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Ralph Westfall

California Polytechnic University Pomona, westfalr@acm.org

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Communications of the **A**ssociation for **I**nformation **S**ystems

DARE TO BE RELEVANT

Ralph D. Westfall

College of Business

California Polytechnic University, Pomona

rdwestfall@csupomona.edu

ABSTRACT

Research relevance is an ongoing concern in the IS field. The perceived lack of relevance has its roots in institutional factors. I argue that the current environment offers a great opportunity to influence these institutional factors in the direction of greater incentives for relevant research. I recommend that: 1) Current candidates in the IS faculty market should include relevance as a factor in deciding which position to take, and 2) IS researchers should use the Internet to package and promote their research to develop a constituency outside their academic institutions.

I. INTRODUCTION

Why can't we be relevant?

The two most vigorous threads on the ISWorldNet discussion list in recent years have been on the topic of IS research relevance. The number of participants and the intensity of the comments demonstrate that many IS academics feel that:

- much of our research is not relevant, and
- this is a serious problem.

I repeat: Why can't we be relevant? Let me remind you of some things you already know very well:

- Information technology is an interesting topic. IT receives a lot of attention in the media. Leading newspapers and news magazines offer regular sections on the subject. It is not uncommon for national magazines to have cover stories on IT, even to the point of *Time* magazine choosing the computer as its "man of the year" back in 1982. IT is a regular part of the background in movies and television shows and a prominent aspect in some. IT will be an integral part of newer, more interactive forms of entertainment.
- The Internet has tremendous impact on business practices and perceptions. The unprecedented speculative bubble on NASDAQ, followed by the "meltdown" in April 2000, is a vivid indicator of the ramifications of IT in the business arena.
- The Internet has a large impact on individuals outside a business context. The statistics show that access to the Internet spread through the population more rapidly than the telephone and television in earlier eras. IT enabled a rapid increase in the rate of change, creating a state of flux and turbulence throughout society.

- The demand for people with IS skills is large, growing, and not completely met, paralleled by an unmet demand for people to teach IS. Starting salaries for new college graduates with IS skills, and for new PhDs that can teach IS, are noticeably higher than the averages for the respective populations.
- Etc. [If you can't add at least one additional significant indicator to this list, you may be part of the problem.]

As an experiment, try the following: Talk to an impartial observer outside of academia, someone reasonably intelligent and up-to-date on what is happening in business and society. Ask her why academics in the IS field are having difficulties in being relevant. I would not be surprised if her initial response was bewilderment: "You are in this field which is so dynamic and interesting, and is having so much impact in so many areas? And you say you are having trouble being relevant? I can't understand how you could *not* be relevant!"

I entered this field because I believed that it was interesting and important. I am sure that most of us feel the same way. Why do we find ourselves in a situation where we seem to be unable to capitalize on all the inherent advantages that our field offers?

- Did we collectively make a conscious decision that we were going to be irrelevant, in spite of all the factors pushing in the other direction?
- Or did institutional factors gradually destroy our desire and ability to do relevant research?

I believe that the latter is the case. If so, the issue then becomes: What can we do to mitigate these factors? I suggest two approaches to influencing the institutional environment:

- If you are in the job market, include issues related to relevance in your interviews and ultimate decision, and
- Design and package your research so that it will generate more impact outside of your institution.

II. VOTING FOR RELEVANCE WITH YOUR FEET

The imbalance between the supply and demand for faculty who can teach IS is large. At the AMCIS conference in Long Beach, California in August 2000, there were approximately 400 positions available for around 100 candidates. The implications of this imbalance for salaries and for opportunities to choose desirable positions are obvious. However the situation also offers an unprecedented opportunity for the IS field to influence the institutional environment so that it provides more incentives (or fewer disincentives) for relevant research.

If you are a new or recent Ph.D. in the job market, you have the opportunity to apply some powerful leverage. You can raise this issue in all your job interviews, and make it a consideration in deciding which offer to accept.

Needless to say, this strategy can also be followed by IS academics with established reputations who are considering career moves. For the latter, as noted in a recent CBS network broadcast of "60 Minutes," the options are not limited to traditional academic positions. A segment on the February 18, 2001 edition of this respected and widely viewed program suggested that the high level of interest in distance learning could soon lead to very lucrative alternatives for some academic "superstars."

There are leading universities where publications in even top-tier IS journals are not sufficient to attain tenure, and many others where publications outside of academic journals count for very

little. For all practical purposes, they do not reward publications in outlets that are actually read by large numbers of practitioners. Another factor that has low weight in such environments is developing and maintaining personal skills with existing and newer information technologies.

