Bridging Academic Research and Business Practice with the New Media

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Much academic research on information technology (IT), systems (IS), and management (IM) has been branded by practitioners in business as unusable, irrelevant, and unreadable. Consequently, it is highly unlikely that conventional outlets for such work, e.g. scholarly journals and conference proceedings can receive significant real-world exposure. By reversing the push-pull dynamics of information dissemination and retrieval in the New Media, alternative approaches are emerging. This article presents the history of a case in point with data recorded over a period of 15 months. It is shown that the Internet in general, and the World Wide Web in particular, will be a significant resource in bridging the gap between practice and relevant research.

The Widening Gap between Business Practice and Academic Research

The relevance and applicability of academic research conducted in business schools have long been questioned. In their 1984 *Harvard Business Review* article, Behrman and Levin concluded that:

> "For the most part...the research in business administration during the past 20 years would fail any reasonable test of applicability or relevance to consequential management problems or policy issues..."

In the comprehensive review of management education and development, Porter and McKibbin (1988) further distinguished between the relevance of such research and the import of the reported findings. Based on extensive interview and survey data, they observed that the business community knows relatively little about the research programs and their findings. Apart from the routine distribution of a reprint series to supposedly interested parties,

> "...most business school professors are purposely aiming their research reports toward their academic brethren and...do not care whether such publications are comprehensible to practicing managers or not."

The result is a pervasive lack of "corporate knowledge" of business school research. This communication gap further deprives academic researchers of the impetus and critical feedback from the business community which may help increase the impact of their work.

Apparently, the situation has not improved significantly since. In Spring 1995 the Board of Directors of the American Assembly of Collegiate Schools of Business (AACSB, which has since been renamed The International Association for Management Education) appointed a task force to look at the leadership and development needs of business school faculty and to determine how best to meet those needs. In the report (Urban, 1996) released in April 1996, the primary problem identified was that faculty skills are not aligned with the rapidly changing needs of business, resulting in the widening of the gap between practice and academic research and teaching.

While the above critiques applied to academic research in business in general, the state of affairs specific to the information related fields—information technology (IT), information systems (IS), and information management (IM)—is no exception. To quote Tom Davenport (1997), who is well-established both in practice and in academe:

> "The state of IT-oriented research is downright

dismal... Much IT-oriented research is neither comprehensible nor practical...The topics researched are less than au courant... The journals in which academic IT research is published are rarely read by practitioners...They are often unfathomable, even to other academics...[The] publications contain pseudoscientific jargon, arcane statistical techniques and slavish footnoting."

Similar opinion has echoed in the practitioner-oriented press (Alter, 1997):

"Too much academic research on IS is unusable, irrelevant and unreadable. Most professors seem content to write about jargon-filled frameworks, vague theories and marginalia rather than help solve today's nagging problems...Junior faculty members who produce good research are afraid to share it with the press. If they do, they may ruin their chances at publishing it in academic journals and wreck their chances at tenure."

The causes for such criticism are obviously deep-rooted and it will be naive to contemplate any quick fix. Instead, we address one consequence of this apparently pervasive public perception. Since the connotation of academic research has become "esoteric and irrelevant" rather than "rigorous and useful," one may speculate that traditional outlets of scholarly work such as journals and conference proceedings (Hosapple et al., 1994) cannot be effective media to reach a potentially broad audience for relevant results. The question is then: If a professor does come up with research that is relevant, are there alternatives to the established outlets to disseminate such information? We present a case in point and document its development over a period of 15 months. It has implications in establishing the Internet in general, and the World Wide Web in particular, as significant resources in bridging the gap between practice and relevant research.

Academics, Practitioners, and the New Media

Since the conventional medium for the dissemination of academic research is that of the printed journal, it is appropriate to adopt the newsprint industry's terminology of the New Media for Internet-based communication. As the World Wide Web (WWW or Web for short) has emerged as the increasingly dominant application of the Internet to publish and browse information, we assume it to be the primary platform for the New Media. Given the perception among practitioners of printed journals as mostly irrelevant academic research, the natural question is whether the New Media can make any difference. For the answer, we need to examine what initiatives academics have taken on this front.

