

Recommendations for the Transition to Open Access in Austria

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Working Group [National Strategy](#) of the Open Access Network Austria (OANA) & [Universities Austria](#) (uniko)¹

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¹ (a) The [first version](#), published on 30/11/2015, represents recommendations of the expert group “National Strategie” of the Open Access Network Austria. This version, published on 23/5/2016, includes amendments of Universities Austria.
(b) For better readability we have dispensed with footnotes as far as possible. Sources have been highlighted as blue hyperlinks in the text. If not stated otherwise, the citations underlined blue in the text have been taken from the [Open Access Testimonials](#) of more than 40 top-ranked scholars from Austria in 2012. Finally, Michela Vignoli (AIT), Martina Kunzmann (FWF), Klaus Zinöcker (FWF), Ralph Reimann (FWF), Petra Grabner (FWF) and Eugen Banauch (FWF) are thanked for their helpful comments.

Summary

Scholarly knowledge is a public good, rendered useful only when it is shared and utilised. Publications are the core product of scholarship. Since the digital revolution has made a large body of information accessible from every place and at all times, the aim of **Open Access** is to provide all **academic publications** free of charge on the internet. This will be beneficial not only to research, but to society at large:

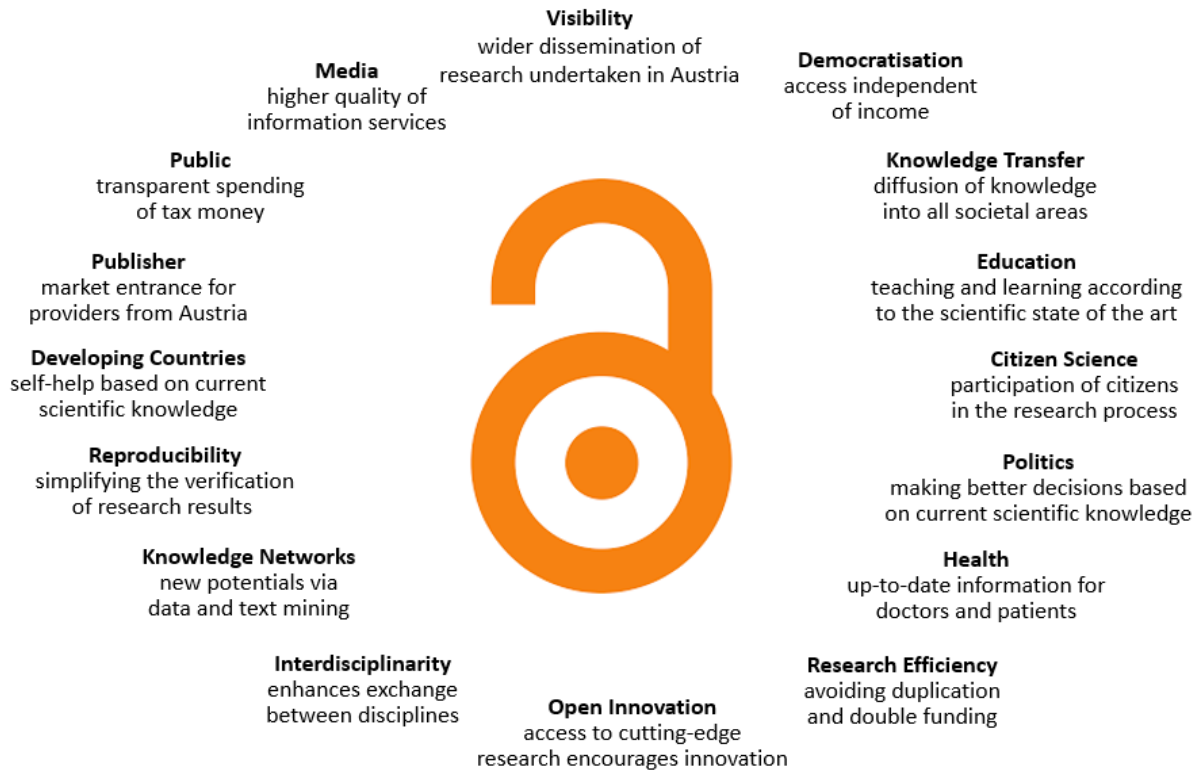


Fig. 1: Benefits of Open Access (Sources: [SPARC](#), [righttoresearch](#), [Kingsley & Brown 2012](#))

In Austria the [Austrian Science Fund](#) (FWF) supports Open Access since 2003 both conceptually and financially. The Council of Research and Technology Development (RFTE) explicitly affirmed the concept of Open Access in its [Strategy 2020](#) of 2009. The 50 member organisations of the [Open Access Network Austria](#) (OANA), initiated by [Universities Austria](#) (uniko) and the FWF and supported by the Federal Ministry of Science, Research and Economy (BMWFV), are advancing Open Access very significantly. Besides, Open Access and Open Science are core elements of the [Alliance for Responsible Science](#), [Open Innovation](#), the [Digital Austria](#) platform, and the [ERA Roadmap 2016](#) of the Austrian Federal Government. Based on these principles, efforts should be made to achieve the following goal:

By 2025, a large part of all scholarly publication activity in Austria should be Open Access. In other words, the final versions of most scholarly publications (in particular all refereed journal articles and conference proceedings) resulting from the support of public resources must be freely accessible on the Internet without delay (Gold Open Access). This goal should be pursued by taking into account the different disciplinary practices and under consideration of the different disciplinary prioritisations of Open Access. The resources required to meet this obligation shall be provided to the authors, or the cost of the publication venues shall be borne directly by the research organisations. The necessary funding must be brought in line with the overall funding priorities for research.

The present time point is especially suitable for conversion to Open Access with the above-mentioned advantages:

- In spring of 2015 the **European Research Area and Innovation Committee (ERAC)** recommended Open Access / Open Science to its member states as one of [six priorities](#) for the European Research Area (ERA) Roadmap 2015-2020.
- During their EU presidency in the first half of 2016, the **Netherlands** will give priority to Open Science, and most of all to Open Access. To this end, a [common proposal](#) with the **United Kingdom** has already been presented.
- **Leading research nations** such as [Sweden](#), [Denmark](#), [Finland](#) or [Norway](#) plan to fully transform their publication system to Open Access in the next ten years.
- Recently, transition of the scholarly publication system to Open Access was firmly demanded in a [coordinated statement](#) by the **EU Commissioner Carlos Moedas**, the Dutch **Secretary of Science Sander Dekker**, and the [League of European Research Universities](#) (LERU).
- The **Max Planck Society** has presented a [concrete plan](#) for the transition to Open Access prior to negotiations with scholarly publishers. The plan shall be coordinated with like-minded international partners (including the Austrian Science Fund and Universities Austria) in the next few months.
- In **Austria** a number of closely collaborating bottom-up initiatives have been established through the FWF, the [Open Access Network Austria](#) (OANA), the [Austrian Academic Library Consortium](#) (KEMÖ), and [e-infrastructures Austria](#). Given appropriate research-policy-based support, these initiatives could serve as a basis for positioning Austria as an *Innovation Leader* for Open Access in Europe and throughout the world.

