Opetusministeriö

Undervisningsministeriet

Research

Recommendations for the promotion of open access in scientific publishing in Finland

Memorandum by the Open Access working group

Reports of the Ministry of Education, 2005:16

Opetusministeriön työryhmämuistioita ja selvityksiä

Undervisningsministeriets arbetsgruppspromemorior och utredningar

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OPETUSMINISTERIÖ

Undervisningsministeriet

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The Open Access Scientific Publishing Committee	**Contracted by** Ministry of Education	
Chair: Sakari Karjalainen Secretaries: Kimmo Kuusela and Kristiina Hormia-Poutanen	**Committee appointed on** 22.9.2004	**Dno** 47/043/2004

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Report of the Open Access Scientific Publishing Committee

Parts Memorandum + appendix

Abstract

The committee was appointed to put forward recommendations for the promotion of open access to scientific and scholarly publications in Finland. The recommendations were to be addressed to research funding agencies, organisations conducting research and scientific publishers.

Open access means that the publication can be read by anyone free of charge and without restrictions on the internet. The aspiration to increase open access has recently aroused wide international interest. There are two primary means of providing open access: open access journals and open access online archives.

The committee's recommendations concern publications of all researchers residing in Finland, comprising those studies that will be published in Finland or abroad for which the authors do not expect payment. The recommendations do not apply to textbooks used in undergraduate education or popularised scientific works.

The aim of the recommendations is not to change the traditional standards used for evaluating the quality of scholarly publications, but to improve access to and the availability, distribution, visibility, usability and usefulness of the publications.

Most scientific research will be published in traditional subscription journals and fee-charging conference proceedings in the coming years. In order to improve their circulation and availability, the committee recommends that:

- Higher education institutions and research institutes, individually or jointly, set up the necessary open access online archives in which researchers can deposit copies of their publications for free access on the internet;
- Researchers are encouraged to deposit copies of their publications in these open access electronic publication archives with a view to rapid accumulation of material in them.

Further, the committee recommends that:

Funding agencies (e.g. the Academy of Finland and Tekes)
- accept author charges as research project expenditure when researchers publish their studies in open access journals which charge author charges on accepted articles;
- in financing scientific publishers and publications, encourage them to provide open access;

Higher education institutions and research institutes
- make scientific studies published in their serials available through open access online archives;
- recommend their researchers to publish their research in open access journals when there are open access journals in their field which are comparable to traditional subscription journals;

Journals and learned societies
- offer the scientific articles published in their serials to open access distribution as early on as possible;
- allow the authors of articles published in their journals to deposit copies of their articles in open access online archives;

Libraries
- under the leadership of the National Library, support the internet distribution of the metadata and full texts of the materials deposited in open access online archives and the long-term preservation of these materials;
- in cooperation, support the creation of Finnish open access online archives and their compliance with international metadata standards

The Ministry of Education
- promotes open access, sees to the implementation of these recommendations in cooperation with other Ministries and monitors the implementation
- encourages higher education institutions to cooperate in promoting open access

Other information

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Julkaisija	**Julkaisun päivämäärä**
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Puheenjohtaja: Sakari Karjalainen Sihteerit: Kimmo Kuusela ja Kristiina Hormia-Poutanen	**Toimielimen asettamispvm** 22.9.2004	**Dnro** 47/043/2004

Julkaisun nimi (myös ruotsinkielinen)
Avoimen tieteellisen julkaisutoiminnan työryhmän muistio
(Promemoria av arbetsgruppen för öppen vetenskaplig publicering)

Julkaisun osat Muistio ja liite

Tiivistelmä

Työryhmän tehtäväksi annettiin laatia suositukset avoimen tieteellisen julkaisutoiminnan (open access – avoin saatavuus) edistämiseksi Suomessa. Suositukset oli määrä kohdistaa tutkimuksen rahoittajille, tutkimusta suorittaville organisaatioille ja tieteellistä julkaisutoimintaa harjoittaville tahoille.

Tieteellisen julkaisun avoin saatavuus tarkoittaa sitä, että julkaisu on kenen tahansa luettavissa internetistä ilmaiseksi ja esteettömästi. Pyrkimykset avoimen saatavuuden lisäämiseksi ovat viime vuosina herättäneet laajaa kansainvälistä kiinnostusta. Avoimen saatavuuden toteuttamisessa kaksi tärkeintä keinoa ovat avoimet tiedelehdet ja avoimet elektroniset julkaisuarkistot.

Työryhmän suositukset koskevat Suomessa asuvien tutkijoiden tuottamia tieteellisiä julkaisuja, joihin kuuluvat sellaiset sekä Suomessa että ulkomailla tulevaisuudessa julkaistavat tutkimukset, joista kirjoittajat eivät yleensä saa rahallista korvausta. Suositukset eivät koske korkeakoulujen perusopetuksen oppikirjoja eivätkä yleistajuisia teoksia.

Suositusten tarkoituksena ei ole muuttaa tieteellisten julkaisujen tason arvioinnin perusteita, vaan parantaa tutkimusten saatavuutta, saavutettavuutta, levikkiä, näkyvyyttä, vaikuttavuutta, käytettävyyttä ja hyödynnettävyyttä.

Valtaosa tieteellisistä tutkimuksista tullaan lähivuosina julkaisemaan perinteisissä tilausmaksullisissa lehdissä ja maksullisissa konferenssijulkaisuissa kuten tähänkin saakka. Jotta näiden tutkimusten levikki ja saatavuus paranisivat, työryhmä suosittaa, että:

- korkeakoulut ja tutkimuslaitokset, yksittäin tai yhteistyössä, pystyttävät tarvittavat avoimet elektroniset julkaisuarkistot, joihin tutkijat voivat tallentaa julkaisujensa rinnakkaiskopiot, jotta ne olisivat vapaasti verkossa käytettävissä
- tutkijoita kannustetaan tallentamaan julkaisujensa rinnakkaiskopiot avoimiin elektronisiin julkaisuarkistoihin, jotta niihin saataisiin nopeasti paljon korkeatasoista materiaalia

Lisäksi työryhmä suosittaa muun muassa, että:

Tutkimuksen rahoittajat (kuten Suomen Akatemia ja Tekes)
- hyväksyvät kirjoittajamaksut tutkimushankkeiden kuluiksi silloin kun tutkijat julkaisevat tutkimuksensa kirjoittajamaksuja perivissä avoimissa tiedelehdissä
- rahoittaessaan tiedejulkaisijoita ja tiedejulkaisuja kannustavat niitä avoimeen saatavuuteen

Korkeakoulut ja tutkimuslaitokset
- tarjoavat kaikki omiin julkaisusarjoihinsa tulevat tieteelliset julkaisut saataville avointen elektronisten julkaisuarkistojensa kautta
- suosittavat tutkijoilleen tutkimusten julkaisemista avoimissa tiedelehdissä, silloin kun heidän tieteenalallaan on valittavissa perinteisiin tilausmaksullisiin lehtiin verrattuna vähintään samantasoisia avoimia tieteellisiä lehtiä

Tieteelliset lehdet ja tieteelliset seurat
- tarjoavat lehtiensä tutkimusartikkelit mahdollisimman tuoreeltaan avoimeen verkkojakeluun
- sallivat lehtiinsä kirjoittaville tutkijoille mahdollisuuden tallentaa artikkeleiden rinnakkaiskopiot avoimiin elektronisiin julkaisuarkistoihin

Kirjastot
- Kansalliskirjaston johdolla tukevat suomalaisiin avoimiin elektronisiin julkaisuarkistoihin tallennettavien aineistojen kuvailutietojen ja kokotekstien verkkojakelua sekä näiden aineistojen pitkäaikaista säilyttämistä
- yhteistyössä tukevat suomalaisten avointen elektronisten julkaisuarkistojen rakentamista ja saattamista yhteensopivuusstandardien mukaisiksi

Opetusministeriö
- edistää ja tukee osaltaan avointa julkaisutoimintaa ja huolehtii näiden suositusten toimeenpanosta yhteistyössä muiden ministeriöiden kanssa sekä seuraa suositusten toteutumista
- kannustaa korkeakouluja yhteistyöhön tieteellisten julkaisujen avoimen saatavuuden edistämisessä

Avainsanat

Avainsanat tieteellinen julkaisutoiminta, open access, avoin saatavuus

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Sammandrag

Arbetsgruppen fick i uppdrag att utarbeta rekommendationer för främjande av en öppen vetenskaplig publicering (open access – fri tillgänglighet) i Finland. Rekommendationerna skulle rikta sig till dem som finansierar forskning, de organisationer som bedriver forskning och de instanser som bedriver vetenskaplig publikationsverksamhet.

Fri tillgång till vetenskaplig litteratur innebär att en publikation kan läsas av vem som helst på internet avgiftsfritt. Strävandena att öka den fria tillgängligheten har under de senaste åren rört stort intresse internationellt. De två viktigaste kanalerna för fri tillgänglighet är öppna vetenskapliga tidskrifter och öppna elektroniska pub-likationsarkiv.

