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Ken Peffers
Hong Kong University of Science and Technology, k@peffers.com

Phillip Ein-Dor
Tel Aviv University, eindor@post.tau.ac.il

Robert W. Zmud
University of Oklahoma, rzmud@ou.edu

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Communications of the Association for Information Systems

SCHOLARLY PRODUCTS IN IS: WILL ADVANCES IN ELECTRONIC MEDIA PROMOTE EVOLUTIONARY OR RADICAL CHANGE?

KEN PEFFERS
Hong Kong University of Science and Technology
K@PEFFERS.COM

DAVID AVISON
ESSEC Business School

PHILLIP EIN-DOR
Tel-Aviv University

ROBERT W. ZMUD
University of Oklahoma

ABSTRACT

This article presents four views on the impact of advances in electronic media on research outputs in information systems. The four views represent a spectrum of thought on the future of IS outputs and outlets that might be characterized as technophile, classical scholarly, revolutionary, and conservative. The article results from a panel discussion at the International Conference for Information Systems in Barcelona in December 2002. Speaker positions and question responses were revised and enhanced substantially for this article.

Keywords: IS outputs, electronic media, IS publications, scholarly products

I. INTRODUCTION

Does the academic IS research community now face major IT-enabled changes in its products and in the way that they are delivered and consumed, as did producers in so many other industries? In industry after industry IT's impact is revolutionary, resulting in collapsing prices, excess capacity, participant exit, and new uses for products and services.

So far, the basic products of IS research, the IS article and journal, look much the way they did 20 years ago and, indeed, much the way products from other disciplines looked 50 years ago. There are hints, however, of change. A number of new journals focus on niche areas and several new electronic journals now compete for author attention.

Will the next ten or twenty years see extraordinary changes in the nature of IS research media, behavior, processes, and outputs? Will the traditional full IS research paper still be relevant to its audience or will it be replaced by something that is somehow better attuned to the needs of IT-enabled readers. Will the top journals continue to produce sufficient value to attract the best research contributions? Should these institutions change and, if so, how? Will research libraries, in their role as major customers for research publication outlets, be catalysts in this change?

Here we present four very different views of the current and future needs of the IS research community for the communication of new research knowledge. Our objective is to stimulate vigorous discussion about the future of IS research products within the community of its producers with an eye toward shaping changes in these products for the benefit of the research community.

An earlier version of the material in this paper was presented at ICIS 2002 as a panel presentation [Peffers, et al 2002]. Each of four panelists spoke for up to 10 minutes to present his view. The remaining time was allotted for audience comments and questions. Questions were gathered, in writing, from the audience by facilitator, Hope Koch, and presented to the panel by session manager, Brian Dos Santos. To facilitate a lively discussion, members of the audience were invited to address questions to no more than one member of the panel or to the panel at large.

This article presents the results of the panel in an extended format. In the next section, the panel members explain their positions. In Section III we present the audience questions and responses from the panelists, including extended panelist responses that were not presented at the conference.

II. THE POSITIONS

PHILLIP EIN-DOR

Electronic communications are with us now, are the wave of the future, and are destined to replace print journals. That, however, is not a clear-cut answer to the question put to the panel. To answer the question directly, I would put it this way: the new electronic media, operating over global networks, will no doubt transform the nature of scholarly publication, but the transformation will be an evolutionary one unfolding over several decades at least.

The main reasons for the view that scholarly products will be transformed are the advantages inherent in electronic publication. The most important of these are as follows:

Format

Formatting of electronic journals is much more flexible than for the traditional kind. The restriction on page lengths becomes purely a question of the length required by the substance of the article rather than dependent on restrictions on the number of pages available in publications. Furthermore, it is possible to embed various forms of multimedia such as videos, sound, and 3D in articles, greatly enriching the presentation. The format can be further augmented by embedding on-line experiments, where relevant, in order to permit easy replication.

Economics

Production and distribution of electronic papers are much cheaper than for traditional publications. Consequently, the economic advantages of electronic publishing will lead to the demise of print journals. That, however, does not necessarily imply the demise of publishing organizations; those may adapt to charge subscriptions for electronic journals rather than for printed ones. In fact, a number of journals, such as those from ACM, Elsevier and Kluwer already offer an electronic version. However, their current mode of electronic publication is to replicate the print journal and to offer the electronic version only to those who pay for print versions.

Turnaround

Elapsed time, from submission to distribution, can be shortened considerably. Articles do not need to be bundled with others and can be delivered individually as soon as ready. Thus, papers do not need to wait to be batched with a number of others for publication. The actual review and revision processes do not, however, seem to be substantially faster than for print journals, although transmission times are, however, considerably shorter.

Dynamics

Electronic publication permits articles to become dynamic in that authors can make later corrections and readers could insert comments, citations, and their own corrections. At a simple level, for example, CAIS publishes letters to the editor by placing them right with the article so that reader input is seen with the article. In principle, this dynamic is no different to progressive editions of a book, which undergo modifications from the original. Thus, an article could become a living artifact. It would be necessary, of course, to develop a versioning system to distinguish between the initial publication of record and future amended versions.