“More science funders must put their money where their mouths are, and back their positive words with action. It will not be cheap, but the longer we wait, the more expensive it will be.”

Christoph Kratky: Professor Emeritus of Chemistry at the University of Graz and former President of the Austrian Science Fund (FWF), [NATURE](#)
28/8/2013

To achieve this goal, a set of 16 coordinated measures are recommended.

Recommendations

(1) Introduce Open Access policy

By 2017, all research and funding organisations financed by public sources should officially adopt and implement their own Open Access Policy and sign the [Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#). From 2020 onward, the Open Access Policy should be obligatory for all members of the institutions.

(2) Create cost transparency

From 2016 to 2018, research and funding organisations should provide a comprehensive and transparent overview of the costs of the current publication system. On this basis, a permanent group of experts should be established. One of their tasks will be to coordinate the research and funding organisations by monitoring the costs of publication.

„We strongly believe that Open Access is the future of scientific publishing, and will also help to make science’s intrinsic democratic value more momentous than ever.“

Helga Nowotny: Professor Emerita of Social Studies of Science at the ETH Zurich, former President of the European Research Council (ERC) and now member of the Austrian Council for Research and Technology Development (RFTE)

(3) Reorganise publishing contracts

(a) From 2016 onward, license agreements with publishers should be concluded in a manner that the research publications of authors from Austria are automatically published Open Access. (b) All contracts from 2020 onward should include this clause. (c) Contracts and prices should be made public. (d) In their negotiations with publishers, the Austrian Academic Library Consortium (KEMÖ) should be supported by the executives of the research organisations.

(4) Introduce publication funds

By 2018, all research and funding organisations should establish transparent publication funds to cover author fees for Open Access.

(5) Reorganise publication venues

When scholarly publication venues are funded by public resources, the funding conditions should preferably be such that the publication venues can be transformed to Open Access at the latest from 2020 onward. The diversity of disciplines and their respective publication modes should be taken into account when considering the purpose and time schedule.

(6) Merging the publication infrastructure

Until 2020, research policy-makers should provide financial incentives which, by pooling resources, will permit the establishment of inter-institutional publication structures for publishing high-quality international Open Access venues in Austria.

(7) Support international cooperation

From 2017 onward, all research and funding organisations in Austria should participate jointly in international initiatives that promote high-quality non-commercial publication models and infrastructures.

(8) Provide start-up capital

Public funds – as start-up capital - should be available to commercial providers who want to switch to Open Access or plan new start-ups. This step will enable some providers from Austria to establish themselves on the international market.

(9) Registration of repositories

By 2018, all research organisations should have publicly accessible and internationally registered repositories.

„Open Access is an effective tool to increase the impact and reduce costs.“

Horst Bischof: Professor for Informatics and Vice Rector for Research at the Graz University of Technology

(10) Support self-archiving

From 2016 onward, until complete conversion to Open Access publication (*Gold Open Access*), secondary publishing of quality-tested articles should be actively pursued (*Green Open Access*).

(11) Offer training programmes

From 2016 onward, all research organisations should prepare and provide training programmes for Open Access and Open Science.

(12) Acknowledging Open Access / Open Science

From 2018 onward, Open Access and Open Science activities should always be honoured in the curricula of scholars of all fields, and alternative evaluation systems should be taken into account.

(13) Expand the scope of the copyright reform of 2015

Austrian legislators should modify the copyright law by 2018 so that, independent of the form and place of publication, authors of scholarly publications will have the right to place their publication in a repository and render the original version of their publication freely accessible after a maximum embargo period of 12 months. Furthermore, large bodies of data should be made available for scholarly purposes with no restrictions in terms of search, networking and further use (*content mining*).

(14) Opening the inventories

All publicly funded archives, museums, libraries and statistical offices should digitise their inventories by 2025, and their collaboration with research organisations should be supported. Previously digitised inventories should be rendered accessible to the public for free and gratuitous use by 2020.

(15) Monitoring during implementation

A target of 80% (Green and Gold Access) of the total publication output should be achieved by 2020 and 100% Gold Open Access should be achieved by 2025 for all academic publications in Austria. The variance of disciplines should be taken into account and a diverse model should be developed. This should be accompanied by a monitoring process of the BMWF (Federal Ministry of Science, Research and Economy).

(16) Set targets for Open Science

The strategy presented here should be developed into a full-fledged Open Science strategy from 2017 onward. Its aim should be to provide resources to those persons who wish to integrate the instruments of Open Science into their work processes.