Arbetsgruppens rekommendationer gäller vetenskapliga publikationer producerade av forskare bosatta i Finland. Till dessa publikationer hör sådan forskning som i framtiden publiceras såväl i Finland som utomlands och för vilken författarna vanligen inte får någon ersättning i pengar. Rekommendationerna gäller inte läroböcker i högskolornas grundläggande undervisning eller populärt hållna verk.

Syftet med rekommendationerna är inte att ändra grunderna för bedömningen av de vetenskapliga publikationernas nivå, utan förbättra tillgången på och till forskningsresultat, forskningens spridning, synlighet och genomslagskraft och möjligheterna att använda och exploatera forskningen.

Största delen av den vetenskapliga forskningen kommer under de närmaste åren att publiceras i traditionella prenumerations-baserade avgiftsbelagda tidskrifter och i avgiftsbelagda konferenspublikationer såsom för närvarande. I syfte att förbättra distributionen och tillgängligheten för denna forskning rekommenderar arbetsgruppen följande:

- högskolorna och forskningsinstituten, antingen enskilt eller i samarbete, inrättar behövliga öppna elektroniska publikations-arkiv, där forskarna kan spara parallellkopior av sina publikationer så att dessa fritt kan utnyttjas via nätet
- forskarna uppmuntras att spara parallellkopior av sina publikationer i öppna elektroniska publikationsarkiv, för att dessa snabbt skall tillföras en stor mängd högklassigt material

Dessutom rekommenderar arbetsgruppen bl.a. att

Forskningsfinansiärerna (såsom Finlands Akademi och Tekes)
- godkänner författaravgifter som kostnader för forskningsprojekten i de fall då forskarna publicerar sin forskning i öppna vetenskapliga tidskrifter som tar ut författaravgifter
- uppmuntrar dem som publicerar sig och de vetenskapliga publikationerna till fri tillgänglighet vid finansieringen av dem

Högskolorna och forskningsinstituten
- gör alla de vetenskapliga publikationer som kommer ut i deras egna publikationsserier tillgängliga via öppna elektroniska publikationsarkiv
- rekommenderar att deras forskare publicerar sin forskning i öppna vetenskapliga tidskrifter, när det på vetenskapsområdet i fråga finns öppna vetenskapliga tidskrifter på minst samma nivå som de traditionella prenumerationsbaserade tidskrifterna

Vetenskapliga tidskrifter och vetenskapliga sällskap
- erbjuder forskningsartiklarna i sina tidskrifter för öppen distribution via nätet i så snabb takt som möjligt
- tillåter att de forskare som skriver i deras tidskrifter får spara en parallellkopia av artiklarna i öppna elektroniska publikationsarkiv

Biblioteken
- under ledning av Nationalbiblioteket understöder distribution via nätet av metadata och fulltext i fråga om material som sparas i öppna finländska elektroniska publikationsarkiv samt långvarig förvaring av detta material
- i samarbete understöder byggandet av öppna elektroniska publikationsarkiv i Finland och får dem att motsvara kompatibilitetsstandard

Undervisningsministeriet
- främjar och understöder öppen publicering och sörjer för verkställigheten av dessa rekommendationer i samarbete med andra ministerier samt följer efterlevnaden av rekommendationerna
- uppmuntrar högskolorna till samarbete vid främjandet av fri tillgång till vetenskapliga publikationer

Nyckelord

vetenskaplig publicering, open access, fri tillgänglighet

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To the Ministry of Education

On September 22, 2004, the Ministry of Education established a working group to compile a set of recommendations for the promotion of open access to scientific and scholarly literature in Finland. The recommendations were to be aimed in particular at research sponsors, the organizations carrying out the research and the parties involved in scientific publishing.

The Ministry of Education invited Sakari Karjalainen, Director of the Ministry of Education, to chair the working group and the following to be members: Bo-Christer Björk, Professor of the Swedish School of Economics and Business Administration (Chairman of the FinnOA working group); Gustav Björkstrand, Rector of the Åbo Academi University (Chairman of the Finnish Council of University Rectors); Hannele Hermunen, Counsellor for Education at the Ministry of Education, Kristiina Hormia-Poutanen, Head of National Electronic Library Services (FinELib); Annu Jylhä-Pyykönen, Counsellor for Education at the Ministry of Education; Anita Lehikoinen, Counsellor for Higher Education at the Ministry of Education; Maija Lehtinen, Lawyer at the National Technology Agency of Finland (Tekes); Professor Markku Löytönen, of the University of Helsinki (Chairman of the Finnish Association for Scholarly Publishing); Ilkka Niiniluoto, Rector of the University of Helsinki (Chairman of the Federation of Finnish Learned Societies); Marko Rajaniemi, Lawyer, Ministry of Education; Pentti Rauhala, President of Laurea Polytechnic (Chairman of the Rectors' Conference of Finnish Polytechnics ARENE); and Raimo Väyrynen, President of the Academy of Finland. In addition, Juha Arhinmäki, Director of the Ministry of Education, was also invited onto the working group. Kristiina Hormia-Poutanen acted as secretary of the working group. Kimmo Kuusela from the Swedish School of Economics and Business Administration was the group's permanent expert and writer of the report.

The working group was scheduled to complete its task by January 31, 2005.

The working group met three times. The working group arranged a hearing at the Academy of Finland on January 31, 2005. Following the completion of their work the group will submit a memorandum to the Ministry of Education.

Helsinki, February 9, 2005

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1 Introduction

Over the past few years the Internet has revolutionized scientific publishing. Today, a significant proportion of all scientific publications is available in electronic form, which both accelerates and facilitates researchers' access to information.

Despite the changes that have affected the operating environment in publishing, business practices themselves have changed very little. The pricing of online journals is still largely based on the number of copies of printed journals subscribed by libraries and disregards actual readership statistics. This is also the case when a library or a consortium of libraries has cancelled their subscriptions for printed journals years ago.

As regards scientific journals, Finland has, as a rule, changed over to online versions. From the point of view of subscribers, the problem is that the subscription prices of journals are rising faster than the budgets of libraries. This leads to the cancellation of orders for content resources and cuts in collections. Another pricing problem for large content packages in particular is that they seldom allow cost control.

The publishing sector has rapidly become monopolized over the past decade. The three largest publishers of scientific journals together hold about 50 per cent of the market. The monopolization of the publishing sector and price rises, which exceed the rate of inflation, have created pressures to change the business models used.

In the early 1990s, individual researchers and research groups became aware of the Internet's potential to provide new ways of publishing which would be more harmonious with the open knowledge sharing norms of the scientific world than the printed-product based practice in use at the time. In the same way that Internet connections provided the technological foundation for the organization of open-source projects based on voluntary contributions and openness (of which the Linux operating system is the most visible example), the World Wide Web offers an incomparable global infrastructure for the dissemination of scientific publications. Many believe that the current practice of researchers donating, free of charge, the copyrights in their articles to publishing houses, which then resell them to universities for a high price, is thus an outmoded relic of the paper-based value chain.

This discontent triggered off a new idea, known today as open access (OA). Open access means that the reader can read a scientific article over the net, print it out and even distribute it without payment or restrictions. Generally, the author of the publication retains almost full copyright and can also publish the material elsewhere. Thanks to open access, the linking of publications, for example, from reference lists will be essentially easier, since the reader will not encounter barriers, such as chargeable user licences, and each publication is just a mouse-click away.

2 Changes in scientific publishing in recent years

The Internet is the most important channel for the free dissemination of research results. In 1991, the Hungarian-born Professor of Cognitive Science Stevan Harnad envisaged the evolvement of a 'Fourth Cognitive Revolution' as a result of electronic journals instigated by researchers. According to Harnad, the first Cognitive Revolution was the emergence of language, the second the advent of writing and the third the invention of the printing press. According to Harnad's thinking at the time, the Fourth Cognitive Revolution would be enabled by easy e-mail communication, open peer-review of research results before official approval for publication and the possibility of direct links from the text to the sources.

It was not until the World Wide Web had become popular in the mid-1990s, however, that large scientific publishers began to show a real interest in electronic publishing. Since then, online subscription-based scientific publications have proved themselves so successful that one can talk about a rare Internet success story. Internet businesses generally fret over the many difficulties of selling 'content' on a commercial basis, while the distributors of scientific publications and other scientific data have made a success of it.

Increases in the average subscription prices of scientific journals were steep even before the era of electronic versions. Although price increases of online journals have been slightly more moderate than those of earlier printed papers, they clearly exceed the rate of inflation.

The academic world, which fostered the idea of being able to develop new, readily available, distribution channels for scientific results online, was the first major group to use the Internet. Researchers and library professionals have been demanding more and more vociferously first moderately priced and now completely free scientific publications as the cost savings enabled by Internet distribution technology have not been transferred to the prices of the final products, that is, the online journals.

