Modeling the Establishment of an Electronic Journal in Textiles & Apparel

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ABSTRACT

The first issue of the electronic Journal of Textile and Apparel Technology and Management (http://www.tx.ncsu.edu/jtatm) was launched in October 2000. Critical to the success of this electronic journal was the establishment of an infrastructure including technology and management components – both are necessary for a successful e-journal. Rogers' Model of the Innovation-Decision process (1995) was used as the conceptual framework, as this e-journal is considered an informative innovation in the textile and apparel industry. The study documented the process of establishing the electronic journal and the importance of a feedback loop to provide inputs for future journals.

KEYWORDS: electronic journal, JTATM, electronic dissemination, e-commerce, e-journal, traditional publishing, electronic publishing, launching journal

Introduction

With the advent of the World Wide Web (WWW), dissemination of information is faster. WWW is presently comprised of tens of millions of files, documents and other pages that are linked to one another via their hypertext, ftp and gopher URL's (Harter & Ford, 2000). Internet access grew to 304 million in 2000, an increase from 171 million in 1999 (Daley, 2000). Research journals are compilations of research articles and these research articles serve as a foundation for the advancement of science and technology. Digital communication allows global access to information but access sources are predominantly in North American and European countries (WIPO, 2001).

With the advent of electronic journals, information is disseminated through electronic media instead of (or in addition to) paper publication. Since 1992, the number of electronic journals has grown significantly from approximately 21 journals in 1991 to 2459 in 1997 (McEldowney, 1997). Some electronic journals (e-journals) are new journals while others are electronic versions of traditional print journals. Elsevier, based in Europe and the largest publisher of scholarly journals in the world, has made most of its offerings available electronically. An electronic journal provides significant advantages to traditional (print) journals. These advantages include cost-effectiveness, faster distribution, easily accessible, online search, and capabilities to publish data, programs, animations and

multimedia components that no print journal can publish (Moret, 1997).

In the discipline of textiles and apparel, a limited number of electronic journals exist. Predominantly these are electronic trade journals, such as [Bobbin](), [HomeTextilesToday](), and [The Asian Textile Journal](). An opportunity existed to establish an electronic journal in the field to provide timely information to industry personnel, academicians, and students. The NCSU Department of Textile and Apparel, Technology and Management (TATM) began the planning for an electronic journal in Summer 2000 and the first issue of the Journal of Textile and Apparel Technology and Management (JTATM) was launched October 2000. The documented process for this e-journal establishment can be replicated by other organizations interested in establishing electronic journals, as well as provide a framework for enhancing readership and readability of the Journal.

Background of the Problem

The purpose of this research is to model the establishment of an electronic journal for textiles and apparel. Specific research objectives include:

1. Document the process of the e-journal, including:
- Management and Technical components, and
- Process for launching a journal and the interrelationships between components necessary to launch each issue.
2. Establish the feedback loop to aid in continual improvement of the Journal.

Review of Literature

History of Electronic Journal

Electronic journals first began to appear as electronic products on the web in 1995, with Project Muse from the John Hopkins University Press and the journals offered by OCLC's Electronic Collections Online (ECO), formerly called Electronic Journals Online. By 1990, e-journals were assured a good future (Okerson, 1993). The first electronic journals, developed in the 1980's, were e-mailed to subscribers or made available through FTP in strict plain-text format (Curtis, Scheschy, & Tarango, 2000). The CD-ROM format was also used for distribution. After traditional publishing, CD-ROM became the next mode of disseminating information. However, the CD-ROM soon became obsolete as electronic publishing emerged.

At this time, the community of Internet users was small, and specialized journals did not have many readers. The first pre-web electronic journal with a graphical user interface (GUI) was the Online Journal of Current Clinical Trials (University of Manitoba, 1994). The OCLC developed the proprietary GUI, called Guidon, expressly for the purpose of presenting this prototype electronic journal. It served as a model for some of the later web-based electronic-only journals.

Traditional vs Electronic Publishing

The paper-publishing model does not require advanced technology, as most of the process is done manually. Composing body text, merging art and text, typesetting, proofreading and developing negatives are done manually. The process needs skill that can be obtained by training in the publishing field. When compared to the modern computer links achieved by hypertext formats, new technological advancements were not needed at that time.

