

# Electronic Journal Publishing

**Ilham N. Jabir**

University of Baghdad  
College of Education for Women  
Department of English

## Abstract

This research paper presents an overview of electronic journal publishing: kinds of e-journals formats, and some issues concerning this type of journals, like cost, pricing, access, interactivity, archiving, etc.

## Introduction

Information technologies have facilitated the publication of scholarship on the web. To some extent, it has altered old epistemologies of research and re-conceptualized ideas in forms that are quite interactive, global, and instantaneous (Okerson, 1991). Electronic publishing is certainly improving scholarly communication. First, it breaks the tyranny of distance between authors and editors, reviewers, and researchers. Second, it enhances global scholarly communication. Third, electronic publishing provides financial advantages, eliminating many of the costs associated with printing and distribution (Varian, 1998). Fourth electronic journals are intrinsically archival, since it is easier to store back files of journals and linked scholarship together with hyperlinks.

In the west, the concept of a digital library is a metaphor for a library of the future where journals and books can be accessed anywhere in the world over networks with storage on a single server. The substantial lower costs of digital storage mean that individual universities can maintain storage space or operate in consortia where space is shared by groups of academic institutions (Getz, 1997).

This paper overviews several critical questions about e- journals like publishing speed, cost pricing, access and searching capabilities, interactivity, citations, and archiving. In addition to kinds and formats of electronic journals. The paper ended with a brief account of the status of electronic journals.

### 1.1 Kinds of Journals

Journals are of several types. They are:

1. Pure e- journals: they are originally distributed only in digital form.

Example: **Electronic Journal of Communication.**

2. E-p- journals: they are primarily distributed electronically, but may have very limited distribution in paper form. Example: **Journal of Artificial Intelligence Research**.
3. P-e-journals: they are primarily distributed in paper form, but are also distributed electronically. Example: **Science, Physical Review**.
4. P+ e-journals: they are initiated with parallel paper and electronic editions that may be widely distributed. Example: **The American Chemical Society's Organic Letters**.

## 1.2 Document Formats in Electronic Publication

There are a number of currently competing formats, which can be grouped into three basic categories:

1. content only formats;
2. lay-out oriented formats; and
3. mark-up formats.

### 1.2.1 Content Only Formats

The primary example of a content-only format is ASCII, the American Standard Code for Information Interchange. It is solely designed to represent the alphanumeric content of a document without indicating in anyway how the document should be formatted.

Because ASCII acts as the underpinnings for so many other formats, and has been standardized by ANSI and the ISO, ASCII is universally readable. Every operating system comes equipped with a simple text editor, and every word processor can read ASCII text.

ASCII also offers users a degree of power not common with some of the other data publishing types, most notably in its flexibility and malleability. A vast array of tools exist for almost every platform for easily parsing and searching single ASCII documents as well as whole groups of text. Also, because of its level of standardization, ASCII is one of the few formats we can be relatively certain will still be readable in 25 or 50 years. Finally, ASCII is extremely economical in terms of bandwidth usage, because there is no extra code for formatting information.

### 1.2.2 Layout-Oriented Formats

The second major type of format is layout-oriented. This format is designed specifically to maintain the look and feel of a document, as it was created by the author. Just within this category are a number of competing proprietary formats, including Envoy from Novell and Common Ground from Common Ground Software, although by far the most successful of these is Portable Document Format (PDF) from Adobe, embodied in the Acrobat electronic publishing system.

PDF is almost equally concerned with content and layout. While it can almost perfectly preserve the original layout of a document, it also maintains the contents in a searchable , machine readable, format PDF is roughly based on Adobe's older postscript printer language, and is easiest to understand in that context. Much like postscript, PDF, is designed to maintain the layout of a document from the format it was created into its final viewable form.

PDF essentially works as a printer device when the Acrobat Writer is installed on a machine. All a user needs to do is select the Adobe module as their printer and any document printed from any application will be turned into a reasonably exact replica of the original, and one that remains machine searchable. This is extremely powerful, and coupled with Adobe's free distribution of the viewer software helps make Adobe a formidable contender in the world of electronic publishing.

### 1.2.3 Mark-up Formats

The third, and now most common, type of format is the mark-up, the two main examples of which are SGML and HTML. Mark-up formats have the benefit of being entirely created from ASCII; using standard text to create the mark-up tags embedded in the text, and so creates small documents that are easy to send over a network. Another big size advantage for mark-up formats over lay-out formats, is that they rely on each implementation, whether on a web browser or printed page, to supply the physical layout information and so do not need to bother coding that information into the actual file: This can significantly reduce file size. The other big plus mark-up formats, at least SGML and HTML, is that they are international standards, free for anyone to use that wants to take the time to figure them out.