In 2000, a number of well-known researchers launched an appeal, which won a lot of publicity, known as the Public Library of Science. Their aim was to pressure publishers to allow the depositing of articles the publishers have published in open-access online repositories as parallel copies following, if necessary, a delay of six months from the original publication date. The appeal, which collected more than 34,000 signatures, about a hundred of them from Finland, threatened to boycott the refusing journals in different ways. The immediate effects of the manifesto remained small, but the parties responsible for its

compilation have since contributed to the emergence of e.g. new-open access Public Library of Science journals and the creation of the US National Institute of Health public access recommendations.

The taxpayer's perspective is a new angle in the conflict and carries some political weight. First taxpayers pay all the diverse production costs of science and research. After the research has been completed, they will then have to pay again to see the results.

3 Legal aspects of publishing

Authors, who have created an independent and original literary or artistic product hold the copyright to their work. Copyright gives the author both financial and personal rights. The financial rights include the author's exclusive right to control the production of copies and public accessibility.

In terms of copyright, the publication and dissemination of research results over the Internet covers public accessibility in addition to production. Therefore, the author's or authors' consent is required for the online distribution both of scientific studies and of any individual results incorporated in the study.

Before a publication can be deposited on an Internet-linked server, the depositor must ensure that no legal barriers exist to its online dissemination. The simplest case is when the authors themselves deposit their own works on the Internet. The authors must, however, ensure that the work is not covered e.g. by a publishing contract or a cooperation agreement, which could prevent its distribution over the Internet. If the publication is deposited on the Internet by a party other than the author, by a university or some other community, the author's consent is required as well as the contracts and agreements referred to above.

The establishment of OA journals and open-access online repositories of scientific publications gives rise to other copyright concerns. In order for an open forum for scientific publications to be established the terms under which e-publications are made accessible to the public must also be defined. Certain methods of use, for example browsing and reading, are allowed without a separate user permit. On the other hand, some uses require the authors' permission. Regardless of whether a scientific publication forum grants user permits or concludes contracts, a copyright notification should be displayed on the Internet. Copyright issues should also be taken into account when planning the technical structure of a publication forum.

4 What does open access mean to scientific research?

The most common term today for the free availability of scientific studies or publications on the public Internet is 'open access'. Previous terms used for the same concept include 'free online scholarship'.

The ideal state of open access can be listed as follows:

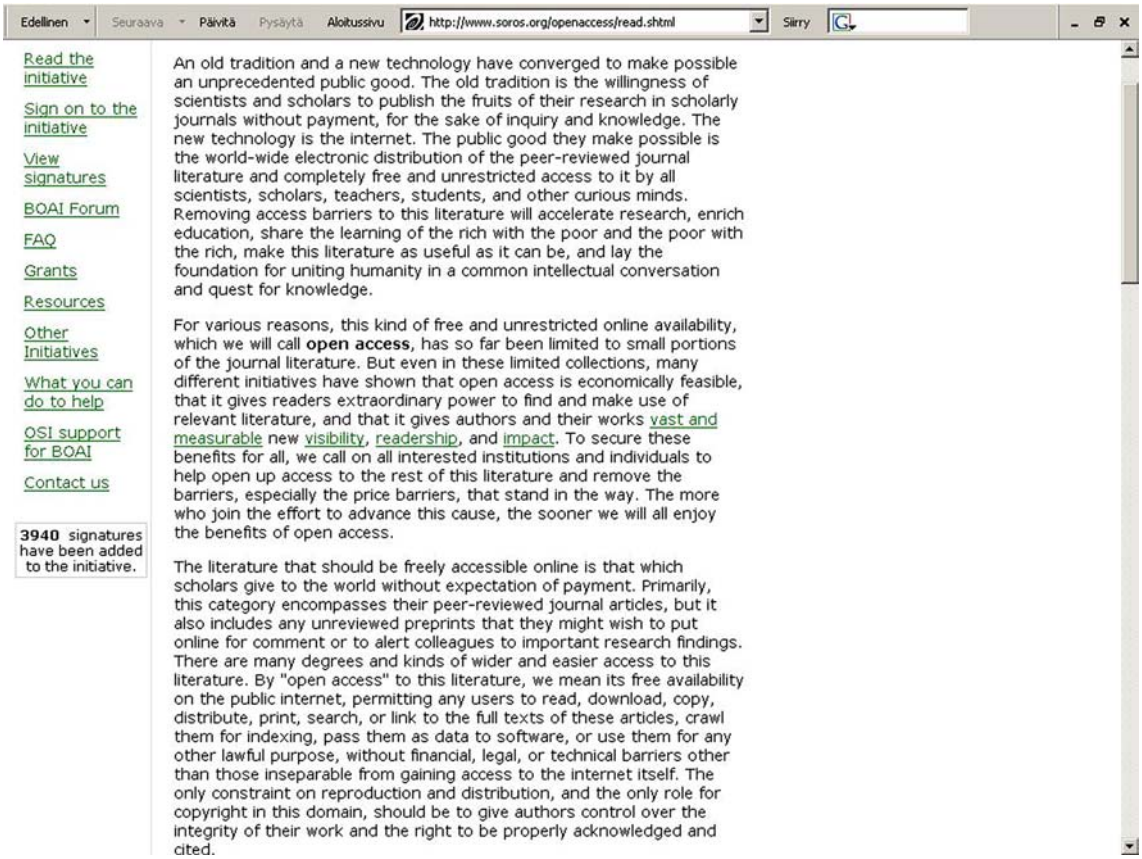
The research is readily available to anybody

- on the Internet with a www browser at no charge and without restriction
- in full-text format
- immediately and perpetually from the time of publication
- without constraint on use or distribution
    - good scientific conduct, however, demands that content may not be falsified and the author and source must be properly acknowledged

The most important of these criteria is open access to the full text via the Internet. The requirement referred to under the code of conduct and ethics for research that the author must be properly acknowledged in all relevant contexts also always applies, unless otherwise stated.

Another absolute requirement is that all copyright holders to the work must give their consent to open access to all parts.

Some permissible variation occurs as to how much broader the readers' rights should be in open access than they are normally. Often even the right to read free of charge is called open access, although according to the most common definitions it alone is not sufficient. The Budapest (Illustration 1), Berlin and Bethesda Open Access Declarations include the best-known definitions for open access.



Edellinen Seuraava Päivitä Pysäytä Aloitussivu http://www.soros.org/openaccess/read.shtml Siirry

Read the initiative
Sign on to the initiative
View signatures
BOAI Forum
FAQ
Grants
Resources
Other Initiatives
What you can do to help
OSI support for BOAI
Contact us

3940 signatures have been added to the initiative.

An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.

For various reasons, this kind of free and unrestricted online availability, which we will call **open access**, has so far been limited to small portions of the journal literature. But even in these limited collections, many different initiatives have shown that open access is economically feasible, that it gives readers extraordinary power to find and make use of relevant literature, and that it gives authors and their works vast and measurable new visibility, readership, and impact. To secure these benefits for all, we call on all interested institutions and individuals to help open up access to the rest of this literature and remove the barriers, especially the price barriers, that stand in the way. The more who join the effort to advance this cause, the sooner we will all enjoy the benefits of open access.

The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

Illustration 1. Extract from the Budapest Open Access Declaration

As regards the achievement of the key aims of open access, the open and unrestricted access available under conventional usufruct rules could in itself be considered an adequate minimum level.

Open access to research or publications does not exclude the possibility of the same research also being available in less open form, for example as a commercial printed product.

From the point of view of open access, the research material for which authors are not paid any royalties or fees forms the core of the material. Such research includes all peer-reviewed original research (primary and basic research) to be published in scientific journals.

Copyright is, however, a broader concept than royalties. Authors of scientific research want their names mentioned every time the study is mentioned, even if they may never receive any financial compensation for the publication of the writings. They expect to receive more indirect rewards in the form of career or research advancement. The same principle applies to peer-reviewed articles offered for publication, the referees are not paid. Nor are writers of articles for scientific reference works generally paid a fee or any other compensation.

Superficially, it would seem then that authors donate their articles to publishers free of charge; these publishers often make a profit by further processing the product (with the help of the scientific community, also free of charge). On closer examination, however, it is true to say that authors are compensated, although not financially, in the form of valuable services, i.e. efficient distribution of their product and useful additions to their list of publications. The fact that most prestigious open-access journals collect a charge from authors is based on this logic.

In addition to research articles in scientific journals, it is not uncommon that separate book-length works are distributed online. In these instances the author may have hoped to benefit from sales profits, although in practice the sale of scientific works, such as

dissertations, is so insignificant that authors seldom receive any financial reward. Textbooks, to which the recommendations of this working group do not apply, are a different matter.

Open access is equally necessary and useful for all scientific disciplines, although until now open-access online repositories have been mainly used by physics research and OA journals by bioscience and medicine.

