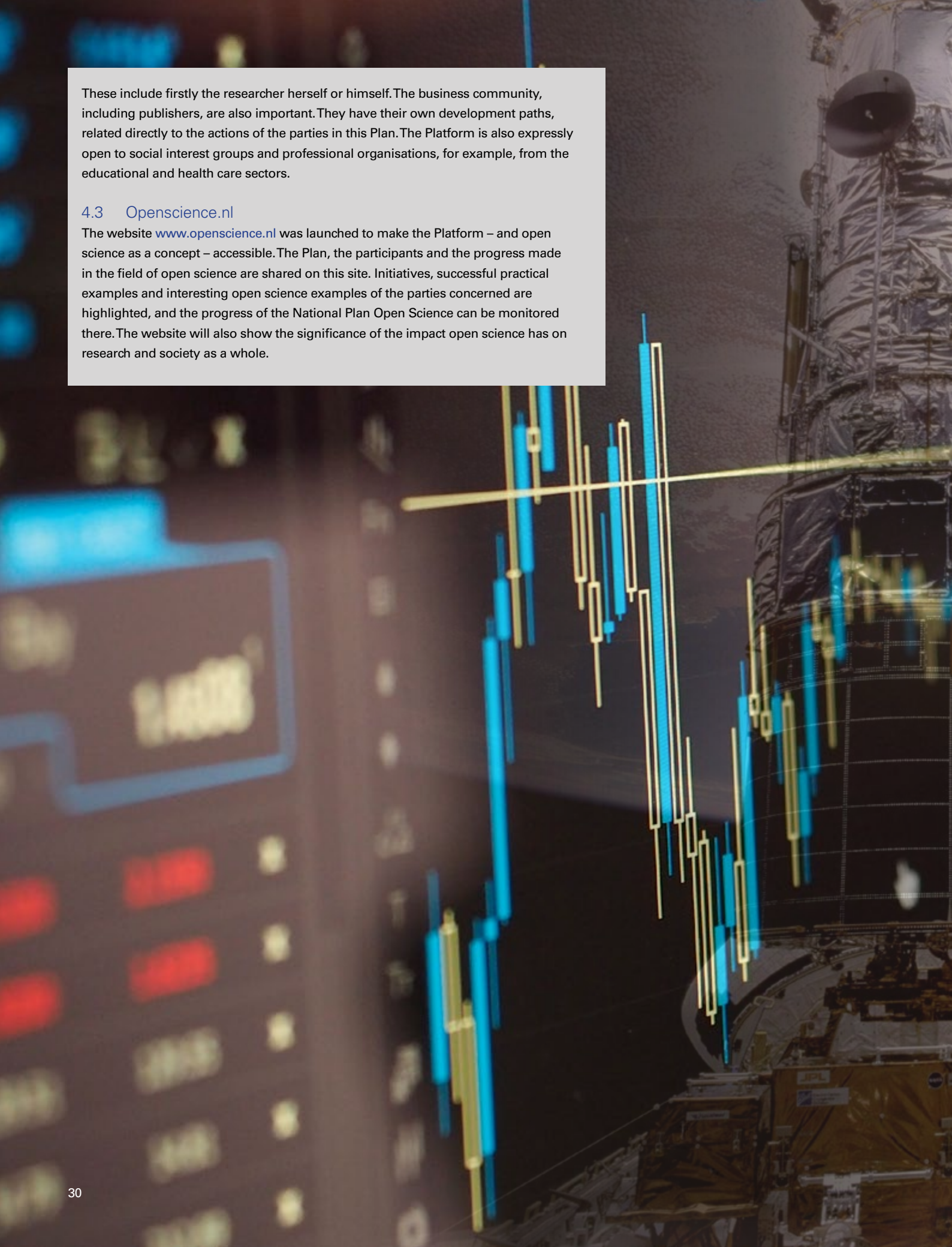
4.1 The National Platform Open Science

The parties involved in the National Plan Open Science come together in the Platform, supported by the Ministry of Education, Culture and Science, which will organise the set-up of the Platform, including a secretarial office and the website. The Platform will ensure that the Netherlands progresses with the realisation of the ambitions and will follow developments closely. To be able to monitor progress properly, the parties will have to agree on quantitatively and qualitatively measurable elements which are in line with existing national and European monitoring, such as the regular report the VSNU draws up with regard to the growth of the share of open access publications. This should not involve a heavy administrative burden. The Platform is also the place to share knowledge and experience and establish links. The LCRDM shows that this can be done successfully. In this way, acceleration can take place through the sharing of knowledge and skills. The Platform will be able to respond to new developments in the field of open science, which could entail additional actions that have to be taken. The focus for the Platform is to create acceleration in respect of the three key areas: 1) Full open access publishing; 2) optimal reuse of research data; and 3) corresponding evaluation systems for recognition and rewards. However, open science is broader: Other areas requiring attention may, if expedient, be raised within the Platform over time.

4.2 Organisation

The parties involved in the National Plan take part in regular consultations within the Platform. The external secretarial office supports the chairman of the Platform (OCW) in terms of logistics and also content, is the contact point for Dutch and international parties, and assists the Platform with the performance of its functions. The Platform will also have a steering group, which will consist of executives of the parties involved and will meet less frequently.

In addition to the organisations which have linked up to the Platform through the National Plan Open Science, there are other parties playing a role in the realisation of open science. The more parties willing to play an active part, the better able we will be to achieve the national ambitions. Active interested parties may join the Platform.



