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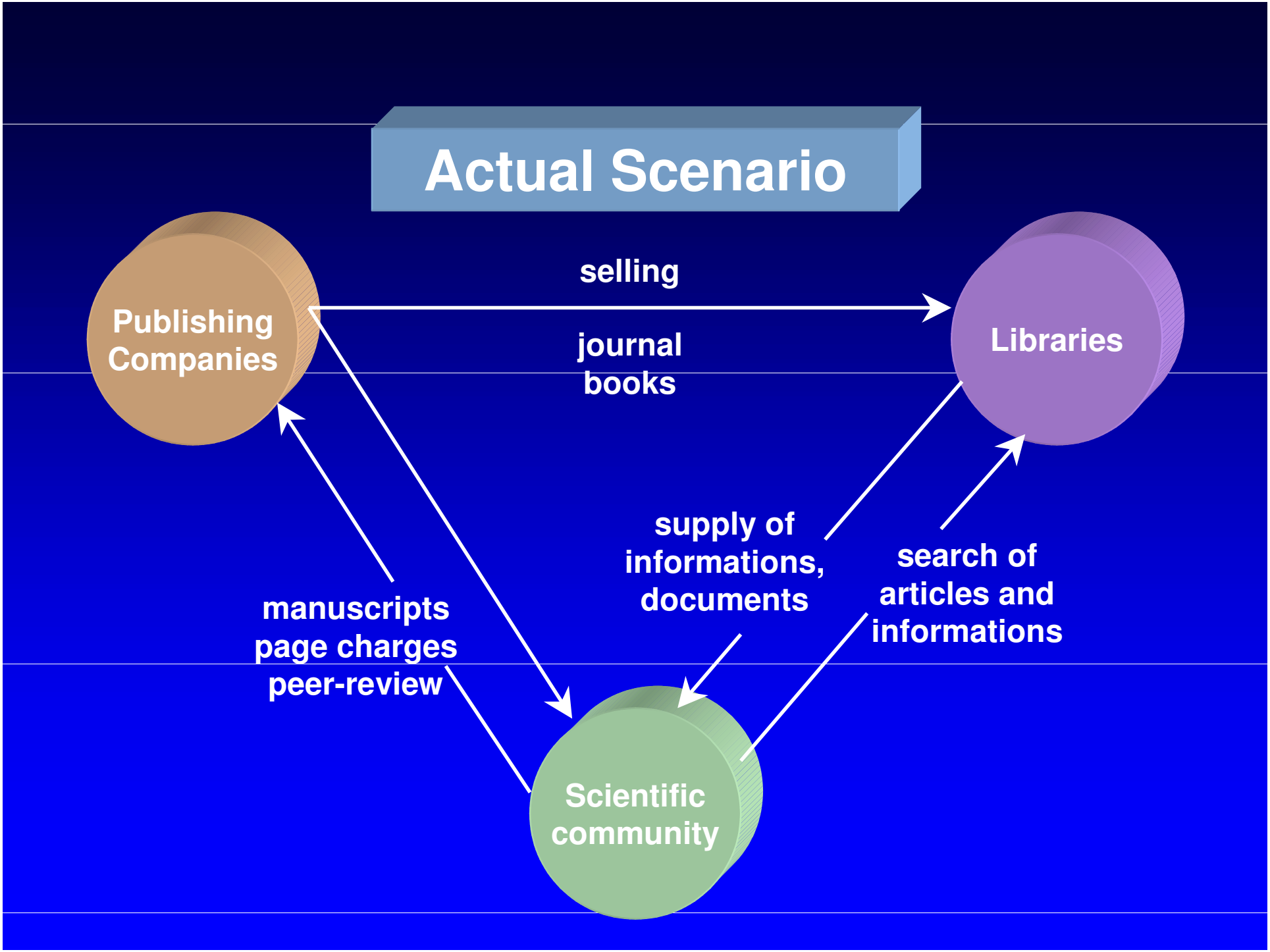
