

## HOW ARE ELECTRONIC JOURNALS COOKED ?

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### Abstract

Electronic publishing changes all aspects of scholarly journals, including the editorial process and journal production. Online journals take advantage of the modern technology in receiving submissions from authors, in handling the peer-review process and in producing the journal as you see it on the computer screen. This article explains how new technology adds value to the editing and production of STM electronic journals, and how this value benefits librarians and researchers.

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Since they began in the 17th century, scholarly journals have always been about paper and print. Fundamental works such as "[Journal Publishing](#)" by Gillian Page, Robert Campbell and Jack Meadows, detail all the stages in publishing printed journals. During the last decade electronic publishing technology has revolutionized the way scholarly journals are made, marketed and used. Even a new name has been coined: e-journals.

They key stages in e-journal publishing are:

- editing
- production
- distribution
- sales
- promotion

Modern technology has affected all these fields. Here are a few examples of various solutions addressed to all stages of e-journal publishing.

- editing - online manuscript submission systems
- production - e-journal hosting providers
- distribution - e-journal hosting providers
- sales - sales administration systems of subscription agents
- promotion - abstracting and indexing services

Online manuscript submission systems assist editors to manage peer-review fast and comfortably. In the electronic world authors deliver their articles in electronic format, so it is relatively easy to convert them to formats (like PDF) in which they are ultimately published. Very sophisticated electronic publishing solutions have been developed lately by the largest commercial publishers and their technology vendors.

[Elsevier's ScienceDirect](#) makes a clear technology leader in this area. Specialized companies, called e-journal hosts, like [Ingenta](#) or [MetaPress](#) offer e-publishing services to journal that want to become electronic. Large publishers and leading subscription agents like [EBSCO](#) have developed systems that help them administer sales of their huge product portfolio with multiple prices to many countries. In scholarly publishing promotion and marketing are quite passive, these are rather the scientists who look for information than publishers looking for readers. This is why so flourishing are special services that help scientists to search to the information they need. Abstracting and indexing services like [Current Contents](#), [Medline](#) or [Embase](#) take full advantages of such technologies as active linking. New business like electronic content aggregators have emerged. [Ovid](#) and [ProQuest](#) make perhaps best illustrations of this business model.

This article focuses on the two earliest stages in e-journal publishing: editing and production.

Journal editing covers the following stages:

- collecting submissions
- communication between editors, reviewers and authors
- decision (reject, accept, correct)
- correction and submission (by author)
- language editing
- technical editing (formatting)

Programmers have developed software that automates the entire editorial process. This publication, [Tools and Resources for Online Journal Editors and Publishers](#), reviews existing solutions. Most publishers, even the largest players, rent universal systems like [ScholarOne](#) or [Editorial Manager](#). [Central European Science Journals](#) asked Hungarian programmers in 2002 to develop such a system. Its name PPS stands for [Paper Processing System](#). Now it works for our own journals and we have offered it to editors of other journals.

PPS leads all its users "by hand" from the very beginning:

- author logs in, downloads manuscript
- editor appoints reviewers, system informs reviewers
- reviewers log in, read manuscript, and download their reports
- system informs editors that reports have come
- editor makes decision, system informs author
- if submission accepted, system informs technical editor

Here is what the PPS does for the editorial process. It:

- structures peer-review: all steps are defined and must be followed
- measures efficiency: produces reports on time used for review
- automates communication: system informs users of all steps taken
- provides visibility: users can see current status and materials

The online manuscript submission system, like PPS brings many benefits:

- for publishers: enables control and improvement of editorial process
- for editors: speeds work, makes its much easier to handle

- for authors: speeds decision, gives visibility of current status
- for readers and librarians: ensures faster publication of research

The editorial process for e-journals ends with a final format (usually PDF). Here is where the journal production begins. Production sounds like making cars or chemicals. E-journal production is quite different. It is all about adding functionalities to the content. These functionalities are various ways in which the content can be accessed, sold, promoted, and otherwise used by all players in the journal publishing arena. Modern technology makes it all possible. As said above, such technology rests either in the hands of major publishers like Elsevier or specialized providers called e-journal hosts, such as [Ingenta](#), [MetaPress](#), [Extenza](#) or [HighWire](#). [Central European Science Journals](#) use the services of [Ingenta](#). Good review of such services is given in the article [Ejournal Hosts: The Next Generation](#) by Judy Luther and October Ivins.

What are those magic ingredients that change plain computer files with journal content into truly electronic journals ? How are electronic journals cooked ?

Here is what makes journals true e-journals:

- maintaining content on international system of file servers
- interface for access authentication
- e-commerce tools for subscription sales and pay-per-view
- distribution of metadata to A&I services and other gateways
- Active Reference Linking
- full text searching
- automated email based contents alerting service
- maintaining archive of journals accessible to readers even after termination of agreement between publisher and e-journal host
- activity reports showing use of journals by readers

Some research institutes, universities and societies that publish journals still believe that mounting PDF files on their servers changes their journals into electronic journals. They do not realize that it adds NONE of the functionalities listed above. Journals online are not necessarily online journals.

Benefits of the new technology in journal publishing are multiple and have been discussed so widely that I will not elaborate on them here. In my view, the most important are:

- integration with various information systems (libraries, secondary publishers)
- linking between publications
- sales of single articles and subscriptions online
- speeding editorial and publishing process

The main issue yet to be resolved is archiving of electronic content. In my view, the key to solve it is not technology but organization and finance.

Though electronic technology revolutionized journal publishing so much already, we should realize that soon it will bring new fascinating developments.