But more important than the changes in publication media will be the radical effects that those media will have on the nature and process of research publication. The current process is presented graphically in Figure 1.

The steps in that process are:

1. Author submits paper.
2. Editor decides if paper has sufficient merit to warrant further review.
3. If so, the editor solicits reviewers and sends the paper for review. If not, the paper is rejected.
4. Reviewers submit their reports and the process returns to step 2. This iteration may be repeated several times.

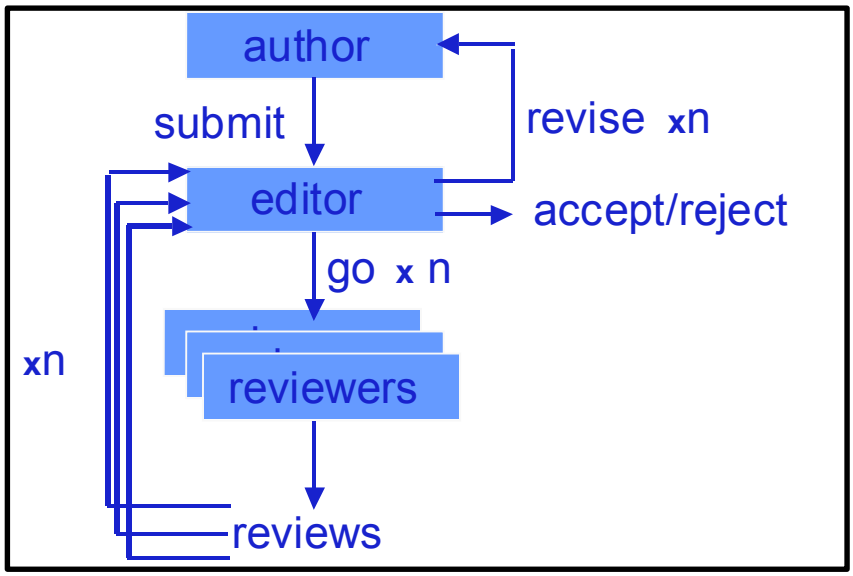

Figure 1. Conventional Publication Process

One possible format for a future publication process made possible by the electronic medium is as follows:

1. The authors submit a paper to the journal editor.
2. The editor decides if the paper has sufficient merit to warrant further review.
3. If the editor finds that the paper has merit, she/he will post it to the journal site and will invite the community of subscribers to submit reviews. The editor may also solicit reviews

from one or more recognized experts in he particular area with which the paper deals, as at present.

4. Any subscriber may submit a review to the same site. Review postings will be monitored by the editor and either posted, or returned if inappropriate.
5. After a certain time elapses, and based on the responses, the editor will decide among:
    a. Permanent posting to the journal site – i.e. publication - in which case the reviews will become part of the posting
    b. Rejection and removal from the site
    c. Putting the paper on hold, suggesting revisions, and inviting the authors to resubmit following revision.

This publication process is exhibited graphically in Figure 2.

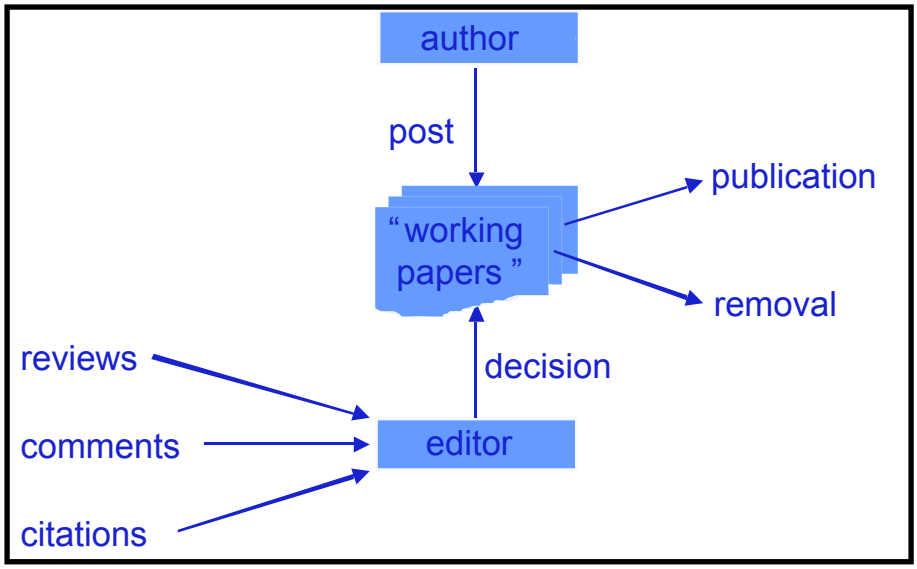

Figure 2. Publication Process Permitted by Electronic Publishing

"Peer review" would then not be by selected reviewers but by the community of peers as a whole. This change would transform the evaluation of research publication from a process with few participants to one in which anyone interested can participate and the best papers will survive.