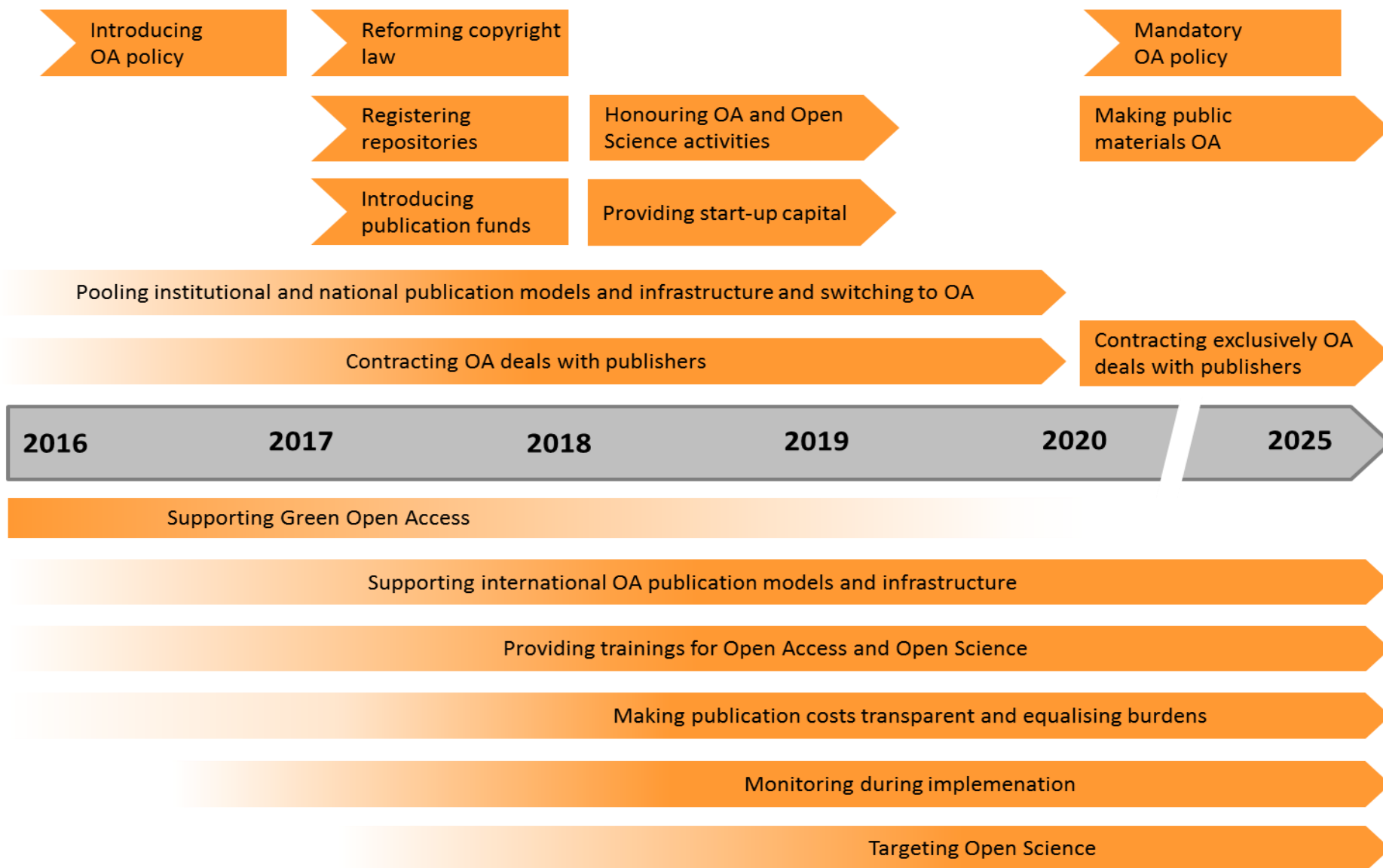


Fig. 2: Timeline of the Open Access Recommendations

I. Status quo in Austria

1. Why Open Access?

Transparency is the normative essence of scientific research. Open Access is a precondition for replicating, verifying, and falsifying the results of research, and reusing them further for research or practical purposes. In a digital era – when scholarly publications are accessible electronically to an increasing extent – an overwhelming number of scholars of all fields demand unrestricted access to research results on the internet. This demand is endorsed by nearly all significant research and political organisations, such as the [European Commission](#), as manifested in the [Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#), which has now been signed by more than 520 scholarly organisations.

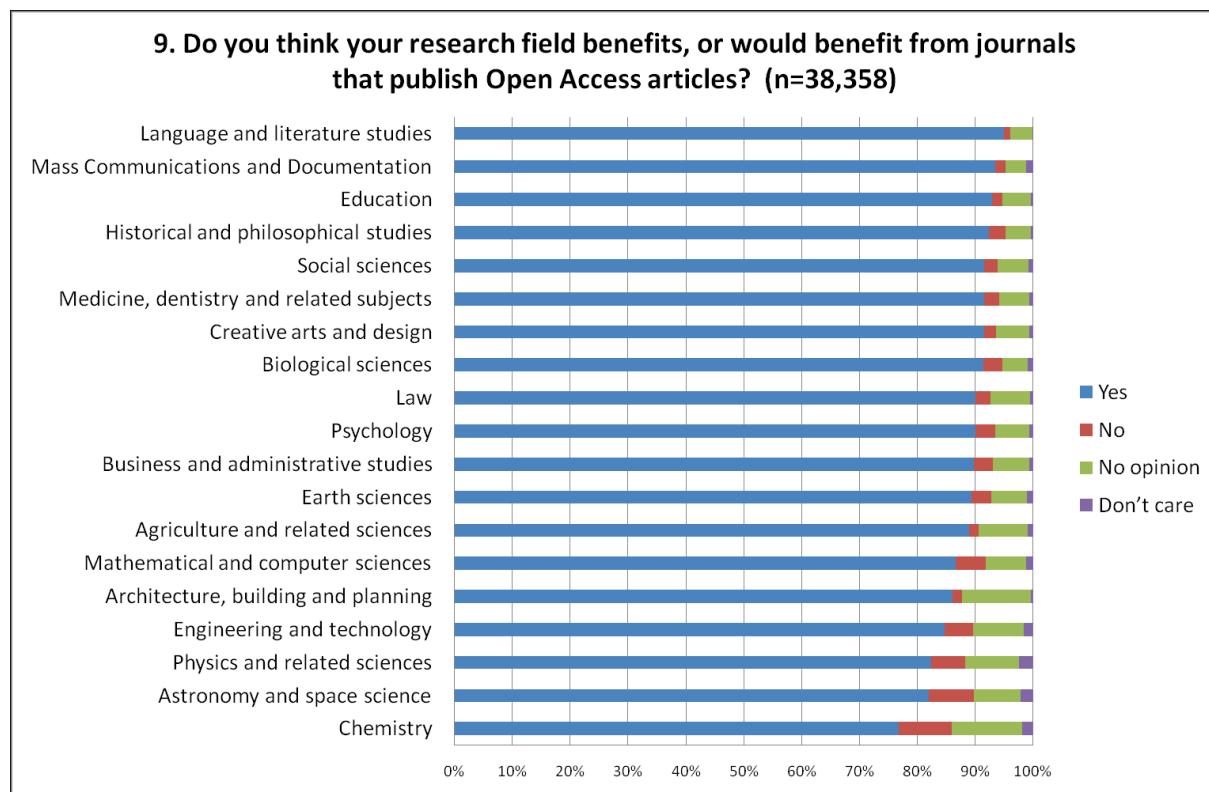


Fig. 3: Open Access Survey of EU Project SOAP ([Dallmeier-Tiessen et al 2011](#))

The [European Commission](#) has asked every member country to take a close look at the subject of Open Access and to define their position in this regard. National copyrights should also be reviewed in respect of their compatibility with this standard. The next question that arises is the need for harmonisation in Europe.