5 Benefits and risks of open access in scientific research

Researchers

Open access increases the availability, distribution and impact of research publications. It gives researchers free and virtually unrestricted access to the research literature they require.

Open access also provides researchers with tools that can freely exploit existing material. The Google Scholar (Picture 2) and Open Archives Initiative based applications are examples of such recently launched tools. The Open Archives Initiative (OAI) refers to a protocol developed for collecting metadata, which enables the user to retrieve specific documents without having to know the data file in which it is located or even the names of the repositories. The principle is the same as in the conventional search engines on the Internet, but the OAI aims at better results, in other words the search finds all the relevant but only the relevant results.

Teachers and students

OA research literature can be used for teaching and study free of charge without separate permission.

Universities, research institutions and libraries, higher education and science administration

Open access promotes the visibility and impact of research and publishing at higher education and research institutions and helps them to convey information.

Open access reduces purchasing costs of research literature and problems related to the management of material copyrights.

Open access promotes openness in sciences and facilitates the evaluation of research.

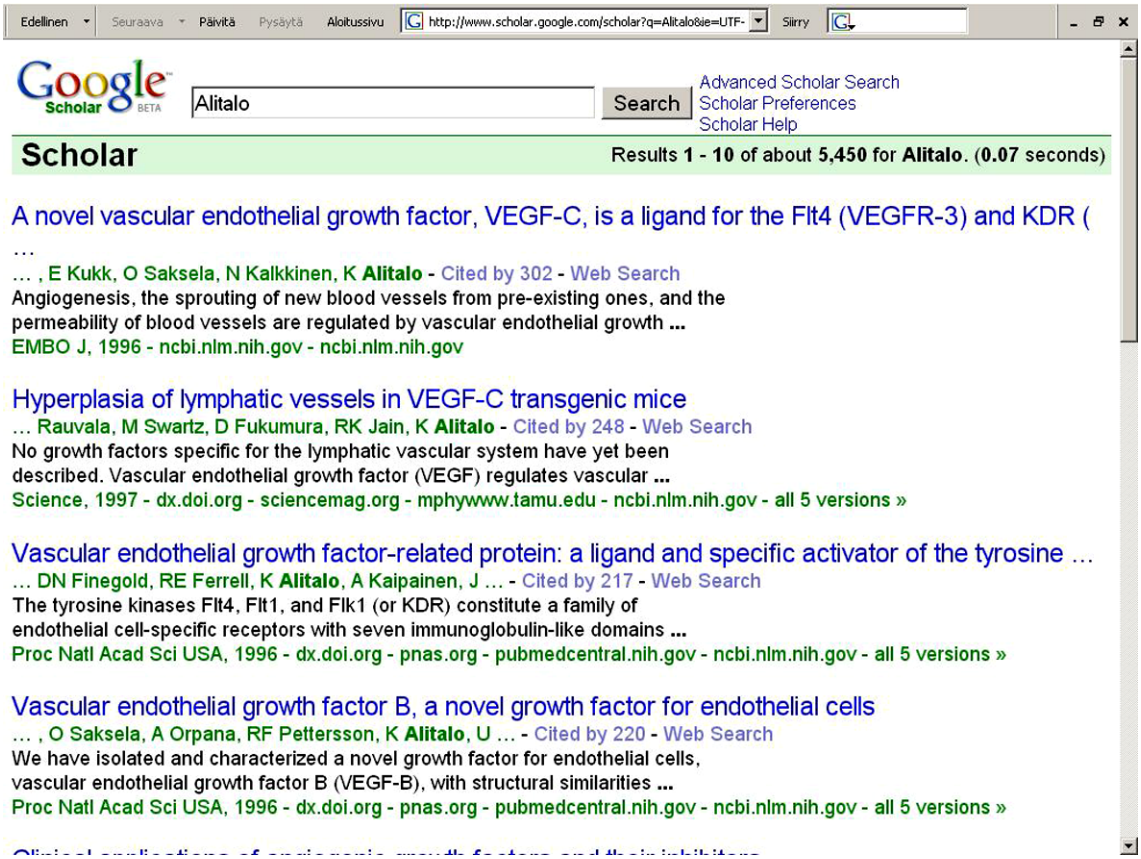


Illustration 2. The result page of a Google Scholar search. The Google Scholar finds both free and charged texts. Number three and four of the texts listed in the picture are openly (freely) accessible.

Scientific publications and publishers

OA scientific publications and articles are easy to find and easy to use. This helps journals to acquire manuscripts and advertising.

If journals charging traditional subscriptions offer even part of their material free (e.g. a certain number of articles in each issue or all articles which are older than a given time limit), their improved visibility may attract more manuscripts, advertisements and subscriptions.

In the competition for good manuscripts, journals which allow writers to deposit parallel, post-publication copies of their articles online will have an advantage over journals which disallow open-access archiving.

Although many scientific publication series may consider their diminished revenues brought about by the possible extension of open access a threat, they all also have other objectives which favour open access.

Research sponsors

Open access increases the productivity of research investments by bringing the results of research within the reach of all in an easy-to-find and easy-to-use format.

Research financed by public-sector sponsors, in particular, should be made freely available in the public domain.

Companies

Open access reduces information acquisition costs for companies and boosts their use of research literature.

General public

Open access brings a considerable amount of otherwise inaccessible research literature within the reach of the general public.

Open access also benefits the public indirectly by improving the effectiveness of the work of researchers, other experts (e.g. physicians) and companies applying the findings.

6 Open-access journals and online repositories

Open access to research can be promoted by two methods: 1) by establishing new online OA journals and by changing old journals to operate on the principle of open access and 2) by researchers self-archiving copies of their own publications and manuscripts intended for publication to make them freely available in online open-access repositories.

6.1 Open-access journals

An open-access scientific journal is a journal of which the whole content or at least *the journal's articles on research* can be read free of charge using a www-browser.

The most comprehensive directory of scientific and scholarly journals is the Directory of Open Access Journals (DOAJ) maintained by the University of Lund. At the time of writing, it comprised 1,440 journals (10.2.2005) For the sake of comparison, Elsevier, the market leader in scientific journals, currently publishes about 1,800 e-journals.

A few OA journals, such as *Annales Academiae Scientiarum Fennicae Mathematica, Silva Fennica and Elore* are published in Finland. The last-mentioned appears only online and is free, while the two first-mentioned are also available as printed versions for a fee.

The production costs of OA journals are covered from various sources. In the case of most journals the finance comes from subsidies or sponsorship, but 10 per cent of the world's OA journals use the new author-pays model, charging writers a fee for work published. In Finland no journals charge writers a fee.

As regards cost controlling, subscription-based journals are a problem because the writers and readers do not need concern themselves about the cost of the journals that they read or in which they publish, since it is the libraries who pay. If, on the other hand, the authors are charged for the publication of their research articles, they and the sponsors may also have to consider the costs of publishing.