Traditional Publishing

For many years the process of publishing traditional (print) journals required much time. The traditional (print) process consists of the following steps.

Step I: Manuscript submission - The author drafts a preliminary version with early results and obtains an information

review by close colleagues. This phase ends with the submission of manuscript to an editor for review of the article.

Step II: Manuscript review - The editor commissions review from several experts ("referees") and based on their advice, either accepts, rejects or requests revisions from the author. Once the editor accepts the paper, Step III occurs.

Step III: Publication processing - The editor sends the publication of the article through the copyediting, layout, and printing. This phase ends with the actual publication of the article in a journal. Steps II and III may take 6-18 months each, or a total time from submission to publication of 12-36 months.

Step IV: Archiving and indexing - Societies and libraries preserve back issues and catalog papers. Abstracting services summarize recent papers; citation services accumulate citation indices. The fourth phase is ongoing (Denning & Rous, 1995).

Cost of traditional publishing: An average institutional price of a scholarly journal subscription has increased from $39 in 1975 to $284 in 1995, a factor of 7.3 in twenty years. It was concluded that: It is clear that traditional scholarly publishing is in serious economic difficulty (Bot & Roes, 1998).

Electronic Publishing

A large amount of work has been eliminated or reduced using the electronic format. Reductions include the cost of publishing and the time of publishing, updating the electronic version is far simpler than traditional publishing.

The steps in electronic publishing process are as follows:

Step I: Manuscript submission - The author drafts a preliminary version with early results and obtains an information review by close colleagues. This phase ends with the submission of manuscript to an editor for review of the article.

Step II: Manuscript review - The editor commissions review from several

experts ("referees") and based on their advice, either accepts, rejects or requests revisions from the author. The article is submitted by e-mail to the journal.

Step III: Database preparation - Since the author has submitted the (revised) article by e-mail/ FTP, the time for publication is reduced to 1-2 days. The database is a crucial element of the electronic information dissemination system. Preparation includes the maintenance of effective search and retrieval tools.

Step IV: Production and archiving - The final step in the delivery system is the provision of the information in a format suitable to the delivery medium and the user's needs. The articles are then archived according to the copyright policy The total time from submission to publication is 1-4 months for electronic publishing (Boyce & Dalterio, 1996).

Cost comparison of traditional and electronic publishing: The costs of producing and distributing an e-journal can be 28 to 45 percent lower than that of its paper-based counterpart (Jog, 1995).[1] The economic advantage of converting a paper-based journal to an e-journal is contingent on several assumptions. First, the potential revenue impact would depend on the support provided to the journal by the sponsoring association (if one exists). Second, the culture of the member group that would affect their monetary support, the mix of members and non-members in subscribers and, third the dependence of the journal on institutional subscriptions (Jog, 1995).

Statistics in E-journals

The number of e-journals (which includes titles classified as "e-zines," or magazines) make up 72% of the total of 2,459 listings, while e-newsletters account

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[1] The estimated cost for 1 year of JTATM, with the launch of 5 issues (Volume 1, 1-4 and Special Issue), is $30,000. Costs included graduate student funding and overhead (computer, software, use of server).

for 955 entries (McEldowney, 1997). The lists section (electronic conferences, including discussion lists, news groups, interactive web chat groups) also grew, from 3,118 entries last year to 3,808 this year, a 22% increase.

McEldowney (1997) collected the growth of electronic journals from the *ARL Directory of Electronic Journals, Newsletters and Academic Discussion Lists* from 1991 through 1995 (Table 1). Mogge (1999); (Figure 1) found that technical and computer-science titles make up the largest share of e-journals (40 percent) with social science comprising 28 percent.

Establishment and Implementation

Limited research exists related to establishment and implementation of e-journals. In general, management and technical components are needed.

Management Issues

The issues that are discussed related to management process are copyright, pricing, and social challenges.

Copyright: Plagiarism in the digital age is faster, cheaper, and better than copying in the days of analog. The tools for illicit copying are more widely distributed. The question of ownership of material posted on the Internet is becoming more and more important. Authors who want to grant permission for free redistribution should add clear statements of intent to the documents (Boyce & Dalterio, 1996). Many scientists are not aware that posting a document on the Internet, where it becomes available to everyone, is equivalent to publication of the document. Posting someone else's document without expressed permission violates the author's copyright.

