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ABSTRACT

Scientific journal publishers have very little commercial experience with electronic full text distribution and it is difficult to segregate the effect of pricing on user acceptance and behavior. This paper examines some of the known experiences and ongoing and proposed experiments to get a sense of the interaction of pricing and user acceptance and of the other factors, which seem to affect user behavior. It also looks at institutional buying concerns and pricing considerations. The paper concludes that a price that is perceived as fair is a necessary but not sufficient factor in gaining users of electronic journals. If a Web site or other electronic offering does not offer more (job leads, competitive information, early reporting of research results, discussion forums, simple convenience of bringing key journals to the desktop), it will not be heavily used. In designing electronic services, publishers have to deal with issues of speed, quality control, comprehensiveness--and then price. The evaluation of acceptance by the user will be on the total package. (AEF)

Scholarly Communication and Technology

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Session #3 Economics of Electronic Publishing: Journals Pricing and User Acceptance

The Effect of Price: Early Observations

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FINAL VERSION

THE EFFECT OF PRICE: EARLY OBSERVATIONS

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INTRODUCTION

Scientific journal publishers have very little commercial experience with electronic full text distribution and it is hard, if not impossible, to segregate the effect of pricing on user acceptance

and behavior. Most experiments or trial offers have been without charge to the user. Most paid services have targeted institutional rather than individual buyers. Nevertheless, we can look at some of the known experiences and at ongoing and proposed experiments to get some sense of the interaction of pricing and acceptance and of the other factors, which seem to affect user behavior. We can also look at institutional buying concerns and pricing considerations.

IN THE BASIC PAPER WORLD...

Many journals have offered reduced prices to individuals. In the case of journals owned by societies or other organizations, there are generally further reductions in the prices for members. It is important to the society that members not only receive the lowest price but can clearly see that price as a benefit of membership. The price for members may be at marginal cost, particularly if (1) the size of the membership is large, (2) subscriptions are included as a part of the membership dues, and (3) there is advertising income to be gained from the presence of a large individual subscription base. One sees this commonly in clinical medical journals, where the presence of 15,000 or 30,000 or more individual subscribers leads to >$1 million in advertising income -- income which would be near zero without the individual subscription base. One can "afford" to sell the subscriptions at cost because of the advertising.

For many other journals, including most published by my company, there either are no individual rates or the number of individual subscribers is trivial. This is largely because the size of the journals, and therefore their prices, are sufficiently high (average $1,600) that it is difficult to set a price for individuals which would be attractive. Giving even a 50% reduction in price does not bring the journal into the price range that attracts individual purchasers.

One alternative is to offer a reduced rate for personal subscriptions to individuals affiliated with an institution which has a library subscription. This permits the individual rate to be lower, but it is still not a large source of subscriptions in paper. The price is still seen as high (*e.g.,* the journal *Gene* has an institutional price of $6,144 in 1997 and an associated personal rate of $533; the ratio is similar for *Earth and Planetary Sciences,* $2,333 for an institutional subscription, $150 for individuals affiliated with that institution.) This still draws only a very limited number of subscribers.

We have not recently (this decade) rigorously tested alternative pricing strategies for this type of paper arrangement nor talked with scientists to learn specifically why they have or have not responded to an offer. This reflects a view that there is only limited growth potential in paper distribution and that the take-up by individuals (if it is to happen) will be in an electronic world.

ALTERING SERVICES

There is some experience with free distribution, which may be relevant. Over the last decade we have developed a fairly large number of electronic and paper services designed to "alert" our readers to newly-published or soon-to-be-published information. These services take many forms, including lists of papers accepted for publication; current tables of contents; groupings of several journals in a discipline; single journal-specific alerts; inclusion of additional discipline-specific news items, etc. Some are mailed. Some are electronically broadcast. Others are electronically profiled and targeted to a specific individual's expressed interest. Finally, some

are simply on our server and "pulled" on demand.

All are popular and all are sent only to users who have specifically said they want to receive these services. The electronic services are growing rapidly, but the desire for those which are paper-based continues. One even sees "claims" for missing issues, should a copy fail to arrive in the mail. What we take from this is that there is a demand for information about our publications -- the earlier the better -- and that so long as it is free *and* perceived as valuable, it will be welcomed. Note, however, that in the one case where, together with another publisher, we tried to increase the perceived value of an alerting service by adding more titles to the discipline cluster and adding some other services, there was noticeable resistance to paying a subscription for the service.