Electronic publication permits the emergence of new forms of scholarly communication, knowledge networking and knowledge transfer. In the so-called Open Science movement, scholars share their conclusions and data partly in real time with each other and with the public. Through Open Access, even those persons and institutions that previously had no access to research results and could not finance such access will be able to do so. This is immensely important especially for knowledge-intensive professions such as those of medical doctors, teachers, journalists and small- and medium-sized enterprises (SME). Studies from the [United Kingdom](#) and [Denmark](#) have shown that especially knowledge-intensive SMEs have a great need to access the most recent research outcome, but are

unable to afford it. Therefore, the European Commission regards Open Access and Open Science as essential elements of an open innovation culture ([Open Innovation](#)).

The potential of Open Access is limited by pre-existing business models and the market-dominating position of a few large information providers. Their business models are mainly based on controlling access by selling publication packages at non-transparent prices. The situation is aggravated by the fact that the heterogeneity of the market, which existed until recently - through the presence of small-, medium-sized and larger commercial and non-commercial providers – is gradually disappearing. This makes it possible for a few large providers to consistently raise the prices of access, especially because scholars as readers and authors are crucially dependent on the access to knowledge for their research and teaching as well as the advancement of their careers.

Therefore, the purpose of Open Access is to enable access to scholarly knowledge on the one hand, and reform the funding of a high-quality publication system on the other. Furthermore, the implementation of Open Access is a prerequisite for developing other elements of *Open Science*, such as *Open Research Data*, *Open Educational Resources*, *Open Innovation*, and related challenges like *Citizen Science*, *Research Integrity*, as well as the reproducibility of research results.

2. Developments in Austria

In Austria the concept of Open Access is not only supported by a large majority of scholars of all fields and age groups, but a great need for action has been postulated (see [FWF Survey 2013](#)). Especially the generation of *digital natives* with their new technical skills regard Open Access as a necessity in modern scholarly communication.

Together with countries like the Netherlands, Great Britain, Sweden, Norway, Denmark and Germany, and institutions like the Max Planck Society, the Wellcome Trust, the National Institutes of Health (NIH) and the European Commission, Austria is acknowledged as an *Innovation Leader* in implementing Open Access. In 2003, the [FWF](#) laid the foundations for understanding Open Access, drew attention to the need for action in Austria, and consistently promoted the subject internationally as well (see the study of [PASTEUR4OA 2015](#)). Subsequently, a number of bottom-up initiatives were founded and have focused on the issue ([Buschmann et al 2015](#)):

Berlin Declaration

The [Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#) of 22 October 2003 has set standards for the implementation of Open Access. The following institutions from Austria have signed the declaration (in chronological order): FWF, Universities Austria, International Institute for Applied Systems Analysis (IIASA), University of Vienna, University of Graz, University of Salzburg, Institute of Science and Technology (IST) Austria, University of Innsbruck, University of Linz, Technical University of Graz, the Austria Science Board (Wissenschaftsrat), and the Academy of Fine Arts Vienna.

Austrian Academic Library Consortium (KEMÖ)

Since 2005, 55 research institutions have become members of the [Austrian Academic Library Consortium](#) (KEMÖ) in order to jointly provide academic publications and databases, and confront their counterparts with greater negotiating power. Consequently, together with the FWF, some of the first Open Access contracts in the world were concluded with publishers, which have become role models for other countries.

"... digital technologies inevitably have the same ground-breaking impact on scientific publishing as they have already had on the media, music, film and telecommunication industries."

Carlos Moedas: European Commissioner for Research, Innovation and Science, [BRUSSELS 12/10/2015](#)

Open Access Network Austria (OANA)

The structured composition of the [Open Access Network Austria](#) (OANA) platform, which was created in 2012 under the organisational umbrella of FWF and Universities Austria, made it possible to pool the exchange of knowledge with [50 member organisations](#) and define the following goals:

- Stimulation and coordination of Open Access activities of Austrian research and funding organisations as well as research policy organisations (under consideration of international developments)
- Positioning oneself towards information providers (especially publishers)
- Serving as a contact point and a source of information for scholars, research organisations and research policy-makers

„My vision of how to enable scholars to efficiently access the immensely increasing amount of literature is to make the entire knowledge available to efficient search engines through open access without payment, on which customized searches can be performed.“

Peter Schuster: Professor Emeritus of Chemistry at the Technical University of Vienna and former President of the Austrian Academy of Science (ÖAW)

[Several working groups](#) convened on this basis and joint [events](#) were organised, whose results are all publicly accessible:

- Checklists for developing an institutional Open Access policy
- Legal and political framework conditions in Austria – especially in regard of copyright laws and secondary publication rights
- Estimation of current expenditures for publication
- Preparations for negotiations with publishers
- Checklist for the publication of Open Access journals
- Taking the needs of scholars into account
- Think tank for the future of scholarly communication through Open Science

E-Infrastructures Austria

[e-Infrastructures Austria](#), a partner project sponsored by BMWF (Federal Ministry of Science, Research and Economy) for three years, was initiated in January 2014. The project pursues the coordinated establishment of digital archiving infrastructures and the development of services that support research. In addition to all public universities, its partners include the Austrian Academy of Science (ÖAW), the Austrian Institute of Technology (AIT), the Institute of Technology (IST) Austria, the Austrian National Library, the Chamber of Labour, and the Austrian Library Network (OBVSG).

"It should be clear that restricted access to publications and data is always a restriction of scientific competition, which I consider as bad for advances in knowledge."

Matthias Sutter: Professor of Economics at the Universities Innsbruck and Cologne

Open Knowledge

The [Austria Chapter](#) of [Open Knowledge](#) has been active in Austria since 2010 and supports, among other aspects, the dissemination of Open Access by organising meetings, workshops and panels for information on Open Science. The Chapter pursues consistent exchange with the international community and is one of the central hubs for Open Science experts in Austria.

II. Recommendations in detail

By 2025, all scholarly publication activity in Austria should be Open Access. In other words, the final versions of all scholarly publications resulting from the support of public resources must be freely accessible on the internet without delay (Gold Open Access). The resources required to meet this obligation shall be provided to the authors, or the cost of the publication venues shall be borne directly by the research organisations. The measures to achieve this goal are specified in the following.

1. Basic principles

Scientific research today is largely funded by public resources. Scholars financed by public resources produce a large part of the products which, in turn, are sold by scholarly publishers to institutions largely funded by public resources.