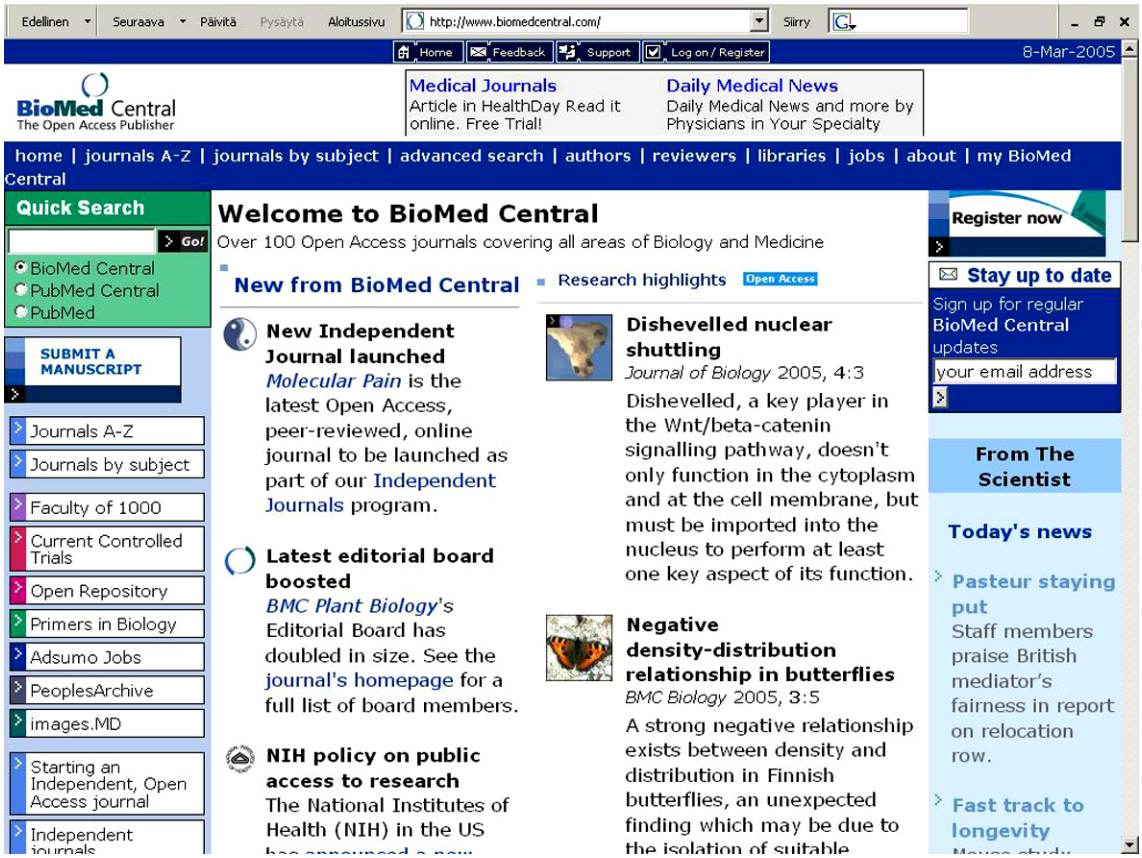


Illustration 3. BioMed Central

The first publication to introduce an article charge on authors was *New Journal of Physics* in 1998. The UK-based BioMed Central (Picture 3), which publishes 120 free scientific journals is, however, by far the biggest web-based author-funded publisher. With a few exceptions, the charge per published article is ca. US 500.

BioMed Central has published over a hundred scientific articles written by Finnish researchers, 39 of which were published in 2004.

In addition to the article charges, another important financing model with BioMed Central is the annual membership fee charged to universities and research institutions, which covers an unlimited amount of published articles by the researchers of the 'institution' concerned. FinELib has obtained such a membership for the entire Finnish public sector for the period 2004–2005. BioMed Central also has similar nation-wide publishing agreements with Norway and Denmark and with all UK universities.

The open-access publisher Public Library of Science, which focuses on top US research has been in operation for about a year. Its current publications (14.2.2005) include two journals, *PloS Biology* and *PloS Medicine. PloS Medicine,* which was established in November 2004, has already published two articles written by Finnish researchers.

6.2 Open-access online repositories

One of the aims of open-access online repositories is to act as a free distribution channel for parallel copies of research findings first published in conventional subscription-based journals (e-journals included). They supplement the small circulation of charged scientific journals and allow researchers and research institutions which cannot afford the charged version of a specific

article to read it free via an open-access online repository. Such repositories may also be suitable as the primary distribution channel for the publication series of higher education institutions and research institutions.

In the self-archiving model, authors themselves deposit articles in open-access online repositories intended for publication in scientific journals themselves regardless of whether the article will with time be officially published in a charged journal or remain in the OA journal or whether it will be officially published at all. The idea is that the article can be read on the Internet, both as a manuscript and as a final peer-reviewed published version. Naturally, the much more important objective of the two is to have *a version published in a journal* or at least to have *a peer-reviewed version accepted for publication in a journal* freely accessible on the Internet.

The growth of open-access online repositories is enabled by the fact that a growing number of scientific publishers allow the authors writing for them to deposit copies of their articles in open-access repositories, either as manuscript versions or published versions or both. It has been estimated that as much as 92 per cent of internationally significant scientific journals (8,950 publications) allow it specifically. Recently, Elsevier (Picture 4) announced that it will further expand the distribution of its open-access web-based versions by allowing its authors to deposit versions of their research intended for printed publication on the researchers' own universities' open-access online repositories, as well.

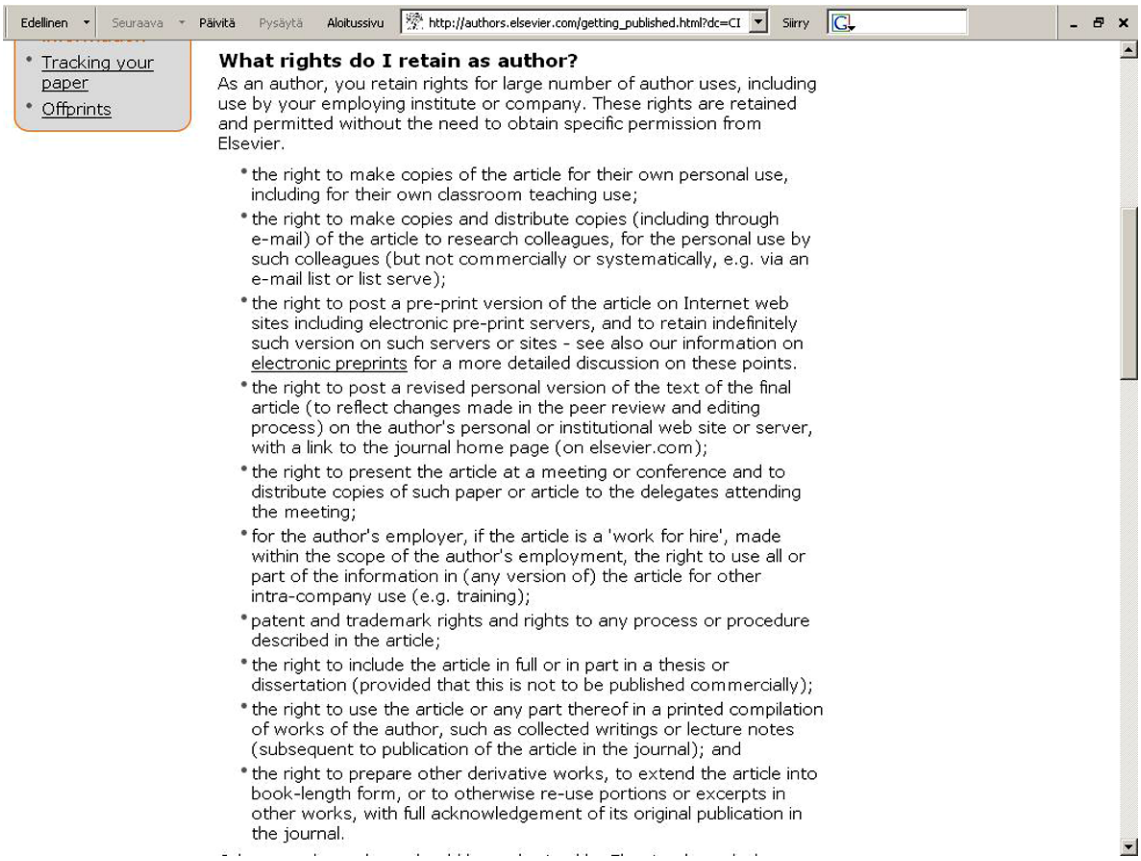


Illustration 4. Authors' rights to articles they have published in Elsevier's scientific journals

It should be noted that a research study deposited in an open-access web-based repository is classified as **published research** or **research publication** or as **a researcher's publication accepted for a list of publications** only if it has also been published in a proper scientific journal or in a scientific publication series. (This 'official' journal or series may have any of the following characteristics: printed, electronic, published both in a printed and electronic version, charged, free). Depositing a research article in an open-access web-based repository alone is not enough to make it **a scientific publication.**

Since physics researchers have played a significant role in developing the Internet throughout its various stages, it is not surprising that the principle of self-archiving has been most widely accepted among physics researchers and researchers in particle physics in particular. Today, the automatic research database arxiv.org began operations on September 16, 1991 and it currently (14.2.2005) includes over 300,000 research manuscripts and published articles in physics, mathematics, non-linear science, computer processing science and quantitative biology.

The fact that similar article databases were also established in other fields of science in the 1990s prompted the idea of a common open archives protocol which would simplify learning their use and enable joint searches in all open archives protocol databases. This idea has since made such rapid advances that today (14.2.2005), the Michigan University OAIster search engine, for example, covers 405 research databases and over five million documents.

The Finnish members of this open archives network, which significantly improves access to materials, include the VTT Technical Research Centre of Finland publications register, the Helsinki University of Technology online collection of dissertations, the Library of the University of Oulu and the Internet publications of the University of Joensuu. VTT has comprehensively stored its research results in its own research database. In addition, a Ministry of Education funded project group on open-access research archives has been investigating the suitability of the DSpace software for an open-access web-based repository based on open archives technology.

Although the technology is ready and even if the establishment of new research archives with the help of free software is affordable, self-archiving of scientific journals has not advanced as rapidly in other disciplines as it has in physics. Therefore, the new strategy for the promotion of open-access online repositories has focused on the institutions practising science, such as universities, rather than the disciplines themselves. If a university could store all its research findings in one place, it could convey to the outside world, "look, here are the results of our work". Similarly, the various research organizations could join forces and set up open-access online repositories.

7 Barriers to open-access scientific publications

Studies have been carried out to chart the various barriers to open access. The table below (table 1) classifies the distribution channels available for research literature to open-access journals and online repositories.