ELECTRONIC PRICING

In developing and pricing new electronic products and services, journal publishers may consider many factors, including (in random order):

- the cost of creating and maintaining the service;
- the possible effect of this product or service on other things you sell ("cannibalization" or substitution);
- the ability to actually implement the pricing (site or user community definitions, estimates of the anticipated usage or number of users, security systems)
- provision for price changes in future years
- what competitors are doing;
- the functionality actually being offered;
- the perceived value of the content and of the functionality;
- the planned product development path (in markets, functionality, content);
- the ability of the market to pay for the product or service;
- the values that the market will find attractive (e.g., price predictability or stability);
- the anticipated market penetration and growth in sales over time;
- the market behavior that you want to encourage;
- and, not inconsequentially, the effect on your total business if you fail with this product or service.

To make informed judgments, one has to build up experience and expertise. Pricing has long been an important strategic variable in the marketing mix for more mature electronic

information players. They have more knowledge of how a market will react to new pricing models. For example, more than five years ago, one would see at an Information Industry Association meeting staff from business, financial and legal online services with titles such as Vice President, Pricing. Nothing comparable existed within the journal publishing industry. A price was set, take it or leave it, and there was little room for nuance or negotiation.

This is now changing. Many large journal publishers are actively involved in either negotiating pricing agreements or, under fixed terms, negotiating other aspects of the licensed arrangement which relate to the effective price being paid (such as number of users, number of simultaneous accesses, etc.) At Elsevier in 1996, we engaged consultants to make a rigorous study to assist us in developing pricing models for electronic subscriptions and other electronic services. What we found was that we could not construct algorithms to predict buying behavior in relation to price. That has not stopped us from trying to pursue more sophistication in pricing -- and indeed, we have now hired our own first full-time Director of Pricing -- but until we build up more experience, it still makes pricing decisions often a combination of tradition, strategic principle, gut-feeling and trial and error. There is, however, a view on the desired long-term position and how we want to get there.

Too often, some buyers argue that pricing should be based solely on cost (and often without understanding what goes into the cost). Therefore, there is a sometimes expressed a simplistic view that electronic journals are paper journals without the paper and postage and should be priced at a discount. That clearly is naive, overlooking all of the new, additional costs which go into creating innovative electronic products (as well as maintaining two product lines simultaneously). Indeed, if one were to price right now on simply the basis of cost, the price for electronic products would likely be prohibitively high.

It is equally doubtful if one can accurately determine the value added from electronic functionality and set prices based *exclusively* on the value, with the notion that as more functionality is added, the value -- therefore, the price -- can be automatically increased. Some value-based pricing is to be expected and is justified, but in this new electronic market there are also limited budgets and highly competitive forces, which keep prices in check. At the same time, it is not likely that the "content" side of the information industry will totally follow the PC hardware side -- i.e., that the prices will stay essentially flat, with more and more new goodies bundled in the product. Hardware is much more of a competitive commodity business.

Pricing components are now much more visible and subject to negotiation. In discussions with large accounts, it is assumed that there will be such negotiation. This is not necessarily a positive development for either publishers or libraries. One hopes that collectively we won't wind up making the purchase of electronic journals the painful equivalent of buying a car. ("How about some rust proofing and an extended warranty?")

There is and will continue to be active market feedback and participation on pricing. The most obvious is a refusal to buy, either because the price is too high, the price-value trade-off is not there, or because of other terms and conditions associated with the deal. Other feedback will come via negotiation and public market debates. Over time, electronic journal pricing will begin to settle into well-understood patterns and principles. At the moment, however, there are almost as many definitions and models as there are publishers and intermediaries. One need only note the recent discussions on the e-list on library licensing moderated by Ann Okerson of Yale University to understand that we are all in the early stages of these processes. An early 1997 posting gave a rather lengthy list of pricing permutations.

END USER PURCHASING

If one talks of pricing and "user acceptance", an immediate question is: who is the user? Is it the end user or is it the person paying the bill, if they are not one and the same? One presumes the intention was to reflect the judgments made by end users when those end users are also the ones bearing the economic consequences of their decisions. In academic information purchasing (as with consumer purchasing), the end user has traditionally been shielded from the full cost (often any cost) of information. Just as newspapers and magazine costs are heavily subsidized by advertising, and radio and television revenues (excluding cable) are totally paid by advertisers, so do academic journal users benefit from the library as the purchasing agent.