In spite of the radical changes made possible by electronic publication, I believe they will be adopted only slowly by mainstream journals and in an evolutionary manner. The main reasons for this pace are:

1. As they are not visible on library shelves, electronic journals face the problem of achieving reader recognition. However, as the Internet is increasingly used as a source for references, this problem should be alleviated.

2. Because of the large number of electronic journals that were established privately, often with poor quality control, or even none, e-journals face a problem in establishing their academic "respectability". However, just as the market learns to distinguish between high quality print journals and others, so it will learn to distinguish varying quality of e-journals.

3. For the reasons mentioned in item 2, deans and P&T committees are wary of electronic journal publications. This attitude, of course, discourages submission to such journals at schools that do not include e-journals in their lists of top publications. Here too, growing familiarity with the various journals in any field should obviate, or at least alleviate this problem.

4. Many readers, including the author, prefer to read from a printed page rather than from a computer screen. This problem, too, should be alleviated by experience, improved monitors, faster and less costly printers, and improved formatting of electronic articles.

5. Rapidly changing technology can cause compatibility problems among authors, editors, reviewers, and readers. This problem is not overly severe today and will probably be further mitigated in the future as systems become increasingly compatible with one another.

6. A final, severe problem is that of archiving in an era of rapid technological change. It is quite possible that electronic journals produced today will not be readable by the technologies of a decade hence. Methods of migrating articles between technologies, or ensuring backwardly compatible technologies are essential if electronic journals are to fulfill the role assumed today by print journals as permanent repositories of knowledge.

In summary, I believe that electronic journals are the beacon to the future for scholarly journals. They will radically alter publication processes, but will achieve their full potential only gradually as a number of problems mentioned here are resolved.

DAVID AVISON

Academia is conservative: academics are conservative as are universities and related institutions. They resist change and change only slowly. Thus the 'classical scholar' is the typical academic. I therefore represent the majority of our colleagues (even information systems academics).

Classical scholars see the push towards new media with misgivings:

1. Aesthetics – Academics like physical books and journals (and libraries, bookshops and bookshelves). Aesthetics is an emotional aspect – books have a deeper meaning than simply as an informational resource. We learnt behaviours from books and were to some extent empowered through reading books as children.

2. Difficulties with new media – Although many are aware of potential advantages, classical scholars encounter difficulties with the new media. Conservative people see the disadvantages of change rather than its potential.

3. Infrastructure – Not every academic has access to CD readers, the web, and other new technology, or their access is limited only to some of these innovations. With 'globalisation' the assumption is made that what rich countries enjoy, all countries enjoy. This is not true, so many colleagues are disenfranchised. Some elements of infrastructure, such as standard reviewing technology, are not yet accepted by academia.

4. Networks – Established media communications underlie part of important cultural networks which may be lost when established media are replaced.

5. Incorrect assumptions – Supporters of electronic media assume, for example, that time gains are obtained. As a journal editor, delays in journal publishing are mainly attributed to the slowness of the refereeing process which is not greatly affected by new forms.

Again, assumptions about cost reductions are not always delivered (e.g., in journal publication). Apparent efficiency does not mean effectiveness.

6. We need to ensure the rewards for new publishing are equal with those of the established ones. This requires constant effort in ensuring quality considerations are foremost and that this mantra is communicated to the establishment.
7. Instability – Referencing becomes a problem when web site addresses change. Content changes because of online updates.
8. Assessment – Even if colleagues themselves accept that these media forms offer an improvement, their funders and employers are more reticent. Universities are suspicious of the refereeing process in newer forms, for example, and find it more difficult to assess quality. They are comfortable with assessing traditional forms. This viewpoint can, for example, affect colleagues' promotions and their ability to obtain research funding.

We assume that these misgivings will only be temporary. But such misgivings will only disappear with a concerted effort on our part to ensure that all these (and other misgivings) are addressed:

1. We need to devote a great deal more effort on design issues so that the production of electronic material conforms to the highest aesthetic values of conventional publishing and devote effort in ensuring children's first experience of the web are as positive as our first experiences of reading from books.
2. We need to be prepared to train our colleagues, prepare training material, and make the newer forms more immediately accessible with much better human-computer interfaces and interaction experiences. Effort needs to be made to create a 'one-stop shop' access for integrated material, requiring co-operation between publishers, academics and others.
3. We need to be less naïve ourselves about the globalisation issues and ensure that our voice is heard in support of enabling technologies for all our colleagues everywhere.
4. We need to include new media which are part of new communications networks equally as good as the established ones, including all the potential of present networks.
5. We need to change our behaviour as well as infrastructure so that we develop appropriate behaviours for these new opportunities, not assume that our present behaviours can simply be mapped onto new forms. We need new thinking to use this new technology.
6. We need to ensure the rewards for new publishing are equal with those of the established ones. Constant effort is required to ensure that quality considerations are foremost and that this mantra is communicated to the establishment.
7. We need to ensure that we agree on standards and that these standards are adhered to (at least in our discipline).
8. We need to convince universities and research funders, that the refereeing and other processes associated with new media are equal or better than conventional outlets.