The working group's recommendations aim to create the conditions to facilitate the elimination of barriers to the OA journals and online repositories of Finnish research organizations, such as those listed in Table 1.

Table 1. Classification of different types of barriers to increased open-access publishing and their relative importance

	Open-access journals	Open-access online repositories
Copyright	-	**
IT infrastructure	**	**
Business models	***	*
Indexing services and search systems	**	***
Academic reward system	***	*
Marketing and critical mass	***	***

The source on which the table is based: Bo-Christer Björk, Open access to scientific publications – an analysis of the barriers to change? *Information research,* January 2004

Explanations to the symbols used in the table:

- \- no importance
- * only minor importance
- ** some importance
- *** major importance

Negative views have at times been expressed concerning the scientific community's ability to act collectively in a way that would change operating methods and attitudes and lead to a large-scale move to open access. It has been claimed that none of the actors involved in the scientific publishing process would have sufficient incentives to change the current system. For example, researchers would need to achieve concrete benefits for storing their research in open-access online repositories.

One prerequisite that could attract researchers to publish their research through open-access channels is better general awareness of the advantages of OA. In this respect much remains to be done. In recent years, many national and international conferences on scientific publishing have been devoted to open access, these, however, are mainly attended by members of the publishing and library community and not researchers, who would hold a key role as regards open access.

From the point of view of marketing, it would be important to create prestigious open-access related brands. So far, at least BioMed Central and Public Library of Science have made attempts in this direction. In addition to prestige building, finding successful business models is important for OA journals.

While critical mass has not yet been achieved for OA journals or open-access online repositories, there are examples of some disciplines, such as physics, economics and computer processing science where open access plays a significant role. In some disciplines the removal of a few minor copyright related barriers would also help the process.

A key success factor relating to the technical environment is *the OAI-Protocol for Metadata Harvesting* which helps material retrieval and usability. Its widespread adoption would enable the setting up of and, in particular, filling up of the repositories with scientific publications.

The enthusiasm and iconoclastic spirit of the early days of open access in the 1990s has over the past few years been changing into a more realistic search for sustainable business models, and a better understanding of the barriers that have to be overcome.

8 Open access to research worldwide

The UN World Summit on the Information Society documents, which were adopted by 175 countries including Finland in December 2003 state that: "we strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information, including open access initiatives for scientific publishing" and the plan of action is to "encourage initiatives to facilitate access, including free and affordable access to open access journals and books, and open archives for scientific information…promote electronic publishing, differential pricing and open access initiatives to make scientific information affordable and accessible in all countries on an equitable basis."

The European Union Commission has launched a study into the economic and technical trends in the scientific publishing market in Europe. The study, which will be completed during the course of this year, investigates the changes that are currently taking place; who is driving those changes and why, whether there is resistance to positive changes and who is offering resistance; and what are the consequences for authors, readers and librarians. The study also aims to find means to promote access to and archiving of scientific publications.

In the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, signatories from 19 countries, representing science policy, research sponsors, scientific organizations and scientific libraries, including the cooperation organization for Swedish universities and higher education institutions, SUF, whose signatures Max-Planck-Gesellshaft zur Förderung der Wissenschaften e.V has been collecting since October 2003, express their support for open-access scientific publishing.

Extracts from the Berlin Declaration below:

> Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society. New possibilities of knowledge dissemination not only through the classical form but also and increasingly through the open access paradigm via the Internet have to be supported. We define open access as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community.

In order to realize the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible.

Establishing open access as a worthwhile procedure ideally requires the active commitment of each and every individual producer of scientific knowledge and holder of cultural heritage. Open access contributions include original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material.

Sweden, Norway and **Denmark** have been active pioneers of open-access scientific publishing. Norway and Denmark are national members of open-access publisher BioMed Central, as is Finland. There are many Open Archives Initiative compliant open-access repositories in Sweden and Norway. In Norway, serious thought has been given to making all scientific publishing in the country openly available. In Sweden, the University Library of Lund maintains a global directory of open-access journals.

In **Great Britain**, the House of Commons Science and Technology Committee published a comprehensive report, Scientific Publications: Free for all? in summer 2004. The report recommends that the Government finance the establishment of open-access repositories to be maintained by UK higher education institutions. It also recommends that the Government mandate their publicly financed researchers to deposit a copy of all their published articles within one month from their publication in a scientific journal at the latest. The report covers only natural science, technology and medical journals. The British Government did not, however, agree with the Committee's recommendations for action but recommended that the numerous other projects that promote open-access publishing be continued.

The United States Congress and President have approved the proposal concerning the National Institutes of Health (NIH), a part of the U.S. Department of Health and Human Services, recommending that all research articles produced with financial support from NIH be deposited in a public, open-access database called PubMed Central maintained by NIH within twelve months of their publication in a journal. 25 Nobel Prize winning scientists have expressed their support for the project.

A project named SciELo was launched in **Latin America** in 1998, to produce open-access online versions of Spanish and Portuguese language scientific journals. Its directory currently (11.2.2005) comprises about 200 publication series.

9 Present status of open accessibility in Finland

9.1 Open-access journals

Altogether about seventy peer-reviewed scientific periodicals appear in Finland. Nine of them (13%) are more or less openly accessible on the Internet. It has been estimated that about five per cent of all scientific journals in the world are OA journals.

Below is a list of Finnish OA journals (or publication series) with the following information: name of the journal, the publication year of the oldest online articles, web address, discipline(s), publisher(s), restrictions on open access.

Annales Academiæ Scientiarum Fennicæ Mathematica 1993
- www.math.helsinki.fi/Annales/Anna.html
- mathematics
- the Finnish Academy of Science and Letters

Annales Botanici Fennici 1996
- www.sekj.org/
- botany
- Finnish Zoological and Botanical Publishing Board (Societas Scientiarum Fennica, Finnish Academy of Science and Letters, Societas Biologica Fennica Vanamo and Societas pro Fauna et Flora Fennica)
- the three most recent editions have no print option

Annales Zoologici Fennici 1996
- www.sekj.org/
- zoology
- Finnish Zoological and Botanical Publishing Board (Societas Scientiarum Fennica, Finnish Academy of Science and Letters, Societas Biologica Fennica Vanamo and Societas pro Fauna et Flora Fennica)
- the three most recent editions have no print option

Boreal Environment Research 1996
- www.borenv.net/

- water and fish management in the boreal region, climate and atmosphere research, water biology, ecology and water resources research
- Finnish Environment Institute, Finnish Game and Fisheries Research Institute, Finnish Institute of Marine Research, Finnish Meteorological Institute, Finnish Air Pollution Prevention Society, Finnish Limnological Society and Finnish Water Association.

Elore (until 1997 Elektroloristi) 1995

- cc.joensuu.fi/~loristi/
- folklore
- Finnish Folklore Society

Illustration 5. The Finnish open-access journal Silva Fennica

Finnish Economic Papers 1999

- www.taloustieteellinenseura.fi/fep/
- economics
- Finnish Society for Economic Research (Finnish Economic Association and Economic Society of Finland)
- the most recent issue available in print only

Metsätieteen aikakauskirja 1998

- www.metla.fi/aikakauskirja/index.htm
- forestry
- Finnish Forest Research Institute and Finnish Society of Forest Science
- requires reader's registration

Mirator 2000

- www.cc.jyu.fi/~mirator/
- medieval history
- University of Jyväskylä

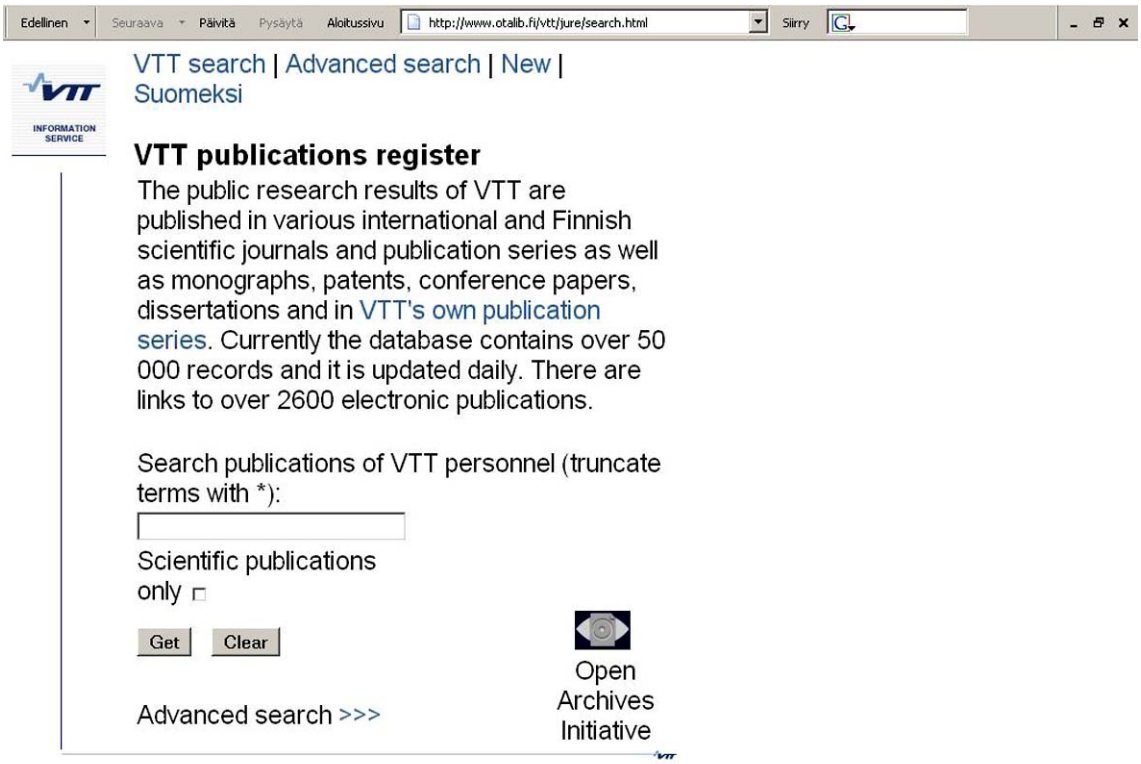
Silva Fennica (ja *Silva Fennica Monographs)* 1998 (Picture 5)