In connection with the design of its new Web journal database and host service, *ScienceDirect™*, Elsevier Science in 1996 held a number of focus groups with scientists in the U.S. and the UK. Among the questions asked was the amount of money currently spent personally (including from grant funds) annually on the acquisition of information resources. The number was consistently below $500 and was generally between $250 and $400, often including society dues, which provided journal subscriptions as part of the dues. There was almost no willingness to spend more money, and there was a consistent expectation that the library would continue to be the provider of services, including new electronic services.

This is consistent with the results of several years of direct sales of documents through the (now) Knight-Ridder CARL UnCover service. When it introduced its service a few years ago, UnCover had expected to have about 50% of the orders coming directly from individuals, billed to their credit cards. In fact, as reported by Martha Whitaker of CARL during the 1997 annual meeting of the Association of American Publishers, Professional/Scholarly Publishing Division in February, the number has stayed at about 20% (of a modestly growing total business).

From their side, libraries are concerned that the user has little or no appreciation of the cost to the library of fulfilling their users' requests. In two private discussions in February of 1997, academic librarians told me of their frustration when interlibrary loan requests are made, the articles procured and the requesters notified, but then the articles are not picked up. There is a sense that this service is "free", even though it is well-documented (via a Mellon study) that the cost is now more than $30 per ILL transaction.

In this context, discussions with some academic librarians about the introduction of electronic journal services have not always brought the expected reactions. It had been our starting premise that electronic journals should mimic paper journals in certain ways, most notably that once you have paid the subscription, then you have unlimited use within the authorized user community. However, one large library consortium negotiator has taken the position that he is not so sure that is desirable, as it would be better to start educating users that information has a cost attached to it.

Similarly, other librarians have expressed concern about online facilities which permit users to acquire individual articles on a transactional basis from non-subscribed titles (*e.g.*, in a service such as *ScienceDirect(TM)*). While the facilities may be in place to bill the end user directly, the librarians believe the users will not be willing to pay the likely prices ($15-25). Yet, if the library is billed for everything, either the cost will run up quickly or any prepaid quota of articles will be used equally rapidly. The notion that was suggested was to find some way to make a nominal

personal charge of perhaps $1 or $2 or $3 per transaction. It was the librarians' belief that such a charge would be enough to make the user stop and think before ordering something that would result in a much larger ultimate charge to the library.

The concern that demand could swamp the system if unregulated is one that would be interesting to test on a large scale. While there have been some experiments which I will describe further below, we have not yet had sufficient experience to generalize. Journal users are, presumably, different from America Online customers, who so infamously swamped the network in December 1996 when pricing was changed from time-based to unlimited use for $19.95 per month. Students, faculty and other researchers read journals for professional business purposes and generally try to read as little as possible -- *i.e.*, to be efficient in combing and reviewing the literature and not to read more and more without restraint. The job of a good electronic system is to increase that efficiency by providing tools to sift the relevant from the rest.

It is interesting to note that in a paper environment, the self-described "king of cancellations," Chuck Hamaker of Louisiana State University, reported during the 1997 mid-winter ALA meeting that he had canceled $738,885 worth of subscriptions between 1986 and 1996 and substituted free, library-sanctioned, commercial document delivery services. The cost to the library has been a fraction of what the subscription cost would have been. He now has about 900 faculty and students who have profiles with the document deliverer (UnCover) and who order directly, on an unmediated basis, with the library getting the bill. He would like to see that number increase (as there are 5000 faculty and students who would qualify). It will be interesting to see if the same pattern will occur if the article is physically available on the screen and the charge is incurred as a result of downloading. Will the decision to print be greater (because it is immediate and easy) than to order from a document delivery service?

This highlights one of the issues surrounding transactional selling: how much information is enough to have before ordering in order to insure that the article being ordered will be useful? Within the *ScienceDirect(TM)* environment we hope to answer this by creating services specifically for individual purchase which offer the user an article snapshot or summary (SummaryPlus^{SM}), which includes much more than the usual information about the article (*e.g.*, it includes all tables and graphs and all references). From the summary the user can make a much more informed decision about whether to purchase the full article.

TULIP (THE UNIVERSITY LICENSING PROGRAM)

Elsevier Science has been working toward the electronic delivery of its journals for nearly two decades. Its early discussions with other publishers about what became ADONIS started in 1979. Throughout the 1990s there have been a number of large and small programs, some experimental, some commercial. Each has given us some knowledge of user behavior in response to price, although in some cases the "user" is the institution rather than the end user. The largest experimental program was TULIP.