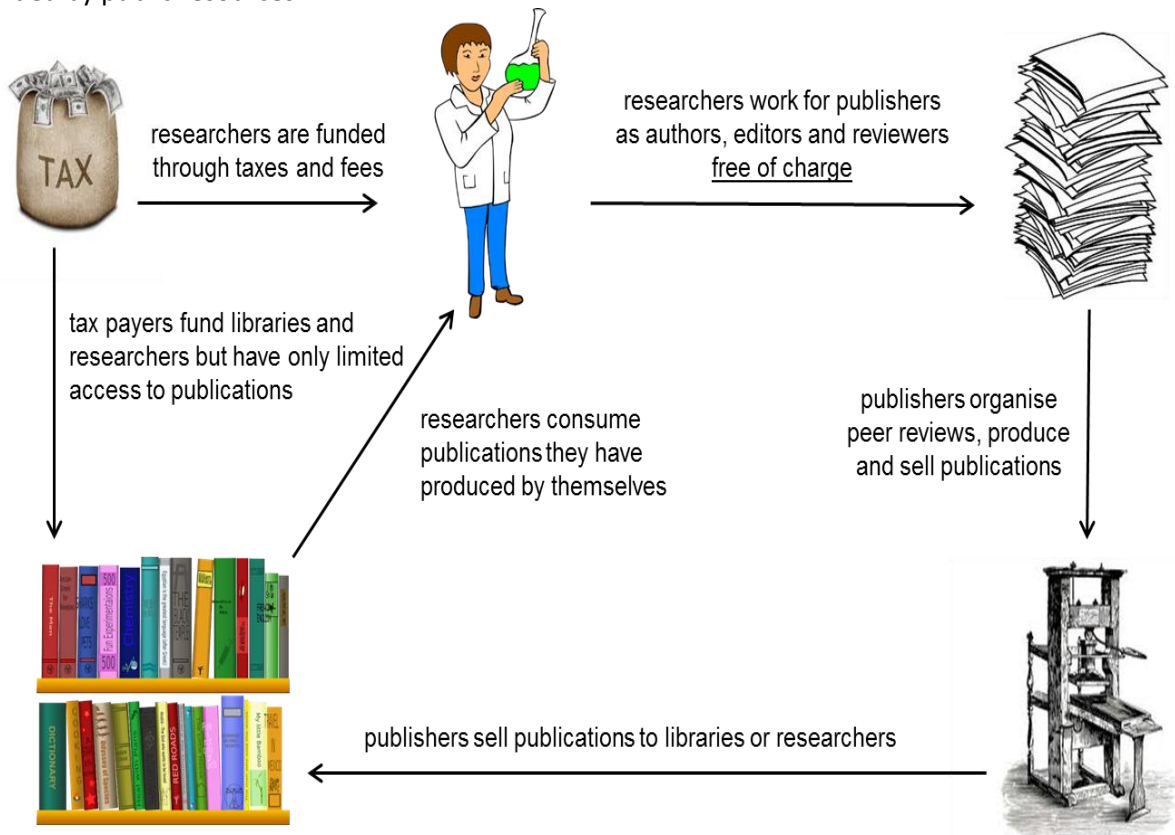


Fig. 4: Economics of the academic publication cycle without Open Access

The fact that publishers also reap commercial profits from this system is not questioned as long as the costs of the academic publication system are commensurate with the services rendered to researchers by the providers.

1.1. Costs

The overall costs of Open Access should not be higher than the costs of the former procurement models. Additional costs might be accepted in the short term, as is true of many transformations, but cost neutrality should be achieved in the mid-term. In the long term, the cost efficiency of the services should be improved by greater competition between the individual providers. A prerequisite for this purpose is greater cost transparency in the entire publication system (see [Lawson et al 2015](#)).

In Austria the public sector currently spends about 65 to 70 million Euros per year for the acquisition of academic publications. However, many cost flows in this area are confusing and non-transparent (see [Reckling 2015](#)). Greater transparency will make it possible to re-allocate the existing resources to Open Access. Subsequently, the currently fixed acquisition costs of journal subscriptions and other formats (including books) will drop successively and can be re-allocated to Open Access.

In transforming the publication system to Open Access it may be assumed that some institutions with a low publication output will be able to reduce costs by adopting the future funding model for Open Access as compared to their former expenses for journal subscriptions, whereas research institutions with a high publication output will have to anticipate higher expenses for Open Access, especially in the transitional phase. Therefore, public authorities should initiate measures to establish a fair financial exchange between research institutions in their sphere of competence, which would permit all scholars to publish the results of their research as Open Access publications.

1.2. Services

The future pricing system for academic publications must be more closely related to the services rendered by providers. For this purpose, minimum standards for Open Access should be specified and agreed upon in the respective contracts. Science Europe, which combines more than 50 European research funding and research performing organisations under a single roof, has formulated preliminary [recommendations](#) on the subject, which are expressly endorsed herewith:

- (a) A quality-tested indexing system for publication venues should exist in the pertinent international databases.
- (b) The authors should be permitted to retain not only their intellectual property but also the exploitation rights (copyright).
- (c) As far as possible, an open licence ([Creative Commons BY](#) or similar) that permits further reuse of the results of publication should be used.
- (d) Long-term archiving of the publications in registered repositories should be ensured.
- (e) The machine readability of all parts of the publication (including the text, metadata, citations) is supported so that the potentials of analysing large databases, via [content mining](#) among other means, can be efficiently and fully utilised.

„Only a tiny fraction of the funds required for scientific research would be needed to cover the publication charges at a level sufficient for creating conditions for open access.“

Ferenc Krausz: Director of the Max Planck Institute for Quantum Optics; START, Wittgenstein, ERC and Leibniz Prize winner

1.3. Competition

The last few decades have been marked by an enormous market concentration, particularly with regard to publishers of scholarly journals. Currently five providers control 50% of the world market. If the developments of the last few years were to continue, in the next 10 to 15 years two or three providers would occupy a market share of 65% to 75% and oust a large number of smaller providers and non-commercial providers from the market.