There is indeed a growing body of literature on scholarly electronic publications (see Bailey, 1997 for a bibliography.) In the IT-research area, there were discussions of a global community of scholars (Watson, 1994), electronic journals as legitimate media (Kling and Covi, 1995), and barriers—motivational, institutional, technical, and philosophical—to adoption (Ives, 1996). Yet, the focus has remained by-and-large "intramural," in the sense of exploring the technical possibilities within the confines of well-set academic values and priorities among scholars. Even in cases that go beyond transplanting old practices to the New Media, implying transformation of processes such as peer review and collaboration, there is little effort in breaking the mold of prevalent academic culture. In brief, the academic trend in deploying the New Media can only lead to the same kind of knowledge base that is of little use to practitioners (Harrison and Stephen, 1996).

This prompted an examination of the underlying issue of information dissemination and retrieval. With the New Media, this has become known as push versus pull (Cortese, 1997). However, any mode of information exchange is a mix of push and pull (DeJesus, 1997). While television broadcasting is considered a prime example of push, the viewer must turn it on (pull) and off. Similarly, while a book sitting on a shelf may suggest pure pull, the process of publishing is push. This last analogy is particularly apt for considering alternative outlets for academic research in the New Media. With the conventional channel of scholarly journals, the perceived quality standards as reflected in the rigor in peer reviews and stringent acceptance rates serve to push its content. Pulling on the part of the reader is more in the nature of "Let's see what is in this issue of a trusted resource" than "Let's see what is out there that I need." An alternative of reversing the relative emphasis on push and pull now emerges.

Methodology

To realize this alternative, we designed the following experiment. Use the timely results of a research project that has obvious relevance to contemporary business interests. Put up a summary page on the Web, including an electronic form for requesting the full report. The process of locating and downloading the report constitutes the pull aspect of this approach. For the push aspect, launch an initial publicity campaign for the research in the business and IT-related press. Record and study the demographics and source of referral of respondents as an indication of the potential of the New Media as an outlet for research results. Finally, identify specific linkages within the New Media as effective elements to bridge the gap between practice and research.

The Case of WWW1000

Currently, the topic of electronic commerce is relevant and timely as businesses large and small are scurrying to stake a presence in this new frontier. Our initiative was based on the following observation. While commercial applications of the Internet, particularly in the form of business sites on the World Wide Web proliferate, on-line business is still rela-

tively insignificant. Apart from the well-known difficulties with bandwidth and security, technical issues that can no doubt be resolved eventually, there is the more probing question of what value is being created on the Web. Certainly, one cannot expect real progress if it is simply the digital replacement of conventional channels such as newspaper ads, TV commercials, phones, and fax. In Spring 1996, the author proposed a framework to evaluate Web sites from a customer's perspective of value-added. Representative samples from 40 industries, totaling 1000 sites, were evaluated to give a snapshot of where we stood in mid-1996.

The framework has the two dimensions of "Purpose" and "Value" as illustrated in the 4x3 matrix in Appendix A along with examples of Web site features or functions that fit each of the purpose-value combinations. A sample of 25 Web sites were randomly selected from each of the 40 industries listed in Appendix B.

Each site was explored in sufficient detail so that all its value-adding features were identified and classified using the above framework. The percentage of sites having features in each purpose-value category was recorded. The results were tabulated, analyzed, and discussed. The evaluation approach as well as the results were summarized in plain English on a Web page which included an electronic form for the interested reader to request a full report. The reader was asked to supply his or her name, title/position/occupation, company/ organization, e-mail address, and where he or she found out about the summary page for the study. The full report, which contained results tabulated by industry and brief narrative accounts of each sample and the common and special features encountered, was set up as a downloadable PDF (portable document format) file. A condition of use was included on the front page asking readers who would like to refer others to this work to do so with the summary Web page, rather than passing along the full report directly. This was to help us track as many readers as possible. On receipt of a request, the supplied data was logged and an e-mail was sent to the reader with instructions to access the full report. Apart from the URL of the PDF file, information on where to download the free Acrobat reader software from Adobe Systems was provided for readers who were not yet set up to process such files.

Chronology of Events

Between June 2 and June 5, 1996 the following informal "press release" was sent via e-mail to 47 editors of 40 business and IT-related publications (Appendix C) with significant practitioner readership.