Table 1: Growth of Scholarly Electronic Journals and Communication

	July 1991	Mar 1992	Apr 1993	May 1994	May 1995	May 1996	Dec 1997
Journals & Newsletters	110	133	240	443	675	1689	3414
Listservs & Discussions	517	769	1152	1784	2480	3118	3807
Total	627	902	1392	2227	3155	4807	7221

Source: McEldowney, P. (1997). *Scholarly electronic journals – Trends and academic attitudes: A research proposal.* Retrieved on January 27, 2002, from
http://www.people.virginia.edu/~pm9k/libsci/ejs.html
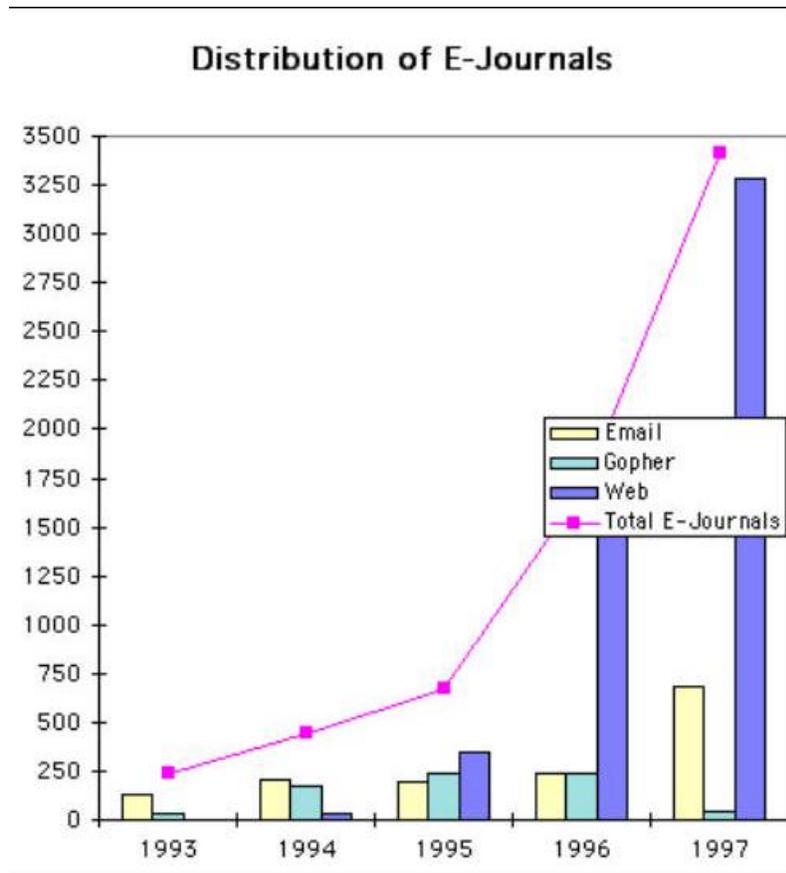
Figure 1: Growth of Electronic Journal

Source: Mogge, D. (1999). *Seven Years of Tracking Electronic Publishing: The ARL directory of electronic journals, newsletters and academic discussion lists*. Retrieved January 27, 2002, from http://dsej.arl.org/dsej/2000/mogge.html

Pricing: Publishers are exploring a wide variety of pricing models. Differential pricing is suitable when an institution's needs are larger resulting in higher costs for the publication. Harnad (2001) has suggested that charging authors (or their institutions) a 'page fee' when their paper is accepted for publication, as a cost-effective way of disseminating information. Another study has found that the better accessibility of online journals increased the number of subscriptions. Some publishers charge an additional cost beyond that of the paper-version subscriptions for online access (Hearst, 1998).

Social Challenge: The success of an electronic academic journal will depend on the extent to which members of a disciplinary community take part in the routing discourse processes through which knowledge is distributed. Scholars who initiate electronic journals face the normal sociological challenges of orienting the disciplinary community to a new medium for communication. Another challenge may be in creating an entirely new online disciplinary community (Harrison & Stephan, 1995).