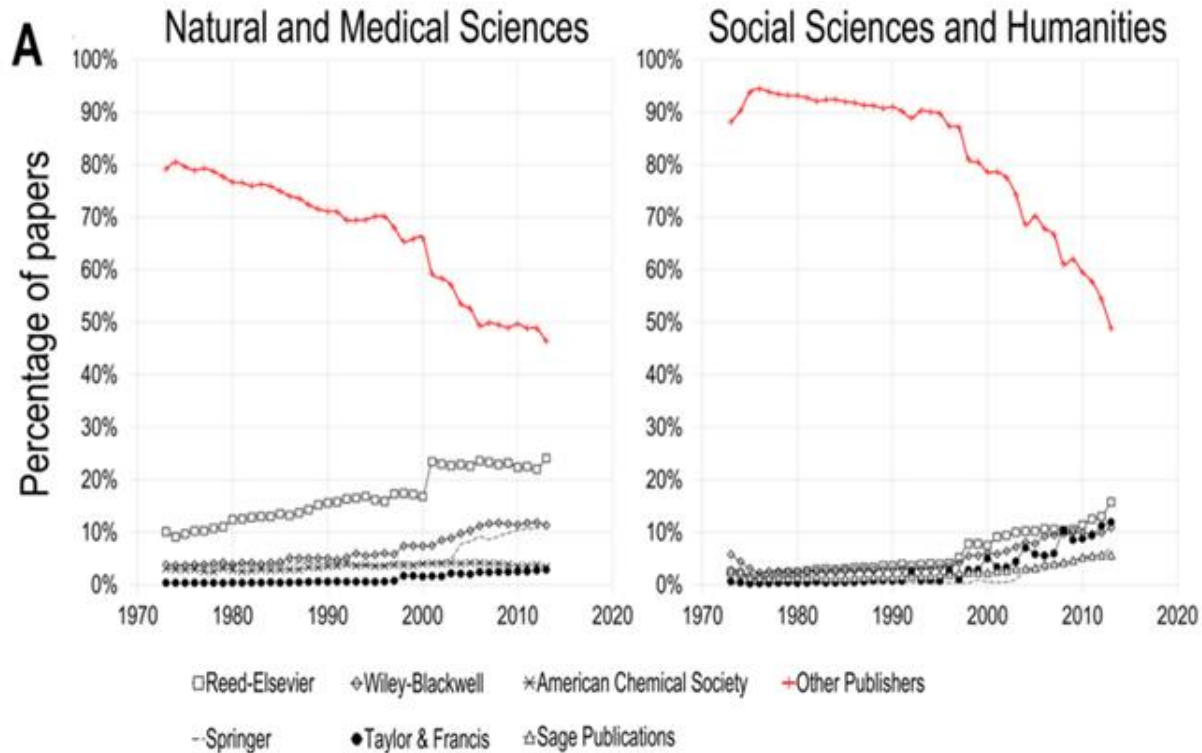


Abb. 5: Percentage of articles in Web of Science by publishers from 1973 to 2013 ([Larivière et al 2015](#))

Besides, publishers usually have the exploitation rights for publications and are therefore able to capitalise the information from the publications in a variety of forms (such as bibliographic and bibliometric databases). Thus, in the long term all data generated by the publicly funded scholarly workflow pass entirely into the control of a few large enterprises.

A functional publication system based on a price-performance ratio will exist only when a certain level of competition exists between providers, and the (further) use of research results remains free. In other words, the following must be ensured when the transition to Open Access takes place:

- Publication venues of various sizes and orientation (including commercial and non-commercial ones) should be funded.
- Appropriate financial aid should be given to new providers to ensure their market opportunities.
- The infrastructure underlying publications and research data should be funded in a sustainable manner.

2. Funding levels

Ideally, the transition to Open Access may be subdivided into three funding levels, each of which calls for different interventions:

- Licence contracts with large commercial providers, who usually offer a large quantity of publications in packages,
- Publication venues of smaller, usually non-commercial providers (including university publishers and scholarly societies), and finally
- Infrastructure for the publication system in the widest sense of the term (including archives, databases, repositories, and software).

2.1. Licence contracts

Scholarly journals are the core of the current publication system. Scholarly journals are purchased by the libraries of research institutions in large packages, especially from large publishers, to enable their staff to access the publications. In Austria, libraries are currently purchasing packages exceeding 30 million Euros per year through the consortium network known as the [Austrian Academic Library Consortium](#) (KEMÖ). It is suggested that this model will be transformed to Open Access in three temporally coordinated steps:

Offsetting models: This term refers to the implementation of models that function on the following basis: payments for Open Access in subscription journals (Hybrid Open Access) should be offset against the subscription prices of the journals or should cause a high discount. KEMÖ and the FWF have concluded preliminary global agreements of this nature with publishers like [IoP Publishing](#) and [Taylor & Francis](#). Negotiations with other publishers are under way. However, these can only serve as entry-level models into a transitional phase.

Read & Publish models: In a mid-term step, attempts should be made to implement models that include access permission for the subscribing institutions as well as an Open Access publication option for scholars of the institutions. Such “Read & Publish models”, as were recently concluded with Springer Publishing in the [Netherlands](#) and [Austria](#), by the [Max Planck Society](#) and in the [United Kingdom](#), should be achieved for all larger consortium contracts from 2016 onward.

Open Access service-based models: In the long term, i.e. from 2020 onward, contracts should be concluded in a manner that the price is no longer derived from the subscription package but from the costs of the individual published articles. Based on this suggestion the [Max Planck Society](#) assumes that the former resources would not only be sufficient for a model of this type, but would also permit competitive pricing which could reduce costs.

“The crucial task faced by universities is to steer the budgets which have been set aside so far for publication and information management so that Open Access publications can also be funded. So-called offsetting models such as those being currently discussed in Great Britain, the Netherlands or Austria, which have been subjected to initial tests and whose purpose is to achieve a balance between license fees for journal subscriptions and Open Access publication fees, have shown that libraries are quite capable of adapting their budgets accordingly.”

Dieter Strohschneider: Professor for Medial Studies at the University of Munich and President of the German Research Foundation (DFG), [FORSCHUNG UND LEHRE 2/2015, p. 94](#)

Based on experience obtained in the [Netherlands](#) and in [Austria](#), such substantial modifications of contracts, especially with large multinational enterprises, would be successful only if the Austrian Academic Library Consortium (KEMÖ) (a) was strengthened, and (b) negotiations were supported even more actively by the heads of research institutions.

2.2. Transformation of established publication models and founding new ones

Despite the existing concentration on the market, many publication formats are distributed in small packages or individually. These are usually issued by smaller publishers, learned societies, university publishers, or research institutions. In addition to the strategy mentioned under section 2.1., three additional measures are recommended for these formats and for establishing new publication models:

- (a) For publication venues being funded by public resources, the funding conditions should be such that the publication venues can be transformed to Open Access.
- (b) For quality-tested publication venues outside the jurisdiction of research organisations, Austrian research and funding organisations should set up Open Access publication funds² to cover author fees on the one hand, and become members of international funding consortia that offer publication models without author fees on the other.³
- (c) Very few providers from Austria are currently involved in the international scholarly publication market. Open Access would be an opportunity to transform this state of affairs. The government should provide sufficient start-up capital for some commercial providers who wish to switch to Open Access or plan new start-up ventures so that some providers from Austria will be able to establish themselves in the international market.

