Knowledge as a commons. Potential for innovation and creativity through open access and open copyright

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Topics

Creativity

Innovation

Creative destruction

Regulatory instances for knowledge and information

Closed and open information markets

Commercial open access markets

Who pays?

A future for closed information markets

Copyright still needed
Questions

1. Is there a crisis in commercial information markets?

2. Is Open access publishing competitive or even substitutable to commercial publishing?

3. Will commercial publisher accept and even apply open access?

4. Are public institutions willing to finance commercial open access publishing?

5. What are the consequences for libraries when open access becomes the default publishing model?

6. Will open access foster creativity in science?

7. Will open access foster innovation in economy?

8. Is there a need for a change in copyright policy?

9. Is there still a need for copyright regulation when access becomes the default publishing model?
Creativity
Intellectual Property Clause

Article I, Section 8, Clause 8, of the United States Constitution grants Congress the power

"To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."
Creativity – scientific creativity

highly depends on access to and use of published knowledge

1) Motivation for scientific research.
2) Ability to correctly formulate research problems within a body of knowledge
3) Ability to create a comprehensive search space for the solution of a scientific problem.
4) Ability to assemble (or induce) and implement algorithms to reduce the search space.
5) Patience and stamina for the exhaustive search for solving the scientific problem within the constrained search space.

S. Kocabas: Elements of scientific creativity
Innovation

innovation – the professional skill to make a difference

to make a difference is only possible if one is in the position **to grab and then apply information** which puts existing structures into question thus creating new - different ones.
Innovation is paradigm of modernity and integral part of any economic policy - bound with progress and growth

From an economic point of view [Schumpeter] innovation is defined by the transformation of an idea/an invention (a piece of knowledge)

- into a new profitable product or service or
- into profitable value-added features of an existing product or service or
- Into new profitable forms of production for existing products or
- Into new profitable business models
- Into new profitable financing models
Innovation in the publishing industry/economy

Innovation is not limited to the sector of the general economy but refers also to all forms of production, processing, representation, distribution and use of knowledge.
According to Joseph Schumpeter (interpreting Karl Marx)

The process of innovation is generally based on “creative destruction“:

“the process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one"


www.econlib.org/library/Enc/CreativeDestruction.html
https://en.wikipedia.org/wiki/Creative_destruction
 Manuel Castells applies the concept of creative destruction for an exploratory theory of informational networks as part of the network society.

The "spirit of informationalism" is the culture of "creative destruction" accelerated to the speed of the optoelectronic circuits that process its signals.

While technological innovation has enabled this unprecedented fluidity, this very process makes redundant whole areas and populations who are bypassed by informational networks.


Manuel Castells, The Information Age: Economy, Society and Culture (the first volume of which, The Rise of the Network Society, appeared in 1996)
The more permissive (free and open) and the more sustainable the production, dissemination and usage of knowledge and information are the higher

- The level of innovation
- the level of economic profitability
- the level of scientific creativity and inventions
Regulatory instances for knowledge and information

Innovative use of knowledge and information

- law
- market
- code/ICT
- norms

Information markets
(1) Proprietary (commercial) closed markets

(2) Free open access exchange markets

(3) Commons-based information markets

(4) Commercial open access markets

(3) Freeconomics markets – zero marginal costs markets

(3) Commercial (closed) value-added markets
(1) Proprietary (commercial) closed markets

- objects
  - trade with information objects
  - claimed to
    - private property rights
      - protected by copyright law

- with the consequence of
  - exclusive commercial exploitation rights
  - manifold scarcity
  - reduced invention and innovation
Informations markets – commercial knowledge economy

5000–10,000 journal publishers globally (5000 in the SCOPUS database)

Science publishing industry employs an estimated 110,000 people globally, of which about 40% are employed in the EU

STM book market (about $5 billion annually) – ebooks 17% 2012 – rapidly increasing

28,100 active scholarly peer-reviewed journals late 2014

Publishing about 2.5 million articles a year

More than 50 mio articles subject to retrieval and download

Virtually all STM journals are now available online

Annual revenues generated from English-language STM journal publishing are estimated at about $10 billion in 2013 - a broader STM information publishing market worth some $25.2 billion

Data-intensive research is challenging publishers to create new solutions to link publications to research data (and vice versa), to facilitate data mining

Mark Ware/Michael Mabe; The stm report . an overview of scientific and scholarly journal publishing.
Informations markets – commercial knowledge economy

still a very powerful and profitable market

and mainly supported/financed by public money

the equivalent of approx. 90,000 APC to Elsevier

Contract between Elsevier and France (Couperin and Agence bibliographique de l’enseignement supérieur)

2014-2018 - 172 Mio. EURO for closed access journals


German science libraries pay about 600 Mio Euros/y for commercial publications

Contract between Baden-Württemberg and Springer starting 2015

Free access to 1.917 Springer journals for 51 academic institutions in B.-W.
The influence of copyright to creativity and innovation

“Everyone says that the **ownership and control of information** is one of the most important forms of **power** in contemporary society ... It is intellectual property ... that provides the **key to the distribution of wealth, power and access in the information society**.