TULIP was a five year experimental program (1991-1995) in which Elsevier partnered with nine leading U.S. universities (including all of the universities within the University of California system) to test desktop delivery of electronic journals. The core of the experiment was the delivery of initially 43, later an additional optional 40, journals in materials science. The files were bitmapped (TIFF) format, with searchable ASCII headers and unedited, OCR-generated

ASCII full text. The universities received the files and mounted them locally, using a variety of hardware and software configurations. The notion was to integrate or otherwise present the journals consistently with the way other information was offered on campus networks. No two institutions used the same approach and the extensive learning gained has been summarized in a final report (available on request).

For the purposes of this paper, there are only a few relevant observations. First, the libraries (through whom the experiment was generally managed) generally chose a conservative approach in a number of discretionary areas. For example, while there was a document delivery option for titles not subscribed to (for each library received the electronic counterparts of their paper subscriptions), no one opted to do this. Similarly, the full electronic versions of non-subscribed titles were offered at a highly discounted rate (30% of list) but essentially found no takers. The most frequently expressed view was that a decision had been made at some time not to subscribe to the title, so its availability even at a reduced rate was not a good purchasing decision.

Second, one of the initial goals of this experiment was to explore economic issues. While the other goals (technology testing and evaluating user behavior) were well-explored, the economic side was less developed. That was perhaps a failure in the initial expectations and in the experimental design. From our side as publisher, we were anxious to try out different distribution models on campus, including models where there would be at least some charge for access. However, this was never set as a requirement, nor were individual institutions assigned to different economic tests. And, in the end, all opted to make no charges for access. This was entirely understandable, both because of the local campus cultures and the other issues to be dealt with in simply getting the service up and running, promoting it to users, etc. However, it did mean that we never gathered any data in this area.

From the universities' side, there was a hope that there would be more progress toward developing new subscription models. We did have a number of serious discussions, but again not as much was achieved as might have been hoped for if the notion was a radical change in the paradigm. I think everyone is now more experienced and realizes that these things are complex and take time.

Finally, the other relevant finding from the TULIP experiment is that use was very heavily related to the (lack of) perceived critical mass. Offering journals to the desktop is only valuable if it is the right journals and they are supplied on a timely basis. Timeliness was compromised because the electronic files were produced after the paper -- a necessity at the time but not how we (or other publishers) are currently proceeding. Critical mass was also compromised because, although there was a great deal of material delivered (11 GB per year), materials science is a very broad discipline and the number of journals relevant for any one researcher was still limited. If the set included "the" journal or one of the key journals a researcher (or more likely, graduate student) needed, use was high. Otherwise, there was not enough to remind users to return regularly to the system. And this is when there was no charge for use.

ELSEVIER SCIENCE EXPERIENCES WITH COMMERCIAL ELECTRONIC JOURNALS

- *Elsevier Electronic Subscriptions*

The single largest Elsevier program of commercial electronic delivery is the Elsevier Electronic Subscriptions (EES) program. This is the commercial extension of the TULIP program to all 1,100 Elsevier primary and review journals. The licensing negotiations are exclusively with institutions, which receive the journal files and mount them on their local network. The license gives the library unlimited use of the files within their authorized user community. As far as we are aware, academic libraries are not charging their patrons for their use of the files, so there is no data relating user acceptance to price. At least one corporate library charges use back to departments, but this is consistent with its practice for all of its services and has not affected use as far as is known.

If you broaden "user" to include the paying institution, as discussed above, then there is clearly a relation between pricing and "user" acceptance. If we can't reach an agreement on price in license negotiations, there is no deal. And it is a negotiation. The desire from the libraries is often for price predictability over a multi-year period. Because prices are subject to both annual price increases and the fluctuation of the dollar, there can be dramatic changes from year to year. For many institutions, the deal is much more "acceptable" if these increases are fixed in advance.

The absolute price is also, of course, an issue. There is little money available and pricing of electronic products at a high price will result in a reluctant end to discussions. Discussions are both easier and more complicated with consortia. It is easier to make the deal a winning situation for the members of the consortium (with virtually all members getting access to some titles which they had previously not had), but it is more complicated because of the number of parties who have to sign off on the transaction.

Finally, for a product such as EES, the total cost to the subscribing institution goes beyond what is paid to Elsevier as publisher. There is the cost of the hardware and software to store and run the system locally, the staff needed to update and maintain the system, local marketing and training time, etc. It is part of the sales process on the Elsevier side to explain these costs to the subscribing institution, as it is not in our interest or theirs underestimate the necessary effort, only to have it become clear during implementation. To date, our library customers have appreciated that approach.