KEN PEFFERS

The battle between printed and electronic research publications is already over as most major research publications already capitulated to user demand that research content be conveniently available online. One of the holdouts, for example, *MIS Quarterly,* recently made its content available online free of charge to AIS members. Now nearly every research journal is available in electronic format and print publications are a declining legacy media for IS research.

Setting occupational stereotypes aside, librarians appear to prefer electronic media to paper for obvious reasons. It is easier to store because it doesn't require shelf space or floor strength, the usual major capacity constraint for print journals and books. It need not be reshelved and cannot

be lost. The pages can't be infected with paper mites or torn out by lazy or vandalizing students. It can easily be redistributed to readers using fax, email, or local printer. Finally, it is potentially less expensive because it can be distributed to libraries at low marginal cost. Often librarians say that they prefer print, lament its loss, and are concerned about becoming dependent on commercial databases, but they vote with the library budget for online media.

Serious research readers prefer electronic access to journals as well. The major reasons include convenient access. Often articles can be accessed, browsed, and printed locally for reading, saving a trip to the library building and the tedium of photocopying. Frequently, inexpensive online access substitutes for interlibrary loan, especially for less prominent journals. Researchers are experienced with using electronically formatted papers though the exchange of working papers and article preprints among researchers, as well as the electronic exchange of draft papers among co-authors. In my conversations with research librarians, they point to researcher preference for full text electronic sources that are easily searched, right down to the concept and paragraph level. Online consolidators, e.g., Proquest and EBSCO, gained clout as many researchers search only electronically. For the IS journal, if your content is not online with Proquest, ACM, or AIS, it may be invisible to these researchers, even if it is published in a prestigious journal.

The new strategic regime for IS research outlets is characterized by extreme economies of scale, low entry barriers and a change in the nature of capital. Are journals making the changes necessary to survive and prosper?

The new media create opportunities for greater diversification in publication outlets. On one hand, prestigious journals are, in the face of growing output by researchers, keeping their own output steady or, in some cases, actually reducing it [Peffers and Hui 2003]. Meanwhile, increased demands for rigor resulted in longer papers. In the case of *MISQ,* for example, the mean length of an article doubled in 15 years. As a result, fewer papers are published in the best journals.

To meet the demand for research publication capacity, the number of outlets in which IS researchers publish exploded. My student, Tang Ya, and I recently identified 326 journals in which IS researchers claimed to publish. This large number of outlets can be attributed to demand both for more outlets and for specialized outlets.

The future will see many more journals, which will be more narrowly focused, attract smaller audiences, publish much more quickly, otherwise adopt more varied publication cultures. Some highly respected journals will fail to adapt and will lose favor with research suppliers and consumers. Outlets from outside IS will lose favor. Researchers will use their enhanced leverage to produce and publish a wider variety of products, e.g., ever more elaborate, rigorous full research papers, up to 100 pages long, and research that uses art, craft, history, and politics as reference disciplines and methodological templates.

The number of research outlets now exceeds the demand. This current surplus will become permanent as the IS research publishing industry faces the same "third industrial revolution" pressures that have affected so many other industries: significantly reduced fixed and marginal costs, excess capacity, competitive price pressure, and industrial exit. Across many disciplines there has been a crash in paid subscriptions and revenue for mainline journals as individual subscriptions per scientist were cut in half [Weber 2002].

Some traditional publishers may be unable to make the transition well because they think of electronic publishing as an add-on to print and approach it with the same slow, serial publication processes that they use to minimize the cost of producing a bundle of print journals. Electronic publishing is potentially much faster and marginal costs are low, but only if the process is optimized around e-publishing. When publishers bring out an electronic product with a production-oriented process optimized for print, it isn't necessarily faster or cheaper.

The current excess capacity among IS journals results in competition for scarce resources. For journals the critical resources are papers, authors, editors, and reviewers. These resources represent constraints for the publications particularly because while reviewers and editors have some incentive to be involved in the publication process, their interest in involvement can easily

be satiated. Our editors at *JITTA* report that their most difficult task is to line up suitable reviewers and to motivate them to do reviews quickly and well.

What does the immediate future look like for research outlets?