- www.metla.fi/silvafennica/index.htm
- forestry
- Finnish Forest Research Institute and Finnish Society of Forest Science

9.2 Open-access online repositories

Currently, there are four open-access online repositories in Finland which comply with the Open Archives Initiative standard and enable global interoperability between repositories:

- VTT Technical Research Centre of Finland publications register (Picture 6)
- Helsinki University of Technology electronic collection of dissertations
- Library of the University of Oulu and
- the Internet publications of the University of Joensuu



Picture 6. VTT publications register

In addition, research articles published by virtually all Finnish universities are available to a varying degree in full-text versions free of charge on the university libraries' regular open-access pages.

At the global level, it is estimated that about 15 per cent of all articles in peer-reviewed scientific journals are also available online as open-access versions. As regards publications by Finnish research, the figures are about the same, e.g. articles published in peer-reviewed journals by Helsinki University researchers either in Finland or abroad in 2003.

It is also worth mentioning in this context that the Ministry of Education KOTA database shows that about two-thirds of all scientific publications published by Finnish university researchers were published abroad and one-third in Finland.

9.3 Cost effects of open-access online repositories

The minimum cost of creating an open-access online repository is estimated to be approximately EUR 1,000 (Sponsler and Van de Velde, 2001, "Eprints.org Software: A Review").

The British Parliament commissioned report "Scientific Publications: Free for All?" mentions the sum of GBP 3,900 for the cost estimate of setting up a repository and GPB 31,300 for its annual operating and maintenance costs.

In the United States, many open-access repositories have been outsourced to the Berkeley Electronic Press and Pro Quest companies. Boston College reports that the purchasing price for this type of archiving software was USD 6,000 and the other annual costs USD 35,000, which includes an unrestricted amount of storage capacity.

Our experience-based information concerning the indirect effects of open-access repositories on the cost formation of scientific journals covers fourteen years of one subject-specific physics archive, arXiv, seeking global coverage. Calculated for all branches of physics, the annual research output openly accessibly online currently covers about one-third of all articles published in physics journals. In certain sub-sectors of physics, open-access repositories provide almost one hundred per cent coverage.

Two journal publishers, the American Physical Society and Institute of Physics Publishing, were asked if they were worried about the existence of arXiv and whether it threatened their business operations. Both replied that quite the contrary, they had benefited from the co-operation with arXiv and there had been no drop in revenues due to arXiv. (Alma Swan, 2005, article and slide presentation)

9.4 Open access and Finland's policy concerning the international exchange of printed scientific publication series

Finland's policy concerning the international exchange of printed scientific publication series has two aims: (1) to disseminate Finnish research literature abroad and (2) to acquire foreign research literature for Finland. Of these two aims, open access suits at least the first. Open access will make Finnish research literature available to anyone interested, in addition to those involved in foreign exchange.

An increase in the open accessibility of foreign research literature would correspondingly improve its availability in Finland. Moreover, even if printed publication series did have some

advantages over the electronic versions, these advantages would continue to exist side by side with the OA versions, in other words, we can expect the supply of printed material to continue as long as there is demand.

The exchange of printed publication series can also survive side by side with the open-access online versions. For example, a few hundred copies of the printed *Annales Academiae Scientiarum Fennicae Mathematica* journal are still being exchanged although it has been openly accessible on the Internet for a long time.

10 Recommendations of the working group

10.1 Principles

These recommendations apply to scientific publications produced by researchers living in Finland and cover publications that will be published both in Finland or abroad at a future date, i.e.:

- articles in peer-reviewed scientific journals,
- articles and monographs in higher education institutions' and research institutes' publication series, and in other non-commercial peer-reviewed publication series,
- conference presentations,
- dissertations.

Thus the recommendations concern primarily publications for which their authors do not normally receive financial compensation. The recommendations do not concern textbooks intended for basic degree studies at higher education institutions, nor popular works, although their open-access online publishing might well be a worthwhile publication channel for their authors.

The recommendations do not aim to change the evaluation principles of scientific publications. In the future, the superiority of one publication series over the others will be decided by scientific standards and the recognition it commands by researchers in the same discipline. The recommendations do, however, seek to improve the availability, accessibility, distribution, visibility, impact, use and usability of research. If, for example, a discipline represented by the researcher has a choice of open-access journals of at least the same standard as subscription-based journals, the working group recommends that the researcher seeks to publish his/her work in OA journals.

Over the next few years, the majority of scientific research output will, however, be published in the traditional subscription-based journals and charged conference publications as they have been until now. In order to improve distribution and accessibility of research results, the working group recommends that:

- higher education institutions and research institutes, together or individually, set up the necessary open-access online repositories to make them freely accessible via the Internet;

- researchers are encouraged to store parallel copies of their publications in open-access online repositories to rapidly expand the present supply with high-quality material.

In addition, the working group recommends that researchers be informed about the advantages offered by both open-access journals and open-access online repositories.

10.2 The working group recommends that:

Research sponsors (i.e. Academy of Finland and National Technology Agency in Finland (Tekes))

1) recommend that the grantees publish their research articles in OA journals when their discipline can offer OA journals of at least the same standard as traditional subscription-based journals;
2) recommend that when grantees publish a research article in any scientific publication series that they also store a parallel copy of the article in Finnish OA online repositories;
3) approve author fees as part of the expenses of research projects when researchers publish their works in OA journals which collect such fees;
4) encourage scientific publishers and publications they fund to take up open access;
5) sign the Berlin Declaration which recommends open-access scientific publishing;

Universities and research institutions

6) set up individually or together with other higher education institutions open-access online repositories;
7) provide support and advice on how to accumulate open-access online repository collection and maintain them;
8) inform their researchers and students of the potential offered by OA journals and open-access online repositories;
9) make all the scientific publications submitted to their publication series publicly available via their open-access online repositories;
10) recommend that researchers publish their research articles in OA journals when their discipline can offer OA journals of at least the same standard as traditional subscription-based journals;
11) recommend that their researchers deposit parallel copies of their research articles in Finnish open-access online repositories when they publish their articles in other scientific publication series;
12) recommend that their researchers retain the right to deposit parallel copies of their research articles in Finnish open-access online repositories when they sign publishing agreements which transfer the copyrights of their articles to third parties;
13) see to it that when researchers negotiate about copyright transfer to third parties they have information and support services at their disposal to help them retain their right to deposit parallel copies of their articles in Finnish open-access online repositories;
14) compile the principles for storing theses in Finnish open-access online repositories;
15) sign the Berlin Declaration on open access to scientific publishing;

Researchers

16) offer research articles for publication in OA journals when their discipline can offer OA journals of at least the same standard as traditional subscription journals;
17) store parallel copies of their articles in Finnish open-access online repositories;
18) inform the publishers on the restrictions concerning the copyright transfers as referred to under item 12 and negotiate for themselves the right to deposit parallel copies of their research articles in Finnish open-access online repositories;

Scientific journals and societies

19) offer their printed research articles for open-access online distribution as soon as possible;
20) chart the opportunities for cooperating in the creation of the technical infrastructure for open-access online publishing;
21) allow the researchers who write for their journals to deposit parallel copies of their articles in open-access online repositories;

Libraries

22) support the distribution of metadata and full-text online material to be stored in Finnish open-access online repositories and their long-term storage in FinElib under the leadership of the National Library of Finland;
23) coordinate the payment of author fees for OA journals when the open-access publishers collecting such fees offer advantageous national agreements;
24) see to it that open-access material is readily available on the library portals;
25) arrange training in the use of open-access online material, e.g. as part of information literacy training and disseminate information on online publishing;
26) join forces to support the creation and compliance of Finnish open-access online repositories;

The Ministry of Education

27) promotes and supports open-access publishing and carries out and monitors the implementation of these recommendations in cooperation with other ministries;
28) develops monitoring of scientific publishing and the KOTA and AMKOTA data systems so that the statistics will also show the open-access status of the publication;
29) promotes open scientific publishing internationally;
30) encourages cooperation among higher education institutions to advance open access of scientific publications.