The **intellectual property regime** could make - or break - the educational, political, scientific and cultural promise of the Net.”

The influence of copyright to creativity and innovation

Commercial information markets protected by existing copyright

With the consequence

(Existing) copyright regulation/laws turn out to be an disabling means for new business models and information services in the Internet rather than an enabling one.

Why is that?
The copyright myth

Strong copyright will stimulate creativity in science and will further commercial innovation.

The opposite is true (according to many empirical studies)

The more open the system of copyright limitations is the better creativity and innovation are promoted


Informations markets – commercial knowledge economy

Existing strong copyright supports publishing models and business models from analogous information environments.

Two examples:

- “Bestands-akzessorietät” (strict stock requirement)
- Restricted remote access to electronic library objects
Informations markets – commercial knowledge economy

no longer appropriate in a zero marginal cost society (Rifkin)

to protect publishers from creative destruction and thus hinders innovation

Attempts to soften the harsher aspects of creative destruction by trying to preserve jobs or protect industries will lead to stagnation and decline, short-circuiting the march of innovative progress.

W. Michael Cox and Richard Alm: Creative Destruction 2008

http://www.econlib.org/library/Enc/CreativeDestruction.html
New moral behaviour towards knowledge and information in electronic environments
Free open access markets - Commons-based information markets

- knowledge sharing
- collaboration
- participation
- open/free access
- development rather than growth
- sustainability

Law
knowledge and information
change of moral behavior

norms
market
code/ICT

Open Innovation
More and more people claim that the public should have the right to freely access and use scientific work produced in public environments and supported by public money.
Is sci-hub.org (Alexandra Elbakyan) with more than 48 mio freely available scientific articles a solution?
Free use (illegal website?)

Who's reading millions of stolen research papers on the outlaw website...

A new report shows Sci-Hub is being used not just in developing countries but in Silicon Valley, the Washington D.C. region, and around major research institutions. 

https://twitter.com/costofknowledge
Nature makes research papers open-access to the public

Research papers published by the journal *Nature* will be made free to view online in an effort to make it easier for scientists to share their work with their peers and the public.

http://bit.ly/1YxR8O0

making 48 of its journals free to access, including *Nature Genetics*, *Nature Medicine* and *Nature Physics*.

The PDFs will only be viewable on a web browser, will be annotatable, and copying and printing will be disabled. Share and repost links will be made available for use in news articles in social media.
The PDFs will only be viewable on a web browser, **copying and printing will be disabled**.

http://bit.ly/1YxR800

Stuart L Hart; Mark B Milste: Global Sustainability and the Creative Destruction of Industries. Sloan Management Review;Fall 1999; 41, 1 – http://bit.ly/1Tk78E4
More and more authors in science frustrated by publishers’ business models choose open access journals and free licenses as the primary or at least secondary means of publication.
Open access as an alternative to traditional commercial publishing

**Open-Access-based information markets**

**DOAJ** [https://doaj.org/](https://doaj.org/)
- 7183 journals, 650572 articles (19.10.2011)
- 7449 journals, 745962 articles (31.1.2012)
- 9411 journals, 1099912 articles (1.6.2013)
- 9741 journals, 1,592,661 articles (26.3.2014)
- 10,319 journals, 1,852,651 articles (18.3.2015)

**DOAB** [http://www.doabooks.org/doab](http://www.doabooks.org/doab)
- 3100 Academic peer-reviewed books from 107 publishers (09.06.2015)
- **4649 books** from **154 publishers** (12.5.2016)

**8813 Journals, 1,974,607 articles** (12.5.2016)
(129 countries)

- approx 4 journals/day since 2011
- but still only about 4 % of all commercially available articles

**Free open access markets - Commons-based information markets**
Will commercial publishers accept the OA paradigm?

More and more publishers (in particularly the four dominating ones) accept the OA-paradigm and see their future in OA publishing enforced by golden green

Markets Moral behavior

Users, NGOs science organisations Research funding organisations Political commitment

Elsevier Wiley Thompson Springer
Will commercial publishers accept the OA paradigm?

Publishers increasingly agree to open access

green/self archiving

About 80% of all published articles could be open access available (OA green) – mostly with an embargo time between 6 and 8 months

This will change with the right to a second open publication (added to copyright law) and even more when it will be mandated.