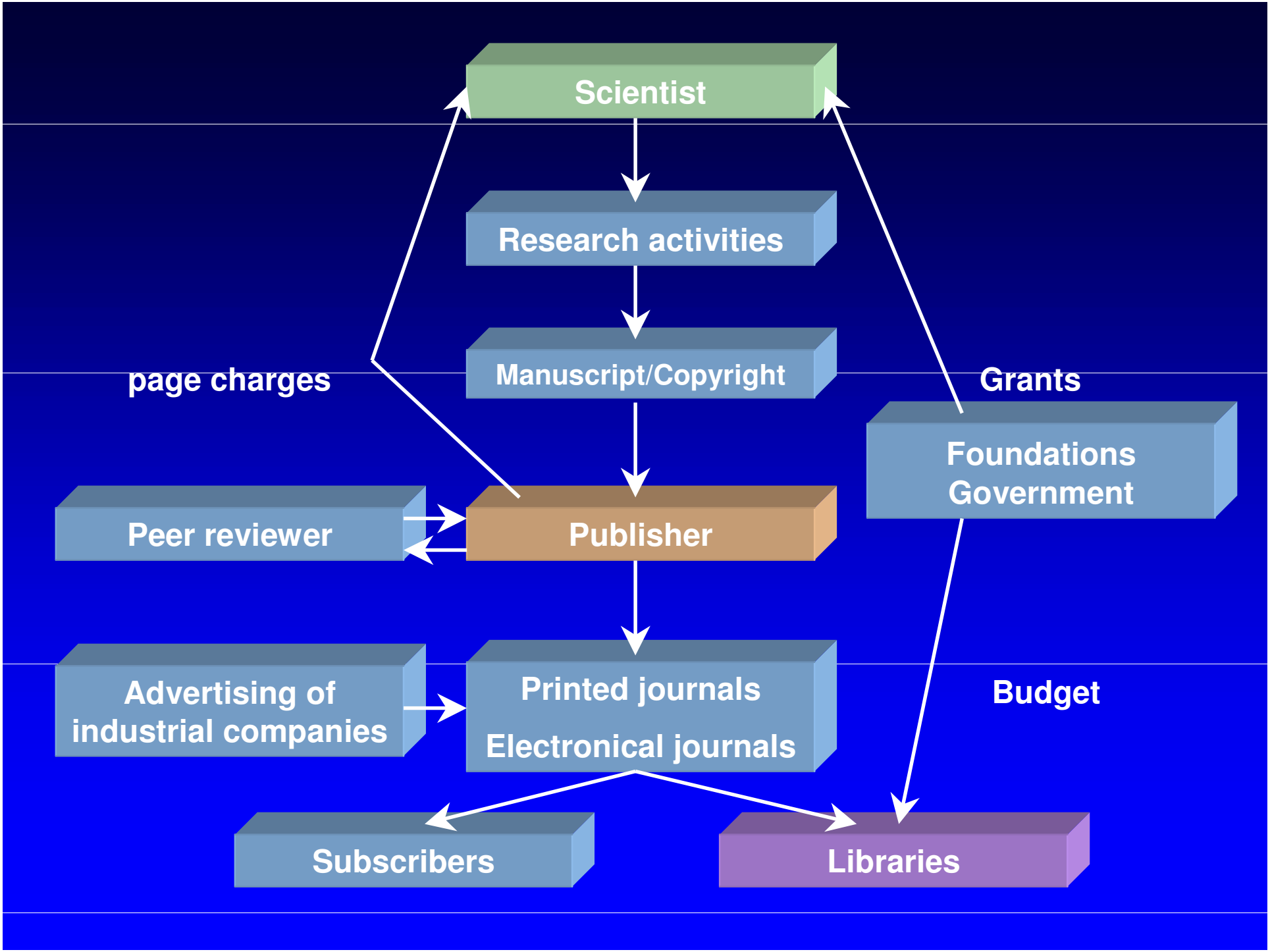
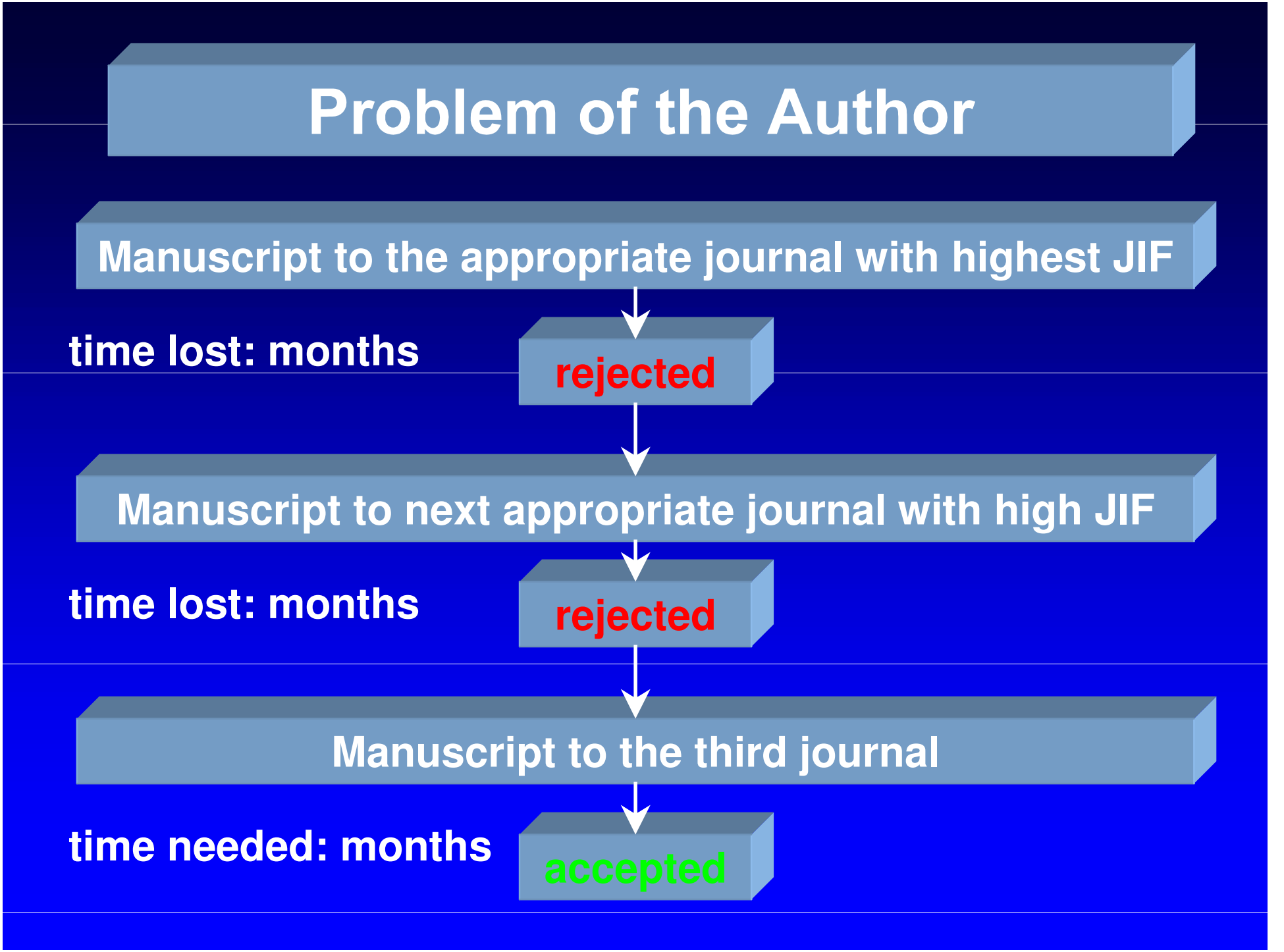
Libraries, Scientific Journals and Scientists: A Critical Interdependence