- *Immunology Today Online (ITO)*

Immunology Today is one of the world's leading review journals, with an ISI impact factor of over 24. It is a monthly magazine-like title, with a wide individual and institutional subscription base. (The Elsevier review magazines are the exception to the rule in having significant individual subscriptions.) In 1994 its publishing staff decided it was a good title to launch also in an electronic version. They worked with OCLC to make it a part of the OCLC Electronic Journals Online collection, initially offered via proprietary Guidon software and launched in January, 1995.

As with other journals then and now making their initial online appearance, the first period of use was without charge. A testbed developed of about 5.0% of the individual subscribers to the paper version and 3.0% of the library subscribers. In time, there was a conversion to paid subscriptions, with the price for the combined paper and electronic personal subscriptions being 125% of the paper price. (You did not have to have both paper and electronic -- but only 3 people chose to take electronic only.) At the time OCLC ended the service at the end of 1996

and we began the process of moving subscribers to a similar Web version of our own, the paid subscription level for individuals was up to about 7.0% of the individual subscribers and 0.3% of the institutional subscribers.

The poor take-up by libraries was not really a surprise. At the beginning, libraries did not know how to evaluate or offer to patrons a single electronic journal subscription, as opposed to a database of journals. (There is a steady improvement in this area, provoked in part by the journals -- notably *The Journal of Biological Chemistry* or JBC -- offered via High Wire Press.) How do you let people know it is available? How and where is it available? And is a review journal -- even a very popular review journal -- the place to start? It apparently seemed like more trouble than it was worth to many librarians.

In talking with the individual subscribers -- and those who did not subscribe -- it was clear that price was not a significant factor in their decisions. The functionality of the electronic version was the selling point. It has features which are not in the paper and is, of course, fully searchable. That means the value was in part in efficiency -- the ease with which one found that article that you recalled reading six months ago but don't remember the author or precise month or search for information on a topic newly of interest. The electronic version is a complement to the paper, not a substitute. For those who chose not to subscribe, either they were deterred by the initial OCLC software (which had its problems) and may now be lured back via our Web version or they have not yet seen a value which will add to their satisfaction with paper. But it has not been a question of price.

- *Journal of the American College of Cardiology*

This project was somewhat different. This flagship journal is owned by a major society and has been published by Elsevier Science since its beginning in the early 1980s. In 1995, in consultation with the society Elsevier developed a CD-ROM version. The electronic design -- style, interface and access tools -- is quite good. The cost of the CD-ROM is relatively low ($295 for institutions, substantially less for members) and it includes not only the journal, but also five years of JACC abstracts, the abstracts from the annual meeting and one year (6 issues) of another publication entitled *ACC Current Reviews.*

But it has sold only modestly well. Libraries, again, resist CD-ROMs for individual journals (as opposed to journal collections). And the doctors have not found it a compelling purchase. Is it price per se? Or is it the notion of paying anything more, when the paper journal comes bundled as part of the membership dues? Or is there simply no set of well-defined benefits? Clearly, the perceived value to the user is not sufficient to cause many to reach for a credit card.

- *GeneCOMBIS, Earth and Planetary Sciences Online, etc.*

I mentioned above that for some paper journals we have personal rates for individuals at subscribing institutions. This model has been extended to Web products related to those paper journals. I mentioned above the journal *Gene.* In addition to the basic journal, *Gene*, we publish an electronic section called *GeneCOMBIS (for Computing for Molecular Biology Information Service)*, which is an electronic-first publication devoted to the computing problems that arise in molecular biology. It publishes its own new papers. The papers are also published in hard copy, but the electronic version includes hypertext links to programs, datasets, genetics databases and

other software objects. *GeneCOMBIS* is sold to individuals for $75 per year, but only to those individuals whose institutions subscribe to *Gene.*

The same model is repeated with the electronic version of a leading earth sciences journal, *Earth and Planetary Sciences Letters*. The affiliated rate for the electronic version has been introduced in 1997, with a nominal list price of $90 and a 1/2 price offer for 1997 of $45. This provides online access to the journal and to extra material such as datasets for individuals affiliated with subscribing institutions.

It is too early to know whether this model will work. There certainly has been interest. In the case of *GeneCOMBIS,* ultimately its success will depend on the quality and volume of the papers it attracts. With *EPSL Online,* it will be the perceived value of the electronic version and its added information. In neither case is it expected that price will have a significant effect on subscriptions. What is more likely to happen is pressure to extend the subscriptions to individuals working outside institutions, which have the underlying paper subscriptions.