Up to this point, these policies have not had any noticeable impact on the ability of these schools to staff IS programs. However they now are experiencing pressures from two sources: from their students and from industry. The students are clamoring for more IS courses because of the opportunities for high salaries and desirable positions. Industry is a major source of funding for these schools and wants, among other things, an increased the supply of graduates with IS skills. If the lack of concern for relevance starts making it difficult for some schools to meet the demand for IS classes, it would encourage them to reevaluate this issue. If this contingency happens in even one or two top-tier schools, it could result in significant improvements trickling down to less prominent institutions.

I am not suggesting that candidates should make relevance their highest-priority. However I am recommending that they surface the issue in their job interviews, and then consider the long-term implications of unsatisfactory responses. Would they really be happy in an environment where research is an end in itself, with little or no influence on the world where innovative IT solutions are implemented and strategic IT decisions are made? Would they be happy doing research that very few practitioners read, and which might even be ridiculed by practitioners who happened to see it? [Senn, 1998] By asking the right questions in their interviews, candidates can get a better reading on their opportunities for personal fulfillment in their work and, at the same time, help raise the consciousness of this issue at a time when increased visibility can have the greatest impact.

III. DEVELOPING AN EXTERNAL RESEARCH CONSTITUENCY

The high level of interest in IS/IT makes it possible for us to cultivate two external frames of reference more effectively: the general population that sends students to our schools, and the organizational world that hires these students when (or even before) they graduate. If we establish greater credibility with these external stakeholders, we could generate increased respect for relevant research within our institutional environment.

I suggest the following strategy:

- Choose topics where academia has a competitive advantage over outside researchers [Westfall 1999].
- Choose topics that are interesting to external stakeholders, and can be made accessible to them.
- Package and publicize findings to make them more accessible to external stakeholders

CAPITALIZE ON OUR COMPETITIVE ADVANTAGES

As noted in my previous paper on this topic [Westfall, 1999], a great deal of IS/IT research is conducted by commercial organizations, such as Forrester and Gartner, and by in-house research units in large technology corporations. These competitors have major advantages over academic researchers. They can pour tremendous financial resources into their research on any problem they choose to study. If a problem can be solved by brute force, and there are incentives for them to address it, they will usually solve it long before any of our research on the issue can be published.

However we do have some competitive advantages over commercial researchers. Consider the following non-financial resources in our portfolio:

- *Intellectual environment*: We have access to colleagues in our own field at our own schools and through conferences. With IS departments typically being housed in business schools, we have interactions with colleagues in related fields. In a university environment, there are opportunities for contacts with scholars in seemingly unrelated fields, which could lead to unexpected new insights relative to our own field.
- *Graduate students*: The university is a unique environment because of the presence of graduate students. Many are very intelligent people with strong technical skills, who chose temporarily to exchange the much higher incomes they could be earning in the business world for an opportunity to achieve very important personal goals. In addition to being a great source of novel ideas, they also represent a tremendous intellectual resource that can be enlisted to help solve problems that are truly relevant to the larger society.

We also have the academic freedom to study issues that commercial researchers will choose *not* to study, based on the following considerations:

- *Long-term perspective*: In contrast to commercial researchers, we can look at problems where the ultimate payoff is very large, but the payoff is in the distant future or possibly unattainable because the problem may be unsolvable.
- *Broader perspective*: Commercial researchers do research on issues that will generate revenues for their firms. They accomplish this goal largely by doing research that will, in turn, generate revenues for their clients. In contrast, in academia we can do research that may be of interest to the larger society, but which has unfavorable implications for business interests.

For example, Ray Panko's [1998] research stream demonstrates that spreadsheets are very vulnerable to errors and that the errors can have major financial implications. This finding is quite relevant to the large population of spreadsheet users and their organizations, but may not be economically exploitable because this constituency is relatively diffuse. Because this problem has not been effectively solved since Bricklin and Frankston developed spreadsheet software in 1979, it may be an inherent aspect of the category and possibly unsolvable. Knowing this, the leading spreadsheet vendor is unlikely to sponsor commercial research on this topic, and might choose not to buy research in the future from a firm that widely publicized adverse findings.

- *Complexity*: The business world and the larger society abhor complexity. On the other hand, many of us in academia are attracted to it. Although there is a very real danger of making complexity and end in itself, some problems can't be solved by simple approaches. The key to capitalizing on our penchant for complexity is to identify problems that are both relevant to external stakeholders and probably unsolvable without complex approaches.