Evaluating the World Wide Web: a Study of 1000 Commercial Sites

Dear Editor,

The results of our research project "Evaluating the World Wide Web: A Study of 1,000 Commercial Sites" may be of interest to your readers. A summary page is at http://www.uic.edu/~jimho/www1000.html.

Jim Ho
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The study was featured as the "Web Site of the Week" in *InformationWeek* on June 10; as a new and notable "Hot Site" by *USA Today* on June 11; and as the "Pick of the Web" in *Computer Week of Australia* on June 14. It was also noted in the *Marketing & Design Daily* and the *Newstips Electronic Editorial Bulletin* in the same week. In the following week, it began to appear as a reference resource on the intranets of several major corporations, including Ameritech, Dupont, Unisys, and Xerox. Shortly after, it was listed in the section on Electronic Commerce in A Business Researcher's Interest.

From the leads supplied by readers requesting the full report, references to the study were tracked over a period of 15 months from June 1996 through August 1997. Links to the summary page were found on diverse types of Web sites: Internet-related ventures such as JetForm, NetRevenue, Novaquest, Internet Plus (Australia), Bureau voor On-line Marketing (Netherlands), Noesis (Sweden), and 4thMedia (UK); public forums such as The Netpreneur Exchange, the Potomac KnowledgeWay Project, the Atlanta Electronic Commerce Forum, and Richard Seltzer's Chat Group; government projects such as CORDIS (European Community R&D Information System), and the New Zealand Government Web Support Group; course pages at universities such as Boston University, Northeastern University, Université Laval (Canada), and City University of London (UK); professional interest groups such as GISE (Global IS Education), Internet Bulletin for CPAs, and IOMA (Institute of Management and Administration). In the print media, references were found in industry research reports, articles and books such as CSC (1996), CTR (1997), Hayes (1997), and Thackara (1997).

Meanwhile, progress was made in our original project to include the evaluation and comparison of commercial Web sites worldwide. A comparative study with an additional 800 sites from 20 industries in Australia, England, France, Germany, Hong Kong, Italy, Singapore, and Taiwan was completed. The report (Ho 1997) was published in the scholarly electronic *Journal of Computer Mediated Communication* (JCMC) in June 1997. From then through August 1997, readers requesting a full report received an e-mail pointing them to the JCMC article. At the conclusion of our tracking project on August 31, the electronic form on the summary page was removed. A direct link to the published article is now provided.
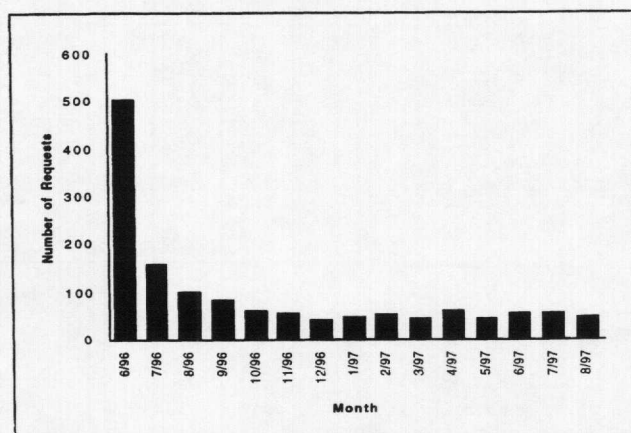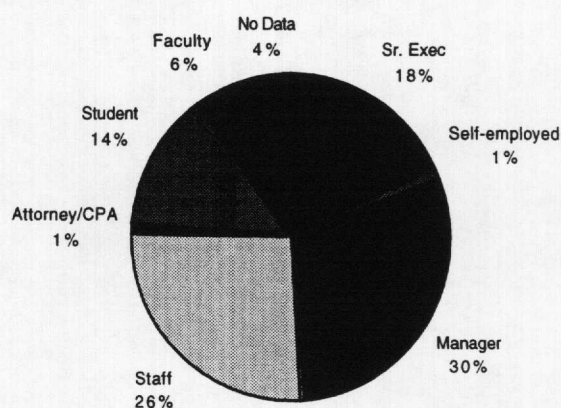
Figure 1. Number of Requests by Month

Figure 2. Distribution of Occupations (Total = 1417)

The Respondents

Over the 15 months, a counter embedded in the summary Web page registered 4,503 visits. A total of 1,417 requests transmitted through the electronic form were received. The distribution of the number of requests by month is charted in Figure 1. Apart from the U.S., which accounted for 1,044 requests, the remaining 373 originated from 45 countries. We use the term "country" loosely and generically here as the geographic designations actually included political entities such as special administrative region and principality.