Creating a credible channel for the dissemination of knowledge with no perceived difference in quality is a formidable challenge for journal management/editors. The new e-journal may incur higher marketing costs in order to convey to the academic community of its

quality, the rigor of its review process and relevance (Jog, 1995).

Technical Issues

The technical part of the electronic journal deals with issues like security, storage, navigation and search ability, electronic page layout, technology and networking.

Security: The two most common methods of providing security are issuing a password to subscribers (easy for individuals, but difficult for organizations) or using domain restrictions on the Internet (allows the users coming form a specified institutional Internet domain). In addition to IP filtering and server-based passwording models, many libraries and consortia are looking for additional options such as the ability for a web-based script to query a patron file in a library circulation system or campus registration system, which would then allow authorized users access (Machovec, 1997).

Storage: The OCLC Electronic Collections Online has made a commitment to provide perpetual archiving for the titles offered. If they are not able to archive, OCLC has made arrangements with publishing partners to offer the archive to participating libraries in a format acceptable at that time (Machovec, 1997).

Harnad (2001b) suggests that researchers should self-archive all present, future and past papers. Universities should install e-print archives and mandate them; libraries should maintain the university e-print archives.

Navigation & Searchability: Navigation and search are two of the most important functions that an online publication has to offer. At this time, both features remain fairly primitive in most settings and are of limited value until the volume of publications grows significantly.

Electronic Page Layout: Most of the electronic journals are published using Portable Document Format (PDF) and the rest using Hypertext Markup Language (HTML). Appropriate plug-ins have to be

provided if any additional download is needed. The HTML format offers more options for linking, searching and supplementing the text, but is generally more labor-intensive to produce and proper security is not available. Standard General Markup Language (SGML) and Extensible Markup Language (XML) are even more powerful, but require technical expertise not widely available yet.

Networking: Critics of the academic networking have been concerned with dividing the disciplinary community into 'haves' and 'have nots' based upon members' access to the network and the hardware and software required for using it (Harrison & Stephen, 1995). But, as the costs of technology continue to decline and networking diffuses throughout various industries, information is discoursed more than has been possible through traditional communication media. Electronic journals can be complemented by other means for communication available on the network. Some are dedicated listserv discussions and the various virtual reality environments that are becoming available (eg. Mud Object Oriented (MOO) and Multi-user Dungeon (MUD)) as the opportunity for international participation increases (Harrison & Stephen, 1995).

Accessibility: With the advent of the World Wide Web, a dramatic change in the publication and communication is inevitable. The functions of the various players have shifted – for instance, authors started distributing their own literature via the web (Wellman, 1998).

In Textiles and Apparel

The Internet in the field of textiles and apparel has grown in a rudimentary fashion. To date, limited electronic journals exist in this field. Examples of existing journals include Bobbin, HomeTextilesToday, and The Asian Textile Journal. Most of these journals are complimentary and/or require registration with the website. Although the e-commerce

B2B marketplace is developing in the field of textiles, the revolution is not complete.

Directories offer a variety of textile and apparel information: buying and selling, job services, newsgroups, and discussion forums. Examples of directories include Apparel.net and Apparel Exchange.

Methodology

Research Design

The case study method was used for this study and includes the documentation of the process to establish an electronic journal and a descriptive analysis of the feedback loop.

Data Collection and Analysis

Data collection and analysis for documenting the technical and management components were based on the continued discussions with the JTATM Managing Editor and Technical Editor. Discussions with NCSU librarians and the NCSU College of Textiles Webmaster, also assisted in refining the process. The feedback loop was established using the results from the documented process.

Results

For a successful launch of an e-journal, the technical and management components were identified. Both components are needed for a smooth launch of the journal. Figure 2 identifies the management and technical components of the electronic journal.

Management Process

The management process consists of the editorial process and managing/ marketing.

Editorial Process

Articles are selected based on relevant content and timeliness of theoretical and empirical research in the field of textiles and apparel, technology and management. The submitted articles are reviewed first by the JTATM Managing Editor for appropriateness (content, format). Articles (scholarly, refereed) are reviewed by the Managing Editorial Board, the International Editorial Board, and a member of the Panel of Reviewers. The JTATM Managing Editor corresponds the decision (accept, revision, reject) with the author.