SGML is actually a 'metalanguage' for describing the content and structure of a document logically, independent of its layout, and as such it is much more concerned with the content of a document rather than its 'look and feel'.

A key concept in the area of SGML publishing is the Document Type Definition or DTD. A DTD is the set of rules that an author must follow in the creation of a particular type of a document. Each document must therefore conform to a DTD, which acts in effect as a list of allowed mark-up types. Common example of a document types are things like memos, quarterly sales reports, or journal articles.

Conceptually, at least, SGML sounds like a pretty good solution for electronic publishing. Unfortunately, it has one tremendous drawback. It is complicated to use. Unless a potential publisher had a lot of particular type of document to create, they would not want to go through the months of

efforts to design and create a DTD. And every new document type would require the same effort for a new DTD.

Hypertext Mark-up Language (HTML); is often considered a sub-complementation of SGML, in that it is a particular type of DTD. HTML was, as its conception in 1990, simply an SGML-like language rather than a sub-implementation of SGML. It was not until 1994 that a DTD was formulated for what was then HTML+. It was soon outdated by HTML 2.0, and now HTML .3.0.

This situation highlights one of HTML's most serious problems as an electronic publishing method. It lacks the standardization necessary to make it a dependable long-term solution.

On the positive side, HTML naturally shares many of the same advantages as SGML. It is ASCII based and thus makes small network-friendly files, and it is free for anyone to use also it has the current overwhelming advantage of being extremely easy to use.

### **1.3 The Potential Players in Electronic Publishing**

The main groups, who have an interest in the development of electronic delivery of academic publishing, are the following (Brown, D.):

#### **1.3.1 Journal subscription services.**

An estimated 250 subscription agents have a \$3 billion turnover worldwide. They provide a range of functions for both libraries (such as a single point of contact for purchase, one invoice per annum, and consolidation services) and publishers (such as a single payment, electronic ordering, promotional services, and statistics).

#### **1.3.2 Document Delivery Services**

It is the delivery of single articles (as opposed to the collection of articles bound into a journal issue). This has typically been carried out by libraries sharing resources and by specialist operations, such as the British Library Document Supply Centre, which handles around four million requests annually. More recently, combined alerting and article delivery services have arranged. Examples include Uncover, Faxon Finder, etc.

#### **1.3.3 Automated Library Systems**

This is a \$ 500 million pa industry that has tended to focus on the automation of cataloging and issue control in libraries.

#### **1.3.4 Bibliographic Databases**

Over the last 10-15 years, the number of bibliographic databases and vendors has grown dramatically, from around 300 databases from 100 vendors in 1975 to nearly 8,000 databases from over 1,4000 vendors by 1992 (Williams, M.). to date, these products have largely been aimed at intermediaries.

### **1.4 New Electronic Intermediaries**

The existence of the Internet and the growth in the number of people able to access it is undoubtedly changing, and will continue to change the modes of scholarly communication. The virtual removal of the time and cost barriers to international communication and the opportunities provided for richer forms of communication, including the integration of text, sound, and still and moving images will have profound effects. It is into this arena that BIDS has emerged as a new player with the Journal Online Service. Another player in this business is Catchword.

### **1.5 Publishers**

The issue of most concern to publishers is whether or not the traditional printed academic journal can survive. Publishers worldwide have been faced with visions circle of falling subscriptions forcing price rises causing yet further cancellations. Publishing is also a fragmented industry. Over 17,000 publishers produce around twice that number of titles. Publishers vary in size from Elsevier with 1,200 titles to many small publishers with only one or two titles. Some publishers have been playing an active part in the development of electronic versions of their products and making them available via the network. These include Academic Press, Blackwell Science, Institute of Physics Publishing and Kluwer Academic. Others have taken part in experimental electronic delivery projects, including Red Sage (Springer-Verlag) and TuLIP (Elsevier).

### **1.6 Libraries**

Libraries have traditionally been physical collections of material for reference. There appears to be a correlation between collection size and quality of research at an institution, though it is very difficult to quantify. Currently, around 120,000 serials are in print (according to Ulrich's International Serials Directory) and the number is growing. Library budgets have been static or falling. Many libraries have reacted by cutting journal subscriptions and moving to document delivery services.