„Recent progress on Gold Open Access ... is based on strong coordination and interaction between key stakeholders: universities and their national associations; libraries and their national consortia; national governments; research funders. Acting together, these four key stakeholders can achieve a great deal. ”

League of European Research Universities (LERU):
LERU Statement for the 2016 Dutch EU Presidency,
[LEUVEN 12/10/2015](#)

2.3. Open Access Infrastructure

An Open Access infrastructure cannot be sharply demarcated from publication models, but the term specifically refers to repositories, databases, software, publication infrastructure, or technical standards at the institutional, national or international level which ensure sustainable quality assurance and access to Open Access publications:

- (a) The establishment of a jointly utilised publication infrastructure can be promoted by pooling resources, such as the establishment of technical standards, the collective operation of publication platforms (including [Open Journal Systems](#)), and pooling quality assurance services (including peer review, editing, and plagiarism checks).

² The FWF, WWTF, the Universities of Vienna, Salzburg, and Graz, the Academy of Fine Arts, the Medical University of Graz, the Technical University of Vienna, and IST Austria currently have publication funds for Open Access.

³ Examples of national and international consortia based on sharing costs between the participating institutions and without author fees include [Knowledge Unlatched](#), [Operas](#), [K|J|N Consultants](#), [LingOA](#), or the [Open Library of Humanities](#) (OLH). The University Library of Vienna is already a member of Knowledge Unlatched and the Academy of Fine Arts and the FWF support OLH.

- (b) A major part of the Open Access infrastructure is organised internationally and is frequently not supported by sustainable funds. Austrian institutions are involved, for instance, in [Europe PubMedCentral](#) (FWF), [arXiv](#) (University of Vienna, FWF), [Directory of Open Access Journals](#) (currently 15 institutions) and [OAPEN](#) (four institutions). To ensure their stable existence, resources should be bundled in Austria and prioritised initiatives should be sponsored collectively.

For the joint organisation of the three above-mentioned funding levels (licence contracts, publication models, infrastructure), a suitable parent organisation consisting of 55 institutional members already exists: the Austrian Academic Library Consortium (KEMÖ). This cooperative momentum should be utilised and expanded organisationally and financially by research policy-makers. Supported and accompanied by the heads of research organisations, personnel and financial resources should be allocated in the KEMÖ in order to expedite Open Access licence contracts with publishers as well as finance national and international publication models and infrastructures in a coordinated manner. This should receive sustained support from the Ministry (BMWFW) through the provision of suitable funding measures (including resources for university space structures and performance agreements) (see the initiatives in [Norway](#), [Finland](#) or [Sweden](#)).

3. Accompanying measures

3.1. Transitional measures

Given the long-term goal of transforming nearly all quality-tested publications to Open Access by 2025, short- and mid-term accompanying measures will be needed in the interim period to support this long-term goal.

- (a) Open Access policies: All research and funding organisations financed by public resources should pass a resolution in favour of an Open Access policy by 2018, which specifies basic principles and institution-specific measures for the promotion and implementation of Open Access in accordance with the overall national strategy. The policy should be affirmed by signing the [Berlin Declaration](#). The EU network [PASTEUR4OA](#) has worked out recommendations for this purpose. The recommendations address all research and funding organisations on the one hand, and individual research institutes on the other – whether independent or part of a larger organisation. The Open Access policy should not merely be a recommendation, but should be mandatory from 2020 onward. Thus, it should be registered in the international directory of the [ROARMAP](#) Open Access mandate.
- (b) Self-archiving (Green Open Access): Whereas the national strategy is essentially based on the transition of the scholarly publication system to Gold Open Access in the long term, in the transitional phase, research and funding organisations are advised to use the Green Open Access model as an accompanying measure, set up institutional and disciplinary Open Access repositories, and support their consistent utilisation by scholars. To this end, all repositories should be registered in the metasearch engine [BASE](#) (Bielefeld Academic Search Engine) by 2018.
- (c) Secondary right of self-archiving: The amendment to the copyright law adopted by the Austrian National Assembly on 7 July 2015, which includes a secondary publication right for scholarly

„At IST Austria we support the self-archiving of scientific work and encourage publishing in Open Access journals, in order to make the results of our research accessible to the broadest possible audience.“

Thomas Henzinger: President of the IST Austria, ERC and Wittgenstein Prize winner

periodicals, should be extended by 2018. Independent of the form and place of publication, scholarly authors should have the right to archive the original version of their publication in a repository after a maximum embargo period of 12 months (see [Spielkamp 2015](#)). Accordingly, Austrian negotiators at the EU level should advocate a harmonised secondary publication right. Another mid-term goal is to eventually incorporate the right in the [World Intellectual Property Organization](#) (WIPO).

- (d) **Content Mining:** Large data volumes must be searchable and reusable for scholarly purposes, with no restrictions as far as possible. Research organisations and especially legislators are advised to adopt the principles of [The Hague Declaration on Knowledge Discovery in the Digital Age](#) and also incorporate these in the EU legislation.
- (e) **Public inventories:** All archives, museums, libraries and statistical offices funded by public resources should digitise their inventories by 2025 as far as possible. Already digitised inventories should be rendered accessible to the public free of cost by 2020. Furthermore, collaboration between these institutions and the research organisations should be promoted further in order to expand the body of highly complex digitised contents and render them accessible.
- (f) **Transparency of contracts:** Austrian legislators are advised to create a legal framework that will permit the agreements with information providers (usually publishers) to be rendered transparent in the future, and no longer subject to non-disclosure ([non-disclosure clause](#)). Austrian negotiators are also advised to advocate appropriate regulations at the EU level.
- (g) **Education and training:** Sensitisation to the opportunities and challenges of Open Access is currently missing in many fields. Therefore, the introduction and implementation of Open Access policies should be accompanied by extensive training and transparency measures at research organisations, in the form of workshops, online information portals, and obligatory tutorials as part of the university curriculum for training in research and publication.
- (a) **Reputation systems:** From 2018 onward, Open Access and Open Science activities should be consistently acknowledged in the curricula of scholars from all fields (see the policy of the [Université de Liège](#)). Furthermore, alternative evaluation systems should be taken into account (see among others [Altmetrics](#)).

„This is of particular importance for fields of research which aren't part of the scientific mainstream because open access allows for completely new possibilities for dissemination.“

Martha Keil / Eveline Brugger / Birgit Wiedl:
Institute for Jewish History in Austria

3.2. Monitoring Open Access

Monitoring measures should be developed and established in order to measure the ongoing development of the increase of Open Access publications from Austria.