Managing/Marketing

Marketing of the journal and each launch is conducted with an electronic press release sent to two listservs (jtatmindustry, jtatmuniversity). In addition, CD's of the latest journal issue are distributed at professional conferences. The two listservs contain e-mail addresses of industry and academic personnel. These listservs are continually updated; incorrect e-mails (bounces) are unsubscribed from the listservs. An issue analyses is conducted of each JTATM issue. This analysis includes most frequent downloaded articles, most popular web pages downloaded, most active countries and most active states in United States. Comparative analyses of issues identify journal pages and articles of interest, providing inputs for journal development.

Technical Process

Production Stage

This phase of the technical component consists of developing the electronic page layout, navigational links and security. Setting electronic page layout involves creation of web pages with or without a template and links are provided for each page/article.
Steps in the electronic page layout include:

- Developing a design concept for cover page.

- Meeting with Managing Editor to discuss/ identify the design and text requirements.
- Developing supporting pages for feature article. Information is added as received from committee and authors.
- Updating the announcement page as received by management editor.

Updating remaining pages: editorial, registration, and author guidelines as needed.

Steps in the navigation include:
- Linking pages created above.
- Changing links from prior issue to go to an archive page.

Steps in article development include:

- Proofing the Word file submitted by author is reviewed for content by the managing editor.

Converting the file into two columns and into Portable Document Format.

Steps in security include:
- The PDF file adds security to the document so that the reader/visitor can take print-out only (and cannot copy-paste).
- Privacy page gives an option for Opt –out policy for updating personal information in the database and receiving future press release.

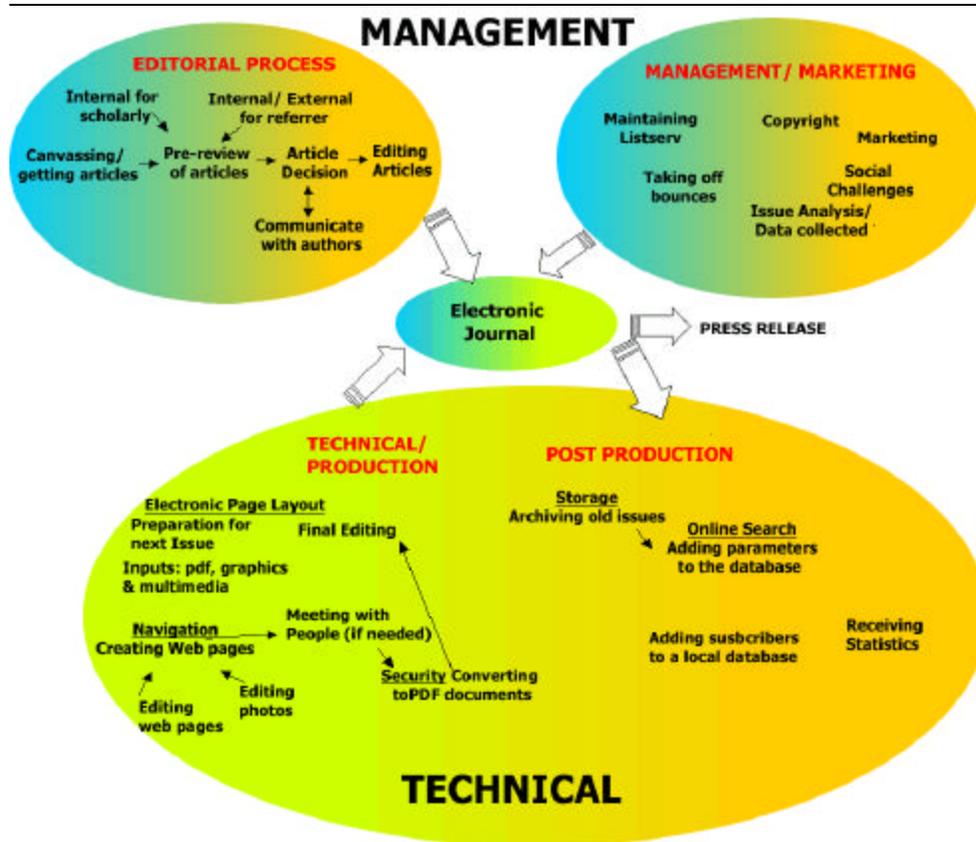The database will not be sold to third a party at any time.