For example, consider the Black-Scholes options pricing model. Although developed by academics and uncomfortably complex for most business people, it has a tremendous impact on the functioning of the financial markets.

If we try to do research on issues that the Forresters and Microsofts of the world have incentives to study and can handle more effectively, we are wasting our time. Worse yet, we expose ourselves to ridicule by people who are familiar with the topics and are aware of what is being done in industry. Thus research in areas where we are at a competitive disadvantage could actually discourage potential support for our field from external sources.

CHOOSE MARKETABLE TOPICS

Even if we choose topics where we can capitalize on our advantages, our research will not be relevant if there is not a significant audience for the results. I suggest that the problem is a failure to do some simple market research, such as asking the following questions:

- Is this a real and significant problem? To be a real problem, the solution needs to make a difference for an identifiable group. If the group is relatively small, the difference has to be large. If the group is larger, the impact doesn't have to be as big, but it still must be noticeable.
- Will the results be interesting? Is the research likely to discover something new, something that hasn't been said before? Is the research likely to uncover something that is contrary to widely held opinions on the topic?
- Can the results be disseminated in such a way (see the next section) that they will effectively reach the target markets: the people who need a solution to the problem, and anyone else for whom the results will be interesting?

Note that the above questions must be evaluated in terms of marketability at the time when the research will be completed. This rules out rigorous research on short-lived issues if the goal is publication in traditional academic outlets. However it does not exclude publishing findings on short-lived issues in trade publications or in conference proceedings.

It would be presumptuous of me to suggest specific topics. IS is a heterogeneous field, encompassing academics with very different backgrounds and interests. Given this diversity, we have the capability to explore a wide variety of topics, and we should do so. What I am suggesting is that academic IS researchers should start with the things that are most interesting to them, and then select the more marketable items as a subset to receive greater attention.

A search engine is a great tool for identifying potential levels of interest in IS research topics, if the topic can be associated with a keyword or unambiguous phrase. Material on the Internet tends to have a disproportionate emphasis on IT, which makes it especially useful to our field. The content tends to reflect what is currently popular, which is good in the sense that it downplays older issues, and not so good for identifying things that may be more important in two to five years.

For example, I did some searches using the Google search engine on February 23, 2001. The search identified over 1.1 million web pages that included the word XML. In contrast, there were less than 0.4 million pages with the word COBOL, even though there are still far more COBOL applications than XML applications in use in the organizational world at the present time.

MAKE YOUR RESEARCH ACCESSIBLE AND HELP PEOPLE FIND IT

An outsider might expect that virtually all current and recent research findings by IS academics would be available to the general public on the Internet. This is unfortunately not true at present. However individual IS researchers can and should resolve that all their research will be readily available on the Internet from now on.

To personally implement such a policy, IS researchers first need to identify publication outlets that make their contents widely available on the Internet. They also need to consider questions such as the following that influence the level of availability:

- Does the publishing agreement allow researchers to post a copy of the publication on their own websites? (If not, the following questions become much more important.)
- Are full copies of the articles available to the general public at the publisher's web site, or just abstracts?
- Will the content remain available on the Internet for an extended time period, for at least five years and preferably much longer?

- Will it be possible to add *meta tags* to the content, and other enhancements (see Appendix) that will improve the article's position in search engines and thus increase its accessibility to other researchers and the general public?

Assuming that the answers to these questions are satisfactory, the next step is to enhance the document to make the findings more accessible to the world. The Appendix contains information on the simple mechanical process of enhancing an Internet-published document to improve its position in search engine listings.

The Appendix also provides a brief summary of my experiences with using these techniques to increase the readership of one of my papers. The example paper is currently receiving 200 or more visitors every month. While this is a small number relative to the millions of visitors at leading Internet sites, the paper has to be receiving more viewership at this location than in the printed proceedings of the conference where I presented it. Also note that statistics on domains and site types show that the paper's viewers come from business, government and academia, and thus would be more influential than casual surfers visiting the leading sites.

To put this in context, suppose that just half of the over 2000 subscribers to the ISWorld list put up one or more research papers on the Internet. Also suppose that, using the techniques outlined in the Appendix, over time the viewership would grow to an average of 200 per month per IS researcher. The aggregate would be 200,000 viewers per month. Would this not be an effective way to reach a much larger audience than we are currently reaching with our research? Would not viewership in this range increase our impact in the world outside academia, even to the point of ultimately influencing the institutional climate within which we operate?