1. The abundance of IS research outlets will continue. The number of outlets is driven by demand and cost. Research outputs increased over the last 15 years and became more diverse. At the same time, as fixed and marginal costs to produce journals decreased, new journals can satisfy niche demands. For example, the first half of April 2003, saw the announcement of two new IS journals, the *Electronic Journal of Knowledge Management* and *International Journal of Electronic Business.*
2. Subscription price reductions will continue, driven largely by the bargaining power of the electronic consolidators, such as Proquest, and library consortia. Journal consolidators deliver library subscriptions for as little as USD 20 per journal annually, bundled in packages of thousands of journals, compared with hundreds of dollars each when the journals are ordered individually. The implication for the profitability of the journals is obvious: subscription revenue is plummeting. The implication for niche journals is also apparent: a journal can reach its intended audience easily through this kind of distribution, albeit without earning much revenue.
3. One effect of the multiplication of outlets is that it will allow IS research to reach beyond social science for research paradigms. Social science is an obvious paradigm for IS research because information systems are artifacts at the juncture of computers and organizations, however, it isn't the only one. Architecture is another. Architects design the physical space in which individuals and groups work and live, an obvious metaphor for the informational space developed by IS professionals. The profession is a mix of social science, engineering, and fine art. Research outputs in architecture can make applied or theoretical contributions and can be in the form of projects or papers. Information systems can be thought of as an information form of architecture, in contrast to the physical kind represented by buildings. Another potential research paradigm is history. Much of what we think about as case studies, a social science label, could benefit from the methodology and presentation traditions of historians. Historians resisted the adoption of a pure social science model for their research, even though the social science paradigm was championed for historical research more than 100 years ago. Now historians readily adopt multiple paradigms, including political science, literature, art, economics, and even propaganda.
4. New outlets will adopt even more narrow niche positions, including methodological, (e.g., empirical, argument, survey) paradigm (e.g., science, design, interpretation) and content focus (e.g., *Cycle Time Research*).

ROBERT W. ZMUD

The most institutionally-respected scholarly journals in most academic fields, including IS, can rightly be criticized on numerous grounds. All too often they reflect narrow and slow-to-change editorial positions, take too long for manuscripts to be published, and tend to be both expensive and not readily available or accessible in page-image or full-text electronic formats. Still, these top-ranked journals (which typically continue to be delivered in paper-based format, possess very formal editorial structures, and are characterized by intensively critical editorial processes) do perform a number of important roles for scholarly communities.

- The editorial review process, when it works well, can add significantly to the intellectual contributions of a manuscript.
- The editorial review process, when it works well, serves as a keen filter of intellectual contributions. We are awash in a vast pool of supposed intellectual contributions, much of which is likely to add very little to our accumulating bodies if knowledge. The editorial review process filters out those materials that do not contribute to bodies of knowledge,

and thus provides a critical window (at low search costs for readers) to the best work being produced

- It takes a long time for a top scholarly journal to be consensually received by an academic community as being a top journal. It takes an even longer time for top scholarly journals to be consensually received institutionally, i.e., by promotion and tenure committees, as top journals. Most institutions limit the number of journals allowed to serve such a valuation role at any given point-in-time. Thus, these top journals play a crucial role, right or wrong, in institutional valuations of scholarship. Further, new, purely electronic journals have not yet matured to the point where they are respected across most academic institutions. Simply said, it is in the best interests of a scholarly field to sustain this core of consensually recognized top journals

For the above reasons, I am very concerned about the rapid proliferation of scholarly IS journals, including the new electronic journals and related non-refereed distribution channels for scholarly work. On the other hand, it is an imperative that our top scholarly journals examine themselves regarding their ability to leverage the potential of new media and new distribution channels effectively, especially regarding:

- The submission of electronic manuscripts
- The e-enabling of editorial review processes, including status tracking capabilities by authors, referees and editors
- Increasing editorial diversity and engaging a greater variety of editorial participants through the global reach of new media
- The e-enabling of editorial board, editor-reviewer and editor-reviewer-author interactions
- The e-enabling of copy-editing and publication processes
- The e-enabling of manuscript distribution and access

III. QUESTIONS

This section presents the questions by the audience and the responses by the panelists ICIS 2002. The responses below include some additional responses not presented in the panel presentation.

1. Rita Ferreira, IESE Barcelona: The fact that e-journals publishing process is quicker, does this mean that we as researchers will be dealing with more updated information? Is there not a risk of "massifying" the system and losing quality as the number of journals grows?

   (Zmud)) A journal is but a reflection of its editorial processes. Quality is not a function of whether or not a journal is e-enabled; rather, it is solely a function of its editorial process. Now, if an e-journal sees its mission as primarily that of accelerating both the volume and speed of publication, then the danger of a loss in quality looms large (as well as the MIS field becoming awash in a sea of words). But, if the mission of the an e-journal is to ensure that what is published does, in fact, add value to the MIS field, then I see little danger of this occurring.

   (Avison) One major delay is the slowness of the refereeing process and this does not necessarily change with e-journals. There is indeed a risk of losing quality with e-journals and some will fall into this trap. On the other hand again this is a people issue not one of form. If the editors ensure the refereeing and other processes are solid, then there is no good reason

that quality suffers. But because of the risks and temptations, there is a greater likelihood of this happening with e-journals.