These include firstly the researcher herself or himself. The business community, including publishers, are also important. They have their own development paths, related directly to the actions of the parties in this Plan. The Platform is also expressly open to social interest groups and professional organisations, for example, from the educational and health care sectors.

4.3 Openscience.nl

The website www.openscience.nl was launched to make the Platform – and open science as a concept – accessible. The Plan, the participants and the progress made in the field of open science are shared on this site. Initiatives, successful practical examples and interesting open science examples of the parties concerned are highlighted, and the progress of the National Plan Open Science can be monitored there. The website will also show the significance of the impact open science has on research and society as a whole.



Thanks

Between the beginning of November 2016 and the end of January 2017 the drafting team was hard at work gathering the relevant information, speaking to the various parties involved and establishing coherence in respect of that which has already happened or is happening in connection with open science in the Netherlands. We would like to thank most warmly everyone we have spoken to, and those who supplied us with input for the 80% version of the Plan, or helped in any other way. The end product has become a shared result of all the parties involved and gives us much confidence in the follow-up.

Below, in random order, are the people we spoke to or who made a valuable contribution to the completion of this document, with apologies to any other people we may have omitted to mention.

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Reference list

AWTI. (2016). Durven delen: op weg naar een toegankelijke wetenschap. [Dare to share: on the way to accessible science]
Retrieved from https://english.awti.nl/documents/publications/2016/01/20/dare-to-share

Council of the European Union. (2016). Council conclusions on the transition towards an Open Science system, adopted by the Council at its 3470th meeting held on 27 May 2016 (No. 9526/16).
Retrieved from http://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf

European Commission. (n.d.). Open Science (Open Access).
Retrieved from https://ec.europa.eu/programmes/horizon2020/en/h2020-section/open-science-open-access

European Commission, Directorate-General for Research and Innovation. (2016a).
Open Innovation, Open Science, Open to the World: a vision for Europe.
doi: 10.2777/061652

European Commission, Directorate-General for Research and Innovation. (2016b).
Realising the European Open Science Cloud: first report and recommendations of the Commission High Level Expert Group on the European Open Science Cloud.
doi: 10.2777/940154

European Commission, Research & Innovation. (2016). European Open Science Policy Platform.
Retrieved from http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-policy-platform

European Union, European Research Area and Innovation Committee. (2016, February 3).
ERAC Opinion on Open Research Data (ERAC 1202/16).
Retrieved from http://data.consilium.europa.eu/doc/document/ST-1202-2016-INIT/en/pdf

NLU. (2016). Amsterdam Call for Action on Open Science.
Retrieved from https://english.eu2016.nl/documents/reports/2016/04/04/amsterdam-call-for-action-on-open-science

OCW (2013, 15 November). Open Access for publications [Parliamentary letter].
Retrieved from https://www.government.nl/documents/parliamentary-documents/2014/01/21/open-access-to-publications

OCW (2017, 19 January). Progress made with open science [Parliamentary letter].
Retrieved from https://www.government.nl/documents/letters/2017/01/19/letter-to-the-house-of-representatives-on-the-progress-of-open-science

Tananbaum, G. (2016, December 15). Prominent Funding Organizations Team Up to Launch Open Research Funders Group.
Open Research Funders Group News.
Retrieved from http://www.orfg.org/news/

United Nations. (1948). The Universal Declaration of Human Rights. Article 27.1.
Retrieved from http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf

Abbreviations

AWTI	Advisory Council for Science, Technology and Innovation
BKO	Protocol for Research Quality Assurance in Higher Professional Education
CLARIAH	Common Lab Research Infrastructure for the Arts and Humanities
CvDUR	Board of Directors of University Computer Centres
DANS	Data Archiving and Networking Services
DOI	Digital object identifier
DTL	Dutch Techcentre for Life Sciences
EOSC	European Open Science Cloud
ePLAN	Platform of eScience & Data Research Groups of The Netherlands
EU	European Union
EZ	Ministry of Economic Affairs
FAIR	Findable, accessible, interoperable, reusable
GO FAIR	Global Open Findable, Accessible, Interoperable, Reusable
H2020	Horizon 2020
HANDS	Handbook for Adequate Natural Data Stewardship
HBO	Higher professional education
HKI	HBO knowledge infrastructure
ICT	information and communication technology
KB	National Library of the Netherlands
KNAW	Royal Netherlands Academy of Sciences
LCRDM	National Coordination Point Research Data Management
MKB	SME – Small and Medium sized Enterprises
NAI HBO	Network of copyright information points from higher professional education
NCDD	Netherlands Coalition for Digital Preservation
NFU	Dutch Federation of University Medical Centres
NRPO-SIA	Netherlands Initiative for Practice-oriented Research - SIA [Foundation for Innovative Alliance]
NWO	Netherlands Organisation for Scientific Research
OCW	Ministry of Education, Culture and Science
OPUS	Open Access Publishing Services
ORFG	Open Research Funder Group
PNN	PhD Candidates Network of the Netherlands
RDM	Research data management
RDNL	Research Data Netherlands
SEP	Standard Evaluation Protocol
SHB	Consortium of University of Applied Sciences Libraries
STM	Scientific, Technical and Medical publishing
SURF	Collaborative organisation for ICT in Dutch education and research
UKB	Consortium of Dutch University Libraries and the National Library
UNESCO	United Nations Educational, Scientific and Cultural Organization
VH	Netherlands Association of Universities of Applied Sciences
VNO-NCW	Confederation of Netherlands Industry and Employers
VSNU	Association of universities in the Netherlands
ZonMw	Netherlands Organisation for Health Research and Development



Colophon

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