They are listed alphabetically with their two-letter code (ISO 3166) and the number of requests: Austria (AT: 1), Australia (AU: 42), Belgium (BE: 8), Brazil (BR: 8), Canada (CA: 43), Chile (CL: 1), China (CN: 2), Costa Rica (CR: 1), Denmark (DK: 4), England (UK: 51), Finland (FI: 8), France (FR: 12), Germany (DE: 9), Greece (GR: 5), Hong Kong (HK: 13), India (IN:2), Indonesia (ID: 1), Ireland (IE: 5), Isreal (IL: 1), Italy (IT: 21), Jamaica (JM: 1), Japan (JP: 2), Korea (KR: 18), Malaysia (MY: 5), Malta (MT: 1), Monaco (MC: 1), Netherlands (NL: 21), New Zealand (NZ: 22), Nigeria (NI: 1), Norway (NO: 3), Philippines (PH: 1), Poland (PL: 4), Portugal (PT: 3), Russia (RU: 2), Spain (ES: 6), Singapore (SG: 13), South Africa (ZA: 6), Sweden (SE: 11), Switzerland (CH: 4), Taiwan (TW: 5), Thailand (TH: 1), Trinidad (TT: 1), Ukraine (UA: 1), Uruguay (UY: 1), and Venezuela (VE: 1).

From the entries of job title, position, or occupation, the following categories were identified.

Senior Executives: CEO, President, Vice President (VP), Managing Director (MD), CFO, CIO, Owner, Chairman, Dean.

Managers: Manager/Director/Supervisor/Head/Chief of Department/Division/Program.

Staff: Member of technical or administration staff, analyst, consultant, research associates.

Self-Employed: Only as specifically indicated.

Attorney/CPA: Only as specifically indicated.

Faculty: Lecturer, Professor (all ranks).

Student: Undergraduate, Graduate, MBA, Ph.D. Candidate.

The distribution of occupations for the 1,417 respondents is charted in Figure 2.

From the entries of company or organization or affiliation, the following categories of affiliation were identified.

Fortune 500 Company: On either the 1996 U.S. list or global list.

Mid/Large Business: Recognizable names and major privately held firms.

Small Business: Mostly Internet-related upstarts.

Publisher: Periodicals and books.

Government/Nonprofit

University

The distribution of affiliations for the 1,417 respondents is charted in Figure 3. To see which positions from what kind of organization we attracted, note that faculty and students were affiliated with universities; the self-employed had no affiliation; and attorneys and CPAs were few in number. It remains to find out where the senior executives, managers, and staff were from. The breakdown is cross-tabulated in Table 1.

The Sources of Reference

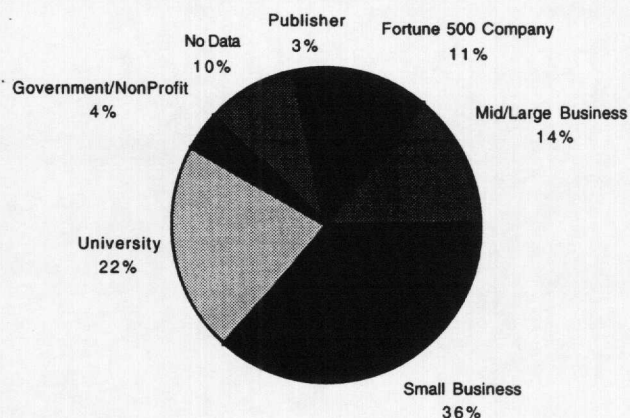From the myriad sources quoted, six major ones were identified:

Information Week: Summary page as "Web Site of the Week" on June 10, 1996.

USA Today: Summary page as new and notable "Hot Site" on June 11, 1996.

Word of Mouth: Mostly colleagues, coworkers, friend, classmates.