IV. CONCLUSION

Relevance is an issue that is not going to go away. Our choices at this time are to passively bemoan the disincentives in our institutional environment, or to capitalize on the advantages inherent in our field and the current environment to do something about the situation. I am voting by my actions for the latter. Will you join me?

REFERENCES

EDITOR'S NOTE: The following reference list contains hyperlinks to World Wide Web pages. Readers who have the ability to access the Web directly from their word processor or are reading the paper on the Web, can gain direct access to these linked references. Readers are warned, however, that

1. these links existed as of the date of publication but are not guaranteed to be working thereafter.
2. the contents of Web pages may change over time. Where version information is provided in the References, different versions may not contain the information or the conclusions referenced.
3. the authors of the Web pages, not CAIS, are responsible for the accuracy of their content.
4. the author of this article, not CAIS, is responsible for the accuracy of the URL and version information

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APPENDIX

TECHNIQUES FOR ENHANCING SEARCH ENGINE PLACEMENT

There is a great deal of information on the Internet on the topic of optimizing the position of a document in search engine listings (try a search at <http://www.google.com/> on "search engine placement"). Much of it can be summarized as follows:

- Identify the key words and phrases that people will use in search engines to find your document (try some keywords in search engines to see which words turn up pages that deal with the topic)
- Put these key words and phrases in "meta tags" in the "head" section of the HTML document. For example, <meta name="keywords" content="[your key words and phrases, including variations such as singular and plural, related words derived from same stems, etc., separated by commas]">
- Put the keywords into the <title> of the document
- Use these key words and phrases frequently in the initial content of the document, and especially in a <h1> header at the start of the document
- Put the keywords into the alt attribute of tags
- Submit the URL of your document to the leading search engines and directories. Be sure to submit to the top two (see <http://searchenginewatch.com/reports/statmarket.html>): Yahoo and AltaVista. Depending on your time and inclinations, submit to other search engines that would be used by people with an interest in your material.
- Develop a web site designed specifically to house and promote your research publications. Publish your material on this site if this is allowed by the journals or proceedings where the articles are published. If a publisher does not allow you to put an item on your own website, include a link to an online version at the publisher's site.
- You may find it helpful to have your site include subsidiary pages devoted to individual topics. Be sure to submit the URLs for the site and each subsidiary page to leading search engines, as well as the URLs for individual articles on your own and/or other sites.
- Put a counter in your document that will generate statistics that you can use to get information on traffic, search engines used to find it, keywords in searches, etc. (I use a link to <http://www.webstat.com/> on one of my pages, and also a "Hitometer" from Web Site Garage at <http://websitegarage.netscape.com/turbocharge/hitometer/index.html>.) Based on the feedback from sources such as these, you may want to add different keywords or make other changes in the document. (As an example, my February 2001 "Hitometer" statistics for this site are posted at <http://www.csupomona.edu/~rdwestfall/feb2001stats.html>)

I have been following this strategy with a paper that I published in the proceedings of AIS97. I found that due to the concentration of keywords (telecommuting and productivity) near the top of the paper, it achieved relatively high search engine positions without any optimization. I subsequently republished the paper on my own website, so that I could add <meta> tags, change the <title>, etc. to enhance its position, and then submitted it to a few search engines. This version of the paper (<http://www.cyberg8t.com/westfall/prdctvty.html>) has been generating 100-300 visitors per month since April 2000, with a total of over 2800 visitors since I added the counter in April 1999.

Note that this level of visitors developed over time. The highest monthly count in the first 11 months was only 44 visitors. However continuing enhancements, and submission to additional search engines, substantially increased the totals since then.

ABOUT THE AUTHOR

After a 26-year business career, Ralph Westfall earned a Ph.D. in Management of Information Systems from Claremont Graduate University in 1997. He teaches via physical presence at California Polytechnic University in Pomona and plans to teach remotely through distance learning technologies. He has published in *Information Systems Management* and *Journal of Computer Information Systems*, and wrote a chapter in *The Virtual Workplace*. He presented papers at conferences of the Association for Information Systems and Decision Sciences Institute. He was invited to participate in a 1998 National Research Council workshop on information technology literacy. He organized and was a member of a panel on Making Information Systems Research More Relevant at the International Conference on Information Systems in 1999. His research interests include Internet technologies, electronic commerce, the virtual office and other forms of remote work, distance learning, information technology literacy, and applications of information technology in higher education.

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