Information sources on scientific open-access publishing

General information

- Peter Suber
  http://www.earlham.edu/~peters/fos/index.htm
  - johdanto open accessiin
    http://www.earlham.edu/~peters/fos/overview.htm
  - lyhyt johdanto open accessiin
    http://www.earlham.edu/~peters/fos/brief.htm
- historiaa: osa 1, osa 2 (Richard Poynder)
  http://www.infotoday.com/it/oct04/poynder.shtml
  http://www.infotoday.com/it/nov04/poynder.shtml
- Open access -bibliografia (Charles W. Bailey, Jr.)
  http://info.lib.uh.edu/cwb/oab.pdf

Finnish news items and reviews

- OA awareness rises rapidly in Finland (Bo-Christer Björk ja Turid Hedlund)
  http://www.sciecom.org/sciecominfo/artiklar/bjork_04_4.shtml
- Open Access - nyt heti? (Kimmo Kuusela)
  http://www.lib.helsinki.fi/ajankohtaista/kktiedottaa/220403_open.htm#alku8
- Second Nordic Conference on Scholarly Communication Lund 26–28 April 2004 (Kimmo Koskinen)
  http://www.helsinki.fi/kirjastot/verkkari/2004/05/lund.html
- Julkaisijan iltapäivä 5.5.04 (Eeva Peltonen)
  http://www.helsinki.fi/kirjastot/verkkari/2004/05/julkiltapaiva.html
- E-thesis-palvelun kuulumisia (Jyrki Ilva)
  http://www.helsinki.fi/kirjastot/verkkari/2004/05/ethesis.html
- Open access -aineistojen tarjonta kasvaa (Kimmo Kuusela)
  http://www.lib.helsinki.fi/tietolinja/0104/openaccess.html
- Vapaus, tieto ja tasa-arvo ovat Open Access -julkaisemisen periaatteet (Ilona Manninen)
  http://128.214.21.166/easydata/customers/yliopistopaino/files/uutiset/1_2004.pdf
- Open access on saanut päättäjät hereille (Kimmo Kuusela)
  http://www.lib.helsinki.fi/ajankohtaista/kktiedottaa/200402_openaccess.htm#alku8
- Open Access -julkaisemisen ilosanomaa Hankenilla (Päivi Helander)
  http://www.iprinfo.com/showPage.php?page_id=36&action=articleDetails&a_id=244&id=19
- Forskarsamfundet och Internet (Bo-Christer Björk)
  http://www.oacs.shh.fi/publications/Bjork_ESK2004.pdf
- Open access - vapaa pääsy tieteellisiin julkaisuihin (Bo-Christer Björk)
  http://www.oacs.shh.fi/publications/Bjorkvapaapaasy2003.pdf

Finnish research articles

- OACS-projektin tutkijoiden julkaisuja
  http://www.oacs.shh.fi/publications.html
  - Turid Hedlund, Tomas Gustafsson ja Bo-Christer Björk, "The open access scientific journal: an empirical study." *Learned Publishing* 3/2004. [post-print]
    http://www.oacs.shh.fi/publications/199–210.pdf
  - Bo-Christer Björk, "Open access to scientific publications – an analysis of the barriers to change?" *Information Research,* January 2004
    http://informationr.net/ir/9-2/paper170.html
  - Jonas Holmström, "Cost per Article Reading of Open Access Articles." *D-Lib Magazine*, January 2004
    http://www.dlib.org/dlib/january04/holmstrom/01holmstrom.html
- Kimmo Kuusela, "Open Access – vapaan tiedon julkaisemisen malleja ja strategioita." *Signum* 8/2003 [post-print]
  http://www.lib.helsinki.fi/finnoa/esitykset/Kuusela_Open_Access_Signum.pdf

News and discussions

- Open Access News
  http://www.earlham.edu/~peters/fos/fosblog.html
- SPARC Open Access Newsletter
  http://www.earlham.edu/~peters/fos/newsletter/archive.htm
- American Scientist Open Access Forum
  http://listserver.sigmaxi.org/sc/wa.exe?A0=american-scientist-open-access-forum&D=1&F=PI&H=0&O=D&S=&T=1
- Liblicense
  http://www.library.yale.edu/~llicense/ListArchives/
- SPARC Open Access Forum
  https://mx2.arl.org/Lists/SPARC-OAForum/List.html
- BOAI Forum
  http://threader.ecs.soton.ac.uk/lists/boaiforum/
- *Nature* web focus
  http://www.nature.com/nature/focus/accessdebate/
- *Open Access Now*
  http://www.biomedcentral.com/openaccess/

Journals and periodicals

- DOAJ - Directory of Open Access Journals
  http://www.doaj.org/
- PLoS - Public Library of Science
  http://www.plos.org/
- BMC - BioMed Central
  http://www.biomedcentral.com/
- Regensburg/Max Planck Gesellschaft
  http://rzblx1.uni-regensburg.de/ezeit/fl.phtml?bibid=MPG&colors=1&lang=en
- HighWire Free Online Full-text Articles
  http://highwire.stanford.edu/lists/freeart.dtl
- Free Medical Journals
  http://www.freemedicaljournals.com/

- PubMed Central
  http://www.pubmedcentral.gov/
- SciELO
  http://www.scielo.org/
- Free Full Text
  http://www.freefulltext.com/index.htm

Archives

- OAI-compliant archives in Finland
  - VTT:n julkaisurekisteri
    http://www.vtt.fi/indexe.htm
  - Teknillisen korkeakoulun väitöskirjat
    http://lib.hut.fi/Diss/
  - Oulun yliopiston kirjasto
    http://www.kirjasto.oulu.fi/english/
  - Joensuun yliopiston verkkojulkaisut
    http://joypub.joensuu.fi/joypub/
- EPrints handbook
  http://software.eprints.org/handbook/
- Open Archives Initiative
  http://www.openarchives.org/
- OAIsterin arkistolista
  http://www.oaister.org/o/oaister/viewcolls.html
- arkisto-ohjelmistojen valintaopas
  http://www.soros.org/openaccess/software/
- arXiv
  http://arxiv.org/
- RePEc (Research Papers in Economics)
  http://repec.org/
- PubMed Central
  http://www.pubmedcentral.gov/
- CiteSeer
  http://citeseer.ist.psu.edu/
- University of California
  http://repositories.cdlib.org/escholarship/
- University of Bergen
  https://bora.uib.no/index.jsp

Conferences, meetings and seminars

- Avoimet julkaisuarkistot, Espoo 14.1.2005
  http://oacs.shh.fi/seminar2005.html
- Nordiskt samrådsmöte om e-publicering inom högskolan, Uppsala, 2004
  http://www.svep-projekt.se/samverkan/nordisk_samverkan/
- Second Nordic Conference on Scholarly Communication, Lund, 2004
  http://www.lub.lu.se/ncsc2004/
- Vapaa pääsy tieteelliseen tietoon, Helsinki, 2004
  http://www.lib.helsinki.fi/finnoa/seminaari_2004.htm

Organizations

- FinnOA – Finnish open access working group – Suomen open access -työryhmä
  http://www.lib.helsinki.fi/finnoa/index.htm
- SPARC
  http://www.arl.org/sparc/index.html
- SPARC Europe
  http://www.sparceurope.org/
- ScieCom – Svenskt Resurscentrum för vetenskaplig kommunikation
  http://www.sciecom.org/
- Budapest Open Access Initiative
  http://www.soros.org/openaccess/index.shtml
  - FAQ
    http://www.earlham.edu/~peters/fos/boaifaq.htm

Declarations

- Budapest
  http://www.soros.org/openaccess/read.shtml
- Bethesda
  http://www.earlham.edu/~peters/fos/bethesda.htm
- Berliini
  http://www.zim.mpg.de/openaccess-berlin/berlindeclaration.html
- YK
  http://www.itu.int/wsis/documents/doc_multi-en-1161|1160.asp
- OECD
  http://www.oecd.org/document/0,2340,en_2649_34487_25998799_1_1_1_1,00.html
- IFLA
  http://www.ifla.org/V/cdoc/open-access04.html
- Skotlanti
  http://scurl.ac.uk/WG/OATS/declaration.htm

Research projects

- OACS – Open Access Communication for Science
  http://www.oacs.shh.fi/index.html
- Scientific Publications: Free for All? (United Kingdom Parliament, Science and Technology Committee)
  http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/cmsctech.htm

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  - yhteenvetotilasto (University of Southampton)
    http://romeo.eprints.org/stats.php

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