(Ein-Dor) The fact that journals are published electronically has little impact on the degree to which their contents are current. Most of the time elapsing between submission of a paper and its publication is spent on reviewing and revision. All that is saved by electronics is time in the mail, which is negligible compared too the substantive stages.

There is a danger that the low cost of producing electronic journals will lead to an increase in their number and quality may consequently be compromised. But there is a large number of low quality paper journals too. It is the responsibility of academics and the academic system to distinguish between the wheat and the chaff.

(Peffers) What constitutes quality is likely to change as a result of the new technology. IS research has become very refined as a branch of social science, but, in the process, some of it has become a little boring, sufficiently so that professionals in our discipline generally refuse to read our most prestigious journals. Articles in these journals have become very long, even when they're very incremental. Many of the new journals will take very different approaches to defining quality. Some of these have very fast publishing cycles, like *CAIS* and *JITTA.* Others publish in niche areas or have special audiences.

It is unflattering to say so, but it appears that the dominant paradigm for quality in IS research publications today has less to do with satisfying the needs of IS professionals and researchers for novel, applicable, and exciting results, than it does with making a good impression on researchers in adjacent disciplines in the business school. We can hope that the objective of research can begin to shift away from academic respectability and that the new journals will target the needs of the audience better.

2. Ted Stohr, Stevens Institute of Technology (to Zmud): Why should prestige accrue only to established paper-based journals or isn't it possible that, in the new world, electronic journals will become the most prestigious, the best filters, etc?

   (Zmud) Yes, it is possible. I personally much prefer electronic versions of journals to paper versions for a variety of reasons. However, many (if not most) scholars do prefer paper copies, and many promotion/tenure committees still look at electronic journals askance. This remains true in the MIS field and is even more so (in the context of business schools) in other academic areas. Over time, electronic journals will predominate (with a primary driver perhaps being cost-pressures on libraries).

   (Peffers) I respect the views of our elders in the discipline on this matter, however, there comes a time when we have to move beyond organizing the discipline to please researchers in other disciplines. The problem with tenure committees is a temporary one and the move toward electronic distribution is rapid. For most of our journals now, paper distribution is a rapidly diminishing legacy.

3. Susan Gasson, Drexel University: Surely, thorough and constructive reviewing processes are not linked to the mode of delivery? Why can we not separate the two?

   (Zmud) You are obviously correct. They should and must be separated. However, it must also be recognized the e-enabling of scholarly journals affects both the mode of delivery and the editorial process itself.

   (Peffers) The separation will only be temporary. As print media dies out as a viable delivery mechanism, the ecology of research publications will change dramatically.

   (Ein-Dor) To the best of my knowledge, the two are indeed separate. The fact that a paper and its reviews are submitted electronically is a matter of convenience. There is absolutely no reason why the quality of reviews should in any way be affected by the medium of transmission.

4. Phil Yetton: We tend to teach that automating adds little value. Where is the value in the new media?

   (Zmud) Timelier and more intense interactions between all individuals involved in editorial processes as well as more transparency in editorial processes.

   (Avison) There are cost differences but they are less than people often argue if quality in all aspects is maintained. Further, many of these costs are simply diverted to the 'free' time of academics and their assistants.

   (Peffers) Those that argue that cost differences are small are assuming that behavior doesn't change. They're assuming that you will bring a huge, inefficient publishing infrastructure to bear on producing research and only exchange the printed paper for electronic format at the very end. Instead think about the entry barriers. With the printed paper journal you need a big publishing organization to produce and promote the sales of the journal. For an e-journal, the very low capital and operating costs make it feasible to finance a new journal largely from the organizational slack of an academic institution, using existing hardware, software, and clerical assistance. In addition, the extremely low marginal cost for the next subscriber mean that e-journals can reach out to tap markets that were hitherto unprofitable.

   Earlier new technologies, email and word processing, resulted in profound changes in the way that intellectual property is created. These changes resulted from enabled behavioral changes, e.g., reducing the cost of re-writing. New research media will have similar impacts.

   (Ein-Dor) The value in the new media lies in several directions. One is the possibility of enhancing content by utilizing the media as suggested in my talk. A second is the ability to update and correct papers after they have been published. This, of course, requires distinction between the version of record of a paper as published and subsequent versions. A third value lies in the ease with which one can extract quotes, bibliographic items, graphics etc. for citation. Embedding hyperlinks in electronic publications makes source material much more readily available.

5. Emmanuel Monod, University of Nantes, France (to Bob Zmud): Do you think that the filtering role in MISQ changed when Allen Lee became editor in chief?

   (Zmud) Not really. MISQ's editorial board was already quite eclectic, so Allen's movement into the Editor-in-Chief role did not reflect any redirection of the journal's editorial decision making. Of course, any new editor brings in his/her personal touch and vision, which will cause slight perturbations.