EXPERIENCES OF OTHERS

It is perhaps useful to note also some of the experiences of other publishers.

- *Red Sage experiment*

This experiment started in 1992 and ran through 1996. It was initially started by Springer-Verlag, the University of California at San Francisco and AT&T Bell Labs. Ultimately, several other publishers joined in and there were over 70 biomedical journals being delivered to the desktops of medical students and faculty at UCSF. As with TULIP, the experiment proved much harder to implement than had been originally hoped for. To the best of my knowledge, there were no user charges, so no data on the interplay of price and user acceptance. But what is notable is that there was greater critical mass of user-preferred titles among the Red Sage titles and, as a result, usage was very high. The horse will drink if brought to the right water.

- *Society CD-ROM options*

A second anecdote comes from discussions last year with a member of the staff of the American Institute of Physics. At least one of their affiliated member societies decided to offer members an option to receive their member subscriptions on CD-ROM rather than in paper, at the same price (*i.e.*, the amount allocated from their member dues). The numbers I recall are that over 1,500 members of the society took the option, finding that a more attractive alternative. One suspects that had they tried to sell the CD-ROM on top of the cost of the basic subscription, there would have been few takers. However, in this case if you ignored the initial investment to develop the CD, it saved the society money as well, as it *was* cheaper on the incremental cost basis to make and ship the CDs rather than print and mail the paper. In this case, the economics favored everyone.

- *BioMedNet*

The final observation relates to an electronic service that started last year called

BioMedNet. It is a "club" for life scientists, offering some full text journals, Medline, classified ads (the most frequently used service), marketplace features, news and other items. To date, membership is free. There are over 55,000 members and another 1000+ coming in each week. The site is totally underwritten at the moment by its investors, with an expectation of charging for membership at some later date but with the plan that principal revenues will come from advertising and a share of marketplace transactions. The observation here is that while the membership is growing steadily, usage is not yet high per registered member. There is a core of heavy users, but it is rather small (2-3%). So, again, behavior and acceptance is not a function of price but of perceived value. Is it worth my time to visit the site?

PEAK: THE NEXT EXPERIMENT

As was mentioned above, the aspect of the TULIP experiment that produced the least data was the economic evaluation. One of the TULIP partners was the University of Michigan, which is now also an Elsevier Electronic Subscription subscriber for all Elsevier journal titles. As part of our discussions with Michigan, we agreed to further controlled experimentation in pricing. Jeffrey MacKie-Mason, an Assoc iate Professor of Economics and Information, has designed the experiment at the University of Michigan. MacKie-Mason is also the Project Director for the economic aspects of the experiment.

This pricing field trial is called "Pricing Electronic Access to Knowledge" (PEAK). Michigan will create a variety of access models and administer a pricing system. The University will apply these models to other institutions, which will be serviced from Michigan acting as the host facility. Some will purchase access on a more or less standard subscription model. Others will buy a generalized or virtual subscription, which allows for prepaid access to a set of N articles, where the articles can be selected from across the database. Finally, a third group will acquire articles strictly on a transactional basis. Careful thought has, of course, gone into the relationship among the unit prices under these three schemes, the absolute level of the prices and the relationship between the pricing, concepts of value and the publishers' need for a return.

The experiment should begin in the summer of 1997 and run at least through 1998. We are all looking forward to the results of this research.

IN CONCLUSION

Journal publishers have relatively little experience with offering electronic full text to end users for a fee. Most new Web products either are free or have a free introductory period. Many are now in the process of starting to charge (*Science,* for example, instituted its first subscription fees as of January, 1997, and will only sell electronic subscriptions to paper personal subscribers). However, it is already clear that a price that is perceived as fair is a necessary but not sufficient factor in gaining users. Freely available information will not be used if it is not seen as being a productive use of time. Novelty fades quickly. If a Web site or other electronic offering does not offer more (job leads, competitive information, early reporting of research results, discussion forums, simp e convenience of bringing key journals to the desktop), it will not be heavily used. In designing electronic services, publishers have to deal with issues of speed, quality control, comprehensiveness -- and then price. The evaluation of acceptance by the user will be on the total package.

For additional information about the conference, or The Andrew W. Mellon Foundation's scholarly communication initiatives, please contact Richard Ekman. For additional information about ARL or this web site contact Patricia Brennan, ARL Program Officer at (202) 296-2296.

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