As part of their knowledge balance, all public universities are obliged to register the number of articles published by their researchers. Currently, data on Open Access publications are not registered systematically. Publications resulting from cooperative work between universities are assigned to all individual partners in terms of statistics. Thus, the sum of the registered publications of all universities exceeds the actual output. Data on publications of research and funding organisations financed by public resources are currently not registered on a systematic basis. Therefore, it would be advisable to perform an analysis based on the concept of the [Max Planck Society](#), showing how the costs of publication would be distributed in the event of complete conversion to Open Access in Austria. This would permit calculation of the equalisation of burdens between research and funding organisations.

Early in 2016, the FWF will publish a complete dataset of all Open Access publications from funded projects in the last few years (for a preliminary attempt see [Reckling 2014](#)). This sample could serve as a provisional estimation for Austria.

Independent of the selected solution, detailed data concerning Open Access should be provided by universities and research institutions. In addition to standardised bibliographic data, the following information should be registered in order to monitor various developments in the market:

- The type of Open Access (Green, Gold or Hybrid)
- Licence
- The type of funding (*article processing charges* [APC], etc.)
- Other types of remuneration (such as those resulting from agreements with publishers)
- Providers (publisher, publication platform, etc.)

„The scientific results are not a personal belonging and should not be hidden from humanity. Therefore, I firmly believe that scientists should make their results accessible to all mankind.“

Niyazi Serdar Sariçiftçi: Professor for Physical Chemistry at the University Linz and Wittgenstein Prize winner

The Ministry (BMWF) should develop a monitoring system of this type with research and funding organisations by 2020, promote the establishment of Open Access by financial means and, based on these, prepare an Open Access report every year.

3.3. Future perspectives: Open Access as an element of Open Science

Open Access is a crucial part of, and a prerequisite for, Open Science. The organisation and communication of research already is undergoing extensive transformation, which may be summarised by the term *Open Science*. The reasons for this transformation include the consistently expanding production of research data, new technical networking options, the high pressure to succeed in research, the aim of performing economically and socially utilisable research, and public interest in transparent information and participation.

Transparency in accordance with the principles of Open Science is a key to this process of transition. From now on, transparency not only concerns scholarly publications (Open Access), but the entire pathway leading to these and beyond. This particularly includes the complete publication of data underlying an individual publication or an entire research project (*Open Research data*), careful documentation of the methods used (*Open Methodology*), free availability of the source text of software tools and analysis scripts (*Open Source*), sharing relevant teaching materials and lecture notes (*Open*

Educational Resources), and the comprehensibility of research-policy decisions (*Open Evaluation*). *Citizen Science* may also be viewed as an important aspect of Open Science measures.

Transparency of the research process will be beneficial in many ways:

- Access to data, software and methods will permit better documentation and transparency of the research discovery process, which will enhance reproducibility and simplify the disclosure of errors or problematic conclusions.
- Scholars will be able to rely on the results obtained by their colleagues and base their work on these. Thus, synergies will be utilised, duplications reduced, and research funds employed more efficiently.
- Given the foreknowledge and/or persistence required, interested members of the public will be able to gain their own impression of the current state of research on topics of broad relevance (such as climate change or demographics) or personal interest (such as specific diseases).
- Various types of expertise beyond those of the traditional protagonists can be incorporated into the planning, ascertainment, analysis and/or interpretation of research data (*Citizen Science*).
- The decision and evaluation process of the allocation of funds can be rendered more transparent (see [FWF Transparency Rules](#) among others).

„As Africanist I am aware how difficult it is for colleagues at African Universities to get access to up-to-date research articles of high standard. (...) Science shall serve the development of societies. This is done most effectively when knowledge produced by scientists is made available to everyone - also outside the narrow academic circles.“

Birgit Englert: Assistant Professor at the Department of African Studies, University of Vienna

In addition to these advantages, transition of the system to Open Science involves certain challenges which, however, can be addressed by suitable measures:

- By sharing their interim results, scholars may forfeit their priority in publishing the important final results, or their priority in the economic exploitation of their research results (through patents, for instance). This problem can be resolved by permitting scholars to publish their data, methods and software when they present their complete results to the public. On the other hand, it would not be advisable to publish interim results with simultaneous non-disclosure of the underlying data and methods.
- Complete documentation and user-friendly provision of all relevant data and methods are frequently associated with extensive personal effort and/or significant financial expenses. It would be desirable to submit a project proposal that includes a detailed plan and budgeting of costs, such as that provided by the [Wellcome Trust](#).
- Free publication of all data may cause problems in connection with data protection on the one hand (such as genomics data, which cannot be rendered anonymous easily). On the other hand, it may result in an information overload and/or confusion due to preliminary and non-robust results, which would affect scholars as well as other users. Thus, it would be meaningful to perform a scholarly investigation of the options and risks in appropriate case studies, and define recommendations and Best Practices on this basis.
- Transparent research practices call for new competences and these must be taken into account when planning curricula in research education.

The opportunities offered by the transformation to Open Science, which has been initiated in several settings, outweigh the risks by a wide margin. Complete transformation to Open Access as recommended in this document will be a central aspect of further developments, such as those specified in the strategy of the [European Commission](#). Therefore, we suggest that Open Science should be integrated into the Open Access Network Austria (OANA) in a stepwise manner from 2016 onward. The purpose of such extension would be the following: by permitting the exchange of experience and working out common standards, scholars and science administrators will be given the resources needed to integrate the instruments of Open Science efficiently into their work. It can be built upon a number of ongoing initiatives in Austria (including [Österreich forscht](#), [Open Innovation in Science](#), [Genom Austria](#)).

„Enlightenment philosophers celebrated the ideal of a republic of letters, open to everyone without any national or disciplinary borders. Some of them considered the unrestricted communication of ideas as crucial for the flourishing of a political republic ... thanks to modern technology, we can realize the dream of the Enlightenment philosophers ...”

Robert Darnton: Historian, former Director of the University Library at Harvard and initiator of the Digital Public Library of America ([INTERVIEW 30/04/2013](#))

The recommendations presented here by the task group should not be seen as a static statement. Rather, they should be adapted in appropriate discussions and revised at regular intervals. In the future it will be necessary to cooperate more closely with initiatives in Austria such as the [Alliance for Responsible Science](#), [Open Innovation](#), the [Digital Austria](#) platform, or the [ERA Roadmap 2016](#).