### **1.7 Issues in Publishing Scholarly e-Journals**

#### **1.7.1 Publication Speed**

A common belief that switching from paper to electronic distribution will improve the speed of publication persists. After a manuscript is submitted by an author, it goes through a peer review process, which could be comparably long for p-journals and e-journals. Each accepted manuscript goes through an electronic typesetting process. This can take longer for p-e- journals because each version must be formatted separately. The time needed for typesetting pure e-journals depends upon the complexity of the text formatting; an ASCII file can be prepared quickly whereas SGML coding requires much more work. This process also varies from discipline to discipline.

An accepted manuscript can be posted rapidly on an e-journal's web site (after typesetting). Thus, an e-journal could significantly decrease its publication time if the publisher decides to post each article as it was accepted and typeset.

### 1.7.2 Cost of Producing e-Journals

Variations in the design and maintenance of e-journals can cause their production costs to differ. (Harnad, 1995) claims that electronic publishing may be 70 to 90 percent less costly than paper because pure electronic publishing incurs only the costs associated with peer review and copyediting. However, the cost of an e-journal may depend on the type of document coding used. Formatting manuscripts in ASCII or HTML is relatively inexpensive, while SGML tagging can be much more costly (Holoviak & Seitter, 1997).

The administrative costs of e-journals may be affected depending on whether they are free to all readers or available only by subscription. One of the largest costs (for fee-based e-journals) is the cost of installing and maintaining authentication software and subscriber data. The subscribers to printed journals are responsible for storing and archiving their own journal issues, while the e-journal publisher assumes responsibility for organizing, storing, and maintaining electronic achieves. Bot, Burgemeer and Roes, (2000) calculated the costs of the pure e-journal Electronic Journal of comparative Law (EJCL) and compared these calculations to their costs estimates for printed law journals. They concluded that the costs of e-journal were considerably less than the cost of producing p-journal.

### 1.7.3 Pricing of E-Journals

The price of journals is closely related to their production costs (Okerson, 1991).expected that savings in printing and mailing costs of pure e-journals would eventually relieve the 'serials crisis' (Walker's, 1998) article in The American Scientist advocated establishing pure e-journals sponsored by scientific societies, which could be published very inexpensively and help to solve the serials cost crisis.

In the case of printed journals, the subscriber pays for a copy an issue, receives it, and can store it, lend it, and read the articles for a limited period of time. In the case of e-journals subscribers are paying for access; after their subscription expires, their access to the original articles is lost unless they print copies of articles or download and archive them. Libraries maybe precluded from printing and/or archiving articles from pure e-journals by their license agreements. Rather, they may simply facilitate access to these journals for their patrons by linking to their Web

sites or offering Internet Service, such as Catchword (<http://www.catchword.com/>).

Various licensing configurations and pricing schemes are available; publishers may allow access to e-journals only through a limited number of computers, or limit the number of library patrons simultaneously accessing the site. Each arrangement may be priced differently. In addition, publishers of P-e-journals may offer the electronic version only to those who subscribe to the printed version, offer a special price or combined price for both versions, or price each of them separately.

Publishers may also apply different pricing policies to different groups of subscribers, such as individuals and libraries. In addition, scholarly societies usually sell journal subscriptions at lower prices to their members and to students.

#### **1.7.4 Access and Searching Capabilities**

Readers' easy access to articles is perceived to be one of the major advantages of e-journals (Okerson, 1991); (Tomney & Burton, 1998). Today many scholars in first world countries work in university offices where high-speed Internet connections enable the rapid transmission of networked e-journals. Others may have more difficulty accessing the same e-journals. In addition, some e-journals are site-licensed to universities and authenticate legitimate readers by their IP addresses. Thus, complex socio-technical contingencies can limit a reader's legitimate access to e-journals, even though she or he has Internet access.

Existing database of articles (print or electronic) allow users to search authors, titles, abstracts, and sometimes, full text. However, the relevance of retrieved results depends on three things: the search engine, database construction, and search strategy employed. Various databases provide different search mechanisms (e.g. simple search, advanced search, or search with thesaurus extension). Most journals and publishers implement much simpler e-searching (by keyword) than do aggregators, such as Dialog, LexisNexis and Academic Search Elite (Smith, 2000). Researchers must use appropriate search strategies. Because searching mechanisms vary from journal to journal, this necessitates some learning time on the part of readers.