13696 Researchers Taking a Stand. *See the list*

Academics have protested against Elsevier's business practices for years with little effect. These are some of their objections:

1. They charge exorbitantly high prices for subscriptions to individual journals.

2. In the light of these high prices, the only realistic option for many libraries is to agree to buy very large "bundles", which will include many journals that those libraries do not actually want. Elsevier thus makes huge profits by exploiting the fact that some of their journals are essential.

The key to all these issues is the right of authors to achieve easily-accessible distribution of their work. If you would like to declare publicly that you will not support any Elsevier journal unless they radically change how they operate, then you can do so by filling in your details on this page.
The law states:

The NIH Public Access Policy ensures that the public has access to the published results of NIH funded research. It requires scientists to submit final peer-reviewed journal manuscripts that arise from NIH funds to the digital archive PubMed Central upon acceptance for publication. To help advance science and improve human health, the Policy requires that these papers are accessible to the public on PubMed Central no later than 12 months after publication.

The NIH Public Access Policy applies to all peer-reviewed articles that arise, in whole or in part, from direct costs funded by NIH, or from NIH staff, that are accepted for publication on or after April 7, 2008.

http://publicaccess.nih.gov/policy.htm
Will commercial publishers accept the OA paradigm?

Private foundations require golden

Wellcome Trust policy tightening (June 2012)

introducing sanctions for non-compliance and a move to CC-BY licenses
Policies on open access to scientific research results should apply to all research that receives public funds.

**Finch Report** of the Working Group on Expanding Access to Published Research Findings – the Finch Group

http://www.researchinfonet.org/publish/finch/

“Accessibility, sustainability, excellence: how to expand access to research publications”
Who pays?
Public pays for commercial open access

**Public pays**

**APC** (article-processing charge) paid by the **authors** respectively by their **institutions**

APC payed by **foundations** or by grants/sponsorships

APC payed by a **library** for its scientists or by a flat-rate contract

By library/research **budgets**

By research institutions

By **nation-wide (flat-rate)** – contractual agreements

SCOAP-model – a **network of domain-specific institutions** (High-Energy Physics)

etc. etc.
Is it reasonable and/or is it in line with market principles when **commercial publishing organizations** are **subsidized** by public institutions?

Would it be more reasonable (efficient?) when **publicly financed organizations** (such as libraries together with research institutions) **build an open access publishing infrastructure by themselves**?
Science can make its products publicly available from its own resources

- Editors
- Editorial Boards
- Authors transfer their results into communicable documents, anyway
- Quality control by scholars themselves (peer reviewing)

Distribution/making documents publicly available can by done by science itself and/or by support of intermediary institutions such as libraries

Powerful search engines can provide access to distributed resources
Is there a future for commercial publishing in science?

Information markets

- Licence for applying using rights to new products
- Business models für value-added products
  - multimedia presentation
  - hypertextification, dossiers
  - summaries, translations
  - retrieval, text and data mining tools
  - innovative reviewing models
  - personal und institutional background information
  - etc. etc.

- open access (gratuit et libre) to information objects
  - realized by authors in education and science
  - modified and developed in collaborative working environments
  - legally protected by free licences (cf. CC-BY)

Simple publishing model

- Commercial right to a secondary exploitation of information objects
- reversing OA green

Business models für value-added products

Commercial value-added products
Is there still a need for copyright regulation in science and education?
Is there still a need for copyright related to science and education?

When everything will be published in the open access paradigm

yes

protection of moral rights
right to decide when and how to publish
attribution of authorship
protection of works’ authenticity

no need for exploitation rights
no need for contractual licensing agreements

But is it momentarily a realistic perspective?

With comprehensive community open access
Is there still a need for copyright related to science and education?

- yes
  - in addition to the protection of moral rights

Protection and exceptions for published works from the pre-OA-era (still about 90%)

Protection of new commercially produced value-added services

- multimedia presentation
- hypertextification, dossiers
- summaries, translations
- retrieval and data mining
- innovative reviewing models
- personal and institutional background information
- etc. etc.

Protection and exceptions for special products in the close access paradigm

A future market-oriented model for commercial publishing independent from public subsidy?
Questions – Answers

1. Is there a crisis in commercial information markets?  ja

2. Is Open access publishing competitive or even substitutable to commercial publishing?  ja

3. Will commercial publisher accept and even apply open access?  ja

4. Are public institutions willing to finance commercial open access publishing? Should they? ja ??

5. What are the consequences for libraries when open access becomes the default publishing model? ??

6. Will open access foster creativity in science?  ja

7. Will open access foster innovation in economy?  ja

8. Is there a need for a change in copyright policy?  ja

9. Is there still a need for copyright regulation when access becomes the default publishing model?  ja
Thank you very much for your attention

time for discussion (?)
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