Actual Scenario
Publishing Companies
selling
journal
books
Libraries
supply of informations, documents
search of articles and informations
manuscripts
page charges
peer-review
Scientific community


Scientist
Research activities
Manuscript/Copyright
page charges
Grants
Foundations
Government
Peer reviewer
Publisher
Advertising of
industrial companies
Printed journals
Electronical journals
Budget
Subscribers
Libraries

Problems of the Scientists

- Scientists have to get their research results and patents registrated as early as possible
- Oral and poster presentations of research results on congresses and symposia do not contribute to an academic career nor do they support applications for funding.
- The every-increasing evaluation of scientists supports the dogma “publish or perish”.
- Only scientific papers of high quality support application for funding.


Problem of the Author
Manuscript to the appropriate journal with highest JIF
time lost: months
rejected
Manuscript to next appropriate journal with high JIF
time lost: months
rejected
Manuscript to the third journal
time needed: months
accepted

British Medical Journal (1979)

Incoming manuscripts:	1551
Rejected:	1223 (=79%)
From the rejected manuscripts were published in other journals:	836 (=68%)
Manuscripts published in journals with similar or higher JIF:	130 (=16%)

Journal Impact Factor

The JIF of a particular year is calculated by deviding the number of cited articles of that journal in a core about 5000 „source journals“ by the number of published articles of that journal in two previous years.

$$\text{JIF} = \frac{\text{citations in source journals 1998}}{\text{number of published articles in 1997 and 1996}}$$

Example: New Engl. J. Med. (1998)

Number of cites in 1998 (to articles in 1997 and 1996):		103033
Number of articles published in 1997 and 1996:		4597
Journal Impact Factor	=	22.41

Ann. Rev. Biochem.	44.40
Cell	40.48
Lancet	17.49
Diabetes	6.25
Dtsch. Med. Wschr.	0.56

Critics on the Journal Impact Factor

1. The criteria for calculation of the JIF is arbitrary.
2. The procedure of selecting the „source journals“ is unclear.
3. 46% of all scientific medical journals are not evaluated.
4. Clinical journals are at disadvantage compared with journals of general basic sciences.

Journal Impact Factor

„Impact factor are widely used to rank and evaluate journals. They are also often used inappropriately as surrogates in evaluation exercises."

E. Garfield, 1996

„This artificial measure is so frail that is makes no sense that it should play even a minor role in deciding how worthwhile individual researchers are."

Sir John Maddox, 1998

„Citation analysis should never be used as a mechanical replacement for careful human judgement.Citation data are not meant to replace informed peer review."

ISI

Effect of the Journal Impact Factor

1. The quality of research activities of scientists is evaluated.
    - Therefore scientists have to increase their publishing activities
    - The general strategy of scientists is to publish in journals with high „Journal Impact Factor“.
2. The slogan „publish or perish“ has never been more actual than in our days.
3. Therefore the number of arising manuscripts is increasing and with them the volume of the journals and number of new journals.
4. The prices of the journals were increasing in the last years (up to 50%) and some journals require „page charges“.
5. Publications in national scientific journals are declining.

Problems of the Scientific Medical Societies

1. Rising costs for getting their national scientific journals published.
2. The subscription fees for the journals are rising.
3. The national scientific journals are internationally not recognized.
4. National journals are not „source journals“ of the SCI and have therefore no journal impact factor.
5. The education, permanent and special postgraduate training, and patient-care are running in the national language. Therefore there is a need for national journals for these fields.

Publisher‘s Problems

1. Collecting manuscripts of high scientific quality, reviews.
2. Board of Editors.
3. Peer-reviewer team (referee team).
4. Rising costs for staff, printing and mailing.
5. Server capacity, IT-staff.
6. Advertising revenue may be declining.
7. Archiving journals, books, and electronic publications is an unsolved problem.

Publishing Companies, Scientists, and Scientific Societies

1. Manuscripts are offered free of charge to the companies by the authors.
2. Some publishers claim page charges for publication of manuscripts in their journals.
3. The copyright of the paper has to be transferred to the publisher.
4. The peer review process is a free and honorary activity.
5. The members of the scientific societies pay for getting their journals published.
7. The industrial companies are eager to advertise in the special printed journals.
8. The profits of the medical publishers are high and usually not shared with the scientists or the scientific societies.