Figure 2: Management and Technical Components

Post-Production

- Corrections are made based on the feedback from viewers.
- Archiving old issues become an important step in the growth of the journal. A searchable database is being created. The database is updated with keywords for the 'search page'. Adding keywords, title of the paper and authors name to the database is done periodically.
- JTATM receives the web metrics on a weekly basis from SiteStats and recently from the College of Textiles webserver. The data is analyzed with the help of graphs and a report is prepared for each issue. Based on these data, modifications are done to the e-journal.

Establishing the feedback loop

The feedback loop is important to improve the readership and readability of journal. Figure 3 illustrates the inclusion of the feedback loop. There are three types of responses: positive (a) feedback includes request for subscription, negative (b) feedback includes request for un-subscription and request for add/delete (c). Usually the feedback from the target audience will be of type (c) and (a). Positive/ negative feedback (a/b) is being established in the loop. Discussions between the management and technical components fall into a/b type of feedback, which occurs throughout the year.
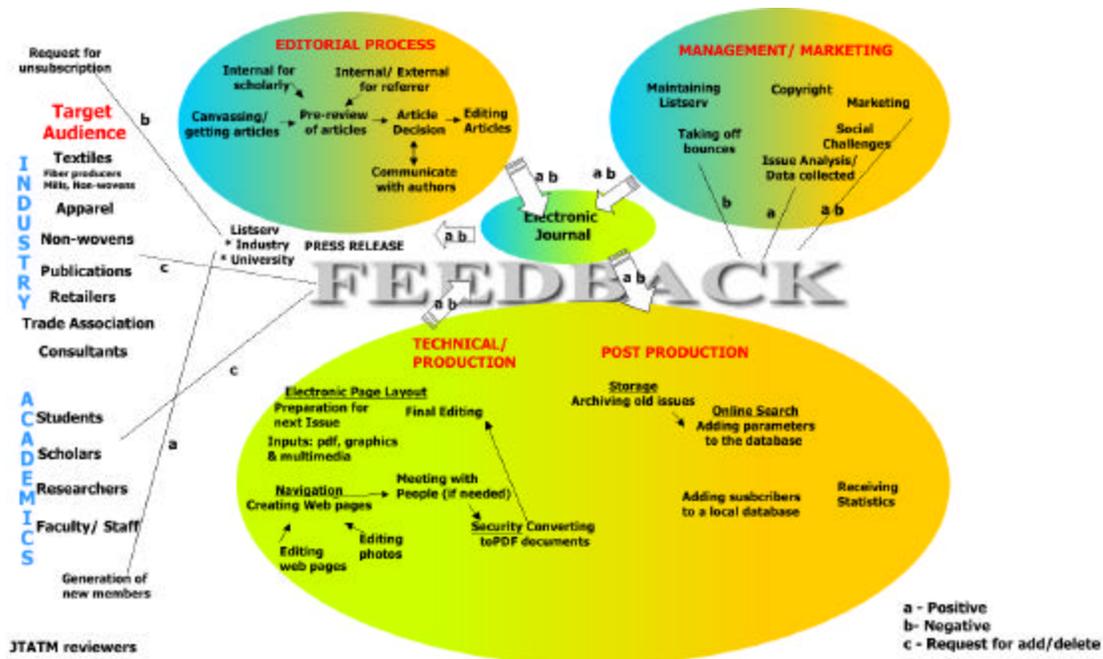
Figure 3: Feedback Loop of JTATM

Conclusions

The electronic journal, Journal of Textile and Apparel Technology and Management, is an innovation in the textile and apparel field. The electronic media is an efficient (time, cost) media to disseminate information to industry and academic personnel. The study documented the process (with management and technical components) of establishing an electronic journal. Both components are necessary for the establishment and successful launch of an electronic journal and there is considerable interaction between both components. The feedback loop, incorporating management and technical components, will provide significant direction in the continued improvement of the journal.

The diffusion of Internet into the society has helped in the success of the electronic dissemination of research material. Rogers' Model of Innovation-Decision Process (1995) is an effective framework to explore electronic journals in textile and apparel.

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