   MISQ's editorial board has developed, over the years, a strong culture and resilient values regarding scholarship and editorial processes despite the relatively frequent turnover. This is the real strength of the journal. New Editors-in-Chief are selected because their stint as a Senior Editor indicated that they would reinforce (as well as enhance and adjust) this culture and these values.

   (Avison) Without discussing particular named people, there is a general point here. Whether an e-journal or not, the journal's quality and 'flavor' rest with the general editors, associate editors and board. The editors of the Information Systems Journal, for example, set out in the late 1980s to create a journal which was very different to the MISQ in terms of what research it published yet had equal quality.

   (Peffers) I think that Allen Lee influenced the publishing culture at *MISQ* that dominates thinking about publishing research in IS today. I count at least nine articles that he has written and published in *MISQ* about research, including editorial comments on these issues. Among the values that he has helped to establish, include these:

   a. Reviewers should become partners in the development of the article. Implicitly, this means that the reviewer isn't doing his/her job well without getting involved in improving the paper. It also suggests that, even when a paper is already interesting

and correct, the author must oblige the preferences of the reviewers for changes in presentation, scope, etc.

b. Information systems research is research about information technology and organizations. Consequently, it can't be simply about how to do something with information technology; there must be a human and organizational component for it to be IS research.

c. IS research can interpret reality instead of proving truths about it. However, such interpretive research must observe accepted formal methodology that has been developed in the social sciences.

6. Anon: *MISQ Archivist* was a wonderful idea with the Kettinger, Gua, and Chen article about BPR. Graphics were well used. Why not use it more?

   (Zmud) I agree that this is a wonderful idea and a great way to e-enable a scholarly journal. My take is that there are four reasons why it is not used more. First, authors, reviewers and editors -- when crafting, critiquing and revising manuscripts -- just do not think of it. Second, when advised to take such a path, some authors resist the suggestion because they believe it will 'water down' the scholarly value. Third, it is not clear where such an e-appendix should be hosted – should it stay with the author or move to the journal? There are logistical and cost issues involved. Lastly, there is debate as to whether or not an e-appendix should be a static (stay the same as when original published) or dynamic (evolve as the author's own learning increases) document. However, I do foresee that e-appendices will become much more common over time.

   (Peffers) That it isn't used more suggests that it may not be needed. First, huge appendices, like huge papers, may often be more a function of reviewer and editor interests, rather than those of the authors or readers. Reviewers often demand these appendices to gain assured access to author "property," such as datasets and validated questionnaires that authors aren't keen to give away. Where there is value to such material and the authors are willing, it doesn't need to be part of the paper; it can simply be presented on authors' websites.

   (Ein-Dor) I interpret the question as asking why graphics are not used more in electronic media. In my experience, authors are not well aware of the possibilities. And in electronic media, they go well beyond graphics. Thus one can append on line experiments, video, sound, 3D, etc. to enhance the content of papers. I believe that editors need to actively encourage authors to utilize these possibilities until they become routine.

7. Emmanuel Monod (to Ken Peffers): If researchers only use Proquest, will intelligent agents rule the world?

   (Peffers) Research databases, like Proquest, are having dramatic impacts on the value of research outputs. First, they lower barriers to entry for new journals. Instead of having to sell hundreds of library subscriptions in order to become available to researchers, the publisher needs to sell just one, to Proquest, and the journal is instantly available to millions of potential readers, worldwide. Articles in a journal, such as *JITTA,* that is distributed through Proquest, can be available to more readers than even the most prestigious research journals that are not so available. Secondly, the existence of such databases puts enormous pressure on all but the most prestigious journals (and even on these journals) to participate. Researchers want to produce research economically and often limit their literature search to electronic sources. Consequently, if an article isn't available or at least mentioned on Proquest, it is likely to be missed by many literature searches and less frequently cited. Researchers may reasonably avoid publishing in journals below the very top tier that aren't included in the major databases. An informal survey that I conducted a couple of years ago indicated that 84% of IS researchers used Proquest for literature search. Consequently, it wouldn't be unreasonable for a researcher to infer that Proquest inclusion is a necessary component for an outlet for his/her research and a necessary and sufficient tool for literature research.

(Avison) First, not all journals use Proquest. There are alternatives, most notably EBSCO, and it is important that librarians and researchers are aware of the alternatives. One danger of such tools as I see it is that research will become narrower as people only look at papers reflecting their key words.

8. Emmanuel Monod: How about if my working paper online gets imitated, stolen and then discarded?

   (Zmud) This is a real problem and stands to only get worse. The problem arises because of an information asymmetry between perpetrators and editorial boards, an asymmetry which will only widen if both the number of publishing outlets increases and the quality (i.e., keen critiques of content by individuals knowledgeable about the topic area and about the current work of the scholars most interested in the topic area) of journal editorial processes decreases. How can this best be resolved? Doctoral programs and doctorial consortiums must insure that ethical aspects of scholarship and publishing are made clear and journal editors must act with a strong hand when ethical violations occur.