Copyright

Science

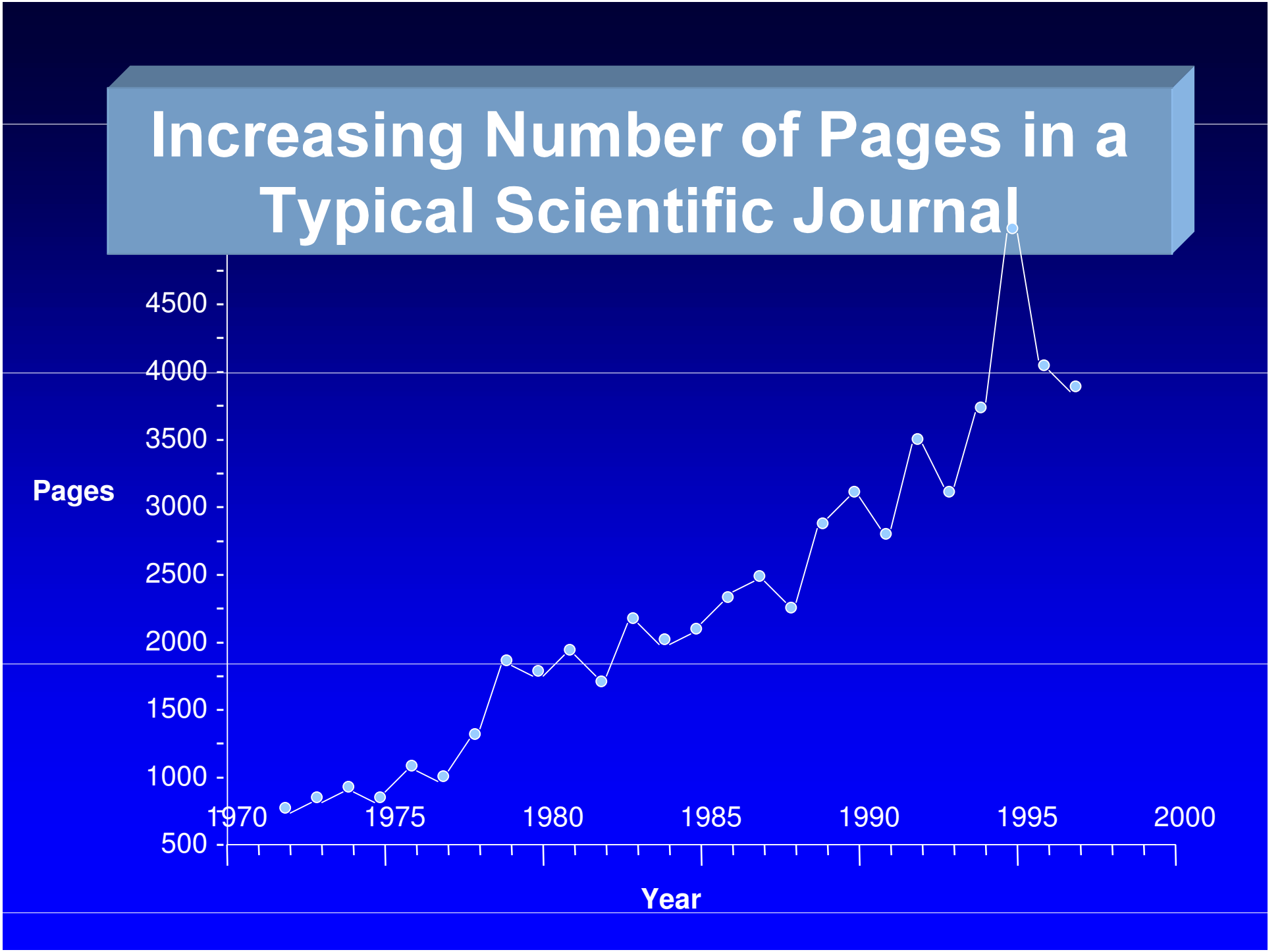
- Authors agree to transfer copyright of the paper (including electronic rights) to Science.

- The paper will remain a privileged document and will not be released to the press or the public before publication.

Problems of the Libraries

1. Reduced or limited budgets.
2. Limited personell capacity for service.
3. Hard to find and to hold IT-staff.
4. Change in the kind of service (printed to electronic papers).
5. Expanding number of journals, books, reports.
6. Rising volumes and prices of journals (20% per year).
7. IT-staff and programs must be adapting to actual requirement.
8. Limited space for archiving journals, books, dissertations etc.
9. Change in the basic role (unasked permanent customer-adapted information).