#### **1.7.5 Citations to E-Journals**

One more advantage of e-journal over p-journals is their ability to include active hyperlinks to bibliographic citations. This function is not yet routine, however, because the Web environment is somewhat unstable and the location of files can be changed over time. In addition, pure e-journals, as well as the electronic editions of printed journals, may disappear. For example, out of 35 publicly accessible pure e-journal,

(Harter, 1998) studied, five did not appear in the locations provided in his article in the summer of 2001. Another study (Zhang, 1998) found those authors who publish in pure e-journals are more willing to cite articles from other pure e-journals than are the authors who publish in pure p-journals. Although links to other articles in other journals are common, over time many links will become outdated, and the journal providers face the choice of maintaining accurate links allowing their articles' bibliographies to be contaminated with link rot.

The publication of p-e-journals and e-p-journals raises a question about which version of an article should be cited. One definite advantage of e-journal over pure p-journals is that the ability to download citations into citation management programs, such as EndNote or Procite.

### 1.7.6 Interactivity

One form of interactivity between authors and readers is to allow readers to comment on articles that appear in a journal. P-journals vary in the extent to which they include "letters to the editor". Traditional p-journals may print comments about an article in the next issue. In pure e-journals and e-p-journals, comments can be submitted and posted more rapidly after the article is published and attached directly to the online version of the article. Although journals vary in their practices for publishing readers' comments.

### 1.7.7 Archiving and Cataloging

Printed journals are usually retained in libraries and in private collections even after the journals cease publication or subscriptions expire. A fear persists that pure e-journals may cease and that previously published and cited articles will no longer be available. Publishers of e-p-journals try to overcome this fear by printing a limited version of the journal for libraries so that the articles are always available in print.

Other complexities are associated with managing and reading e-journals, such as the possibility that they can be stored in multiple locations. Mirroring a journal's Web site speeds access from different corners of the world, but also increases costs, as it requires the maintenance of separate servers and access software.

Libraries have to tackle the issue of cataloging e-journals and deciding the kinds of access to pure e-journals to include in their online catalogs. The p-e-journals are even more complicated because libraries' policies vary, with some cataloging each version separately and some cataloging them together. (Wilkins, 1997) surveyed British libraries and learning centres about their practices for cataloging p-e-journals. Most of the libraries surveyed cataloged one entry per title. In addition, Wilkins' respondents preferred to provide the 'real' URL, for each journal title,



rather than providing a link to the p-e-journal publisher's Web site. Dual journal versions created additional difficulties because librarians wanted to add information about access to electronic copies on each printed journal's record.

### 1.8 Possibility of Direct Plagiarism

E-journals are considered easy targets for plagiarism, as they enable the direct copying and pasting of sections of one document into another. At the same time, current technology also allows easier copying from printed journals, through the use of scanners and character recognition software.

The electronic technologies that simplify plagiarism also may make it easier to detect the practice. Initiatives are already in place to use specialized software for detecting copies and very similar documents in digital libraries.

### 1.9 Are E-journals "Respectable"?

At the International Conference on Refereed Electronic Journals, held at the University of Manitoba in October, 1993, the lack of scholarly respect for e-journals was directly addressed. Guessner summarized what went on in that conference saying: in part the conference was an attempt to make academic merit the sole consideration in the publication of journal-type research, and it sought to advance the idea that the academic community should have a hand in determining what gets published and how it is disseminated; and it resolved to provide an outlet for research publication that is not subject to the severe economic constraints of traditional print-journal publishing. The conference further attempted to outline ways in which the advantages of electronic publication (savings in production costs, speed-up in publication and dissemination) might be highlighted in the minds of academics, hopefully resulting in universities taking on a greater role themselves as disseminators of research information, and not just as producers and consumers. These points underscore the concern with which elements of the academic community view the inferior status conferred on e-journals and recognize that the only practical future for the scholarly journal may be in electronic form.

### 1.10 Conclusion

Electronic journals, and to a much lesser extent the electronic editions of print journals, offer much to both the author and reader. The author benefits from the ability to publish much more quickly, to not be limited by the constraints of the number of print pages the publisher has budgeted for that year, to use color to emphasize certain aspects of a structure, chemical reaction, apparatus, or instrument. Authors can include computer readable copies of their computer programs so that readers can actually

use the program on their own data. Authors can include data, full spectra, and other experimental information to make their presentations and arguments even stronger.

In this paper, I tried to present an overview of electronic journal publishing: kinds of e-journals, formats, some issues, like cost, pricing, access, interactivity, archiving, etc.

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## الدوريات الالكترونية

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