   (Avison) In some respects this is less of a problem now as it is much easier to detect plagiarism.

   (Peffers) One of my early influences that helped steer me toward a career in academics was a delightful novel by Kingsley Amis, *Lucky Jim*. Jim is a history lecturer, who is waiting through most of the novel to hear back from the editor to whom he has submitted a paper. He never gets an answer from the editor, but eventually he stumbles across a translation of his paper, published in Italian in an Italian history journal. Fortunately, this sort of thing happens more in our bad dreams than in reality. In the end, however, Jim got both the promotion and the girl, in spite of not having any publications credited to him.

9. Emmanuel Monod (to Bob Zmud): Don't you thing the filtering role is in danger of preventing innovation and originality?

   (Zmud) Yes, if editorial boards do not actively promote innovation and originality. On the other hand, effective editorial boards actually increase innovation and originality by pushing authors to extend the depth of theorizing and analysis in a manuscript and to take reasoned risks. The danger arises when an editorial board becomes static, i.e., no changes occur with the Editor-in-Chief (and Senior Editors) and the editorial board. Here, then, is the paradox. To maintain both quality and innovation, a journal's editorial board must possess (1) a shared understanding of the journal's values, mission, editorial decision structures and editorial processes, (2) a leadership structure willing to innovate, and (3) relatively frequent turnover (which serves to diminish the shared understanding). Thus, an effective editorial board must have strong socialization processes and considerable (internal and external) transparency in its editorial decision-making.

   (Avison) There is no reason that I can see for this being any different for e-journals. But the refereeing process can change an exciting and innovative paper into one that is more conventional and dull. But good editors will not let this happen.

   (Peffers) The need to satisfy reviewers and editors probably does inhibit innovation and originality. Generally, I think that for reviewers and editors, rigor is sacred, while novelty, reality, and relevance are given lip service. It is a lot easier to show an acceptable level of rigor when one sticks to incremental work that is closely related to what others have done.

10. Emmanuel Monod (to David Avison): Is resistance to change greater in France, UK or USA?

    (Zmud) Most likely the USA for the simple reason that scholarly journals (and their editorial boards) located in North America tend currently to be most prestigious and, hence, have most to lose with change.

    (Avison) People are resistant to change. But as we know from our teaching, there are ways of helping people in the change process. We should also look at ourselves. Was the change of the ICIS proceedings to Web-only brought in accordance with best practice that we advise

others? The Information Systems Journal is available on the web and/or on paper. Why not give customers the choice?

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ABOUT THE AUTHORS

David Avison is Professor of Information Systems at ESSEC Business School, Paris, France and is visiting professor at the University of Technology, Sydney, Australia and Brunel University in England. He is joint editor of Blackwell Science's *Information Systems Journal* and the *Butterworth-Heinemann* series of texts in information systems. So far, twenty books are to his credit (plus one translation from the French) as well as a large number of papers in learned journals, edited texts, and conference papers. He is vice-chair of IFIP Technical Committee 8 and representative for France. He is past Chair of the IFIP 8.2 group on the impact of IS/IT on organizations and society, past President of the UK Academy for Information Systems, and UK Professors and Heads of IS. He was program chair of several international conferences. avison@essec.fr

Phillip Ein-Dor is Professor and Chair of New Economy Information Systems at the Faculty of Management, Tel-Aviv University. He is the founding editor of the electronic *Journal of AIS* and served on the editorial boards of *MIS Quarterly* and *Information Resource Management Journal*. He is currently on the advisory board of *Information Technology and Management* and on the editorial boards of *Journal of Management Information Systems*, *Information & Management*, and *Internet Research*.

He served as a council member as well as on the organizing, nominating, and publications committees of AIS. In 2000 he was honored as an AIS Fellow. He is currently president of AIS. eindor@tau.ac.il

Ken Peffers is Associate Professor of Information Systems at the Hong Kong University of Science and Technology. He is the founding editor-in-chief and publisher of *JITTA, The Journal of Information Technology Theory and Application. JITTA* aims to communicate the results of exciting IS research quickly through the use of IT and a re-engineered review and publication process. *JITTA* is available through Proquest ABI-INFORM, and by subscription at http://jitta.org. He will move to the University of Nevada Las Vegas, effective August 1, 2003. k@peffers.com

Robert W. Zmud is Professor, Michael F. Price Chair in MIS, and Director of the MIS Division at the University of Oklahoma. His current editorial contributions include roles at *Information Systems Research* and *Journal of AIS* (Senior Editor), *Management Science* (Associate Editor), and *Academy of Management Review* and *Information & Organization* (Editorial Review Board). In addition, he was previously Editor-in-Chief for *MIS Quarterly*, a founding Senior Editor for *Organization Science*, and held editorial roles with *Communications of the ACM, Decision Sciences, Journal of Engineering and Technology Management, and Systems, Objectives, Solutions.* rzmud@ou.edu

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