Increasing Number of Pages in a Typical Scientific Journal



Library Funding Crisis

1. Number of medical journals increased in parallel with research progress and with emerging of new subspecialties (see AWMF).
2. The number of pages and thus the size of volumes expanded.
3. Cost of journals escalated faster than inflation. (Mean annual increase during 1990 → 1997: 11.5%).
4. The number of journals in the libraries is going to be reduced to a core set. This is defined by the needs of the faculty of the medical school. Unfortunately this core of journals does not cover the demand of special research fields.
5. Publishers are placing unprecedented new restrictions on distribution and use of electronic journals. Journals are available via the Internet, but E-Journal pricing by publishers is becoming more and more expensive („pay per view“)

Desirable Role of the Libraries

1. Provision of all resources (journals, books, reports, letters, patents, dissertations etc.) for the scientific community, to promote the research work.
2. Enable browsing and navigation by appropriate search engines (MEDPILOT as virtual library) and thus enable immediate an complete search for recent scientific publications.
3. Access to electronic full-texts.
4. Individualized profile service (printed and electronic).
5. The libraries have to archive the scientific literature, since the printed books and journals survive the changing technical development.
6. Archiving electronic contents in limited library centers.
7. Portal for electronic journal in cooperation of DZBMed, DIMDI and AWMF.

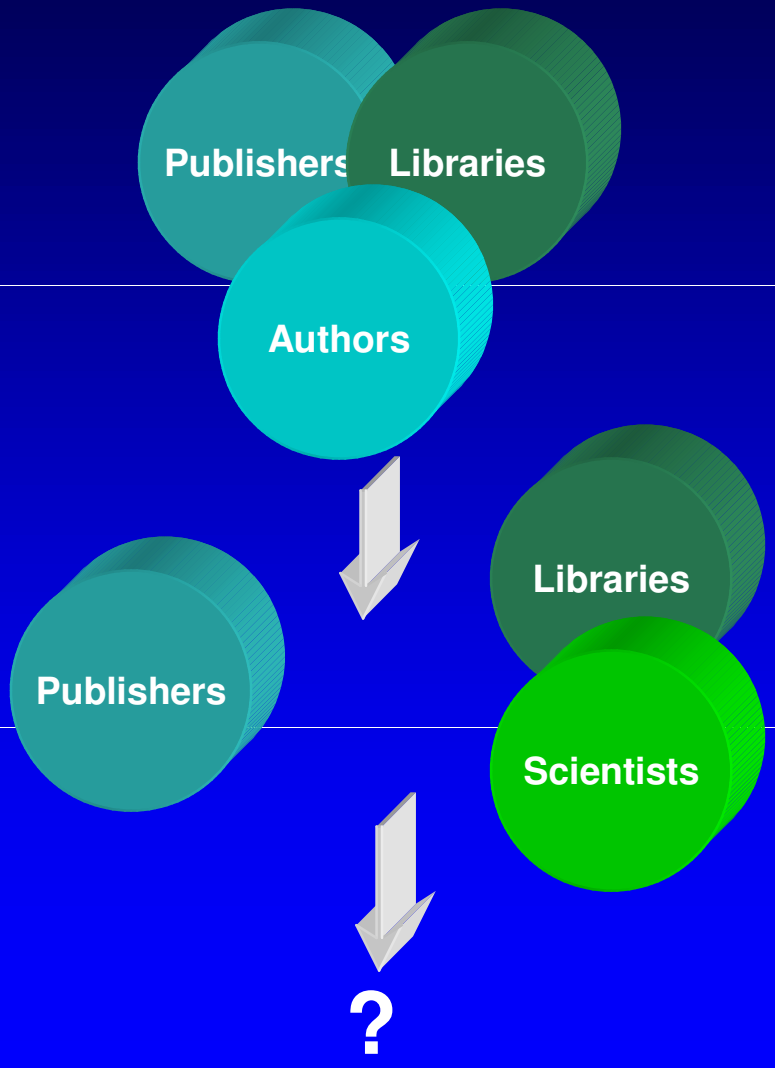
Electronic Portals

1. Pub Med Central (US)
2. E-Bio-Sci (Embo)
3. German Medical Science
4. German Academic Publishers

Possible Solution of the Problems

- The copyright of publications shall be revised.
- Scientists should not sign away their ownership when they submit their manuscript to a journal. This unfounded donation to publishers should be finished.
- The financial burden for publishing is to high for scientists and scientific societies. If there is no solution of the copyright and financial problems the scientific societies will establish their own electronic journals.
- The influence of the JIF must be reduced, the evaluation of papers and publications must be performed by the competent scientific societies (not by journal impact factors).

Vision


Publishers
Libraries
Authors
Publishers
Libraries
Scientists
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