Figure 3. Distribution of Affiliations (Total = 1417)

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- No Data 10%
- Publisher 3%
- Fortune 500 Company 11%
- Government/NonProfit 4%
- Mid/Large Business 14%
- University 22%
- Small Business 36%

Table 1. Distribution of Three Occupations by Affiliation

	Sr. Exec.	Manager	Staff
Fortune 500 Company	2%	15%	20%
Mid/Large Business	10%	24%	18%
Small Business	80%	43%	33%
Government/NonProfit	3%	5%	7%
University	0%	5%	10%
Publisher	3%	4%	5%
No Data	2%	5%	7%
Total (100%) =	**256**	**421**	**374**

BRINT: Y. Malhotra's A Business Researcher's Interest reference site.

Search Engine: Mostly searches on e-commerce, online marketing, etc.

Web Links: All other links, including random surfing, and printed references to summary page

The growth in the number of requests by source of reference is illustrated in the cumulative chart in Figure 4.

To see where readers of various occupations found out about the study, we cross-tabulate the significant entries in Table 2. Similarly, the breakdown for requests from the US and abroad is shown in Table 3.

Observations

As the purpose of our project is to test the potential of an alternative to the conventional push-pull balance of disseminating research results, we need to first comment on the data not obtained. Of the 4,503 visits to the summary page, 1,417 resulted in a request for the full report. We can interpret the latter as the number of people who were interested enough to go through the process. The rest who did not, must still be somewhat interested initially. However, their reason not to follow through could be manifold:

i) From the summary, they realized it was not what they were looking for;

ii) They were content with the information provided in the summary;

iii) They were wary about giving out personal information; or

iv) They did not have an e-mail address.

Figure 4. Cumulative Number of Requests by Source of Reference

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Legend:
- Web Links
- Search Engine
- BRINT
- Word of Mouth
- USA Today
- InformationWeek

Table 2. Distribution of Five Occupations by Source of Reference

	Sr. Exec	Manager	Staff	Student	Faculty
InformationWeek	29%	34%	27%	4%	9%
USA Today	9%	7%	7%	3%	6%
BRINT	14%	18%	20%	41%	20%
Search Engine	8%	9%	11%	18%	11%
Word of Mouth	5%	6%	6%	6%	11%
Web Links	30%	21%	23%	19%	28%
No Data	5%	5%	6%	9%	14%
Total (100%) =	256	421	374	193	79

Table 3. Distribution of Domestic and Foreign Requests by Source of Reference

	US	Foreign
InformationWeek	31%	5%
USA Today	8%	3%
BRINT	16%	33%
Search Engine	9%	17%
Word of Mouth	6%	7%
Web Links	23%	24%
No Data	7%	11%
Total (100%) =	1044	373

In any case, we were not able to track this segment and learn about the demographics and source of reference.

Those who did respond were quite forthcoming. With a few exceptions, we sensed that omission of data was more inadvertent than intentional. Remarkably, the choice of words did matter. Initially, we used the term "affiliation" to subsume company, school, organization, etc. It turned out that many readers, mostly from non-English speaking countries, did not understand, or misunderstood. After noticing a number of defensive "None" and puzzled "?" we changed it to "company/organization". Even the question of "Where did you find out about this summary page?" drew a few incredulous "On the Internet, of course!"

We did not detect any case of gross misrepresentation (i.e., obvious fake.) As one indication, 99% of the return e-mails pointed to the full report going through. However, there were quite a few cases of undeliverable mail resulting from either typographical errors or logical confusion. Every effort was made to guess at the correction. For example, someone with an @ibm.net address (as a subscriber to the company's network service) might give it as @ibm.com (typically used for employees of the company).

We terminated the tracking project after 15 months for the following reason. Given that the data and the results were of a timely nature, we expected a transient phase for the requests to build up, a peak, and then a decline. It turned out that both the rapid growth and peaking all took place within the first month (June 1996). However, it was not clear whether the reference linkages would produce a steady state of requests, or total decay. After the three to five-month transient phase, the subsequent 10 to 12-month period did indicate a steady state with an average of 52 requests per month.

Although one-third of the 46 countries that we heard from generated only a single request, the global reach of the New Media is still impressive. The distribution of the number of requests by country provides the basis for further investigation into how well and willing various countries are connected and communicating with the rest of the world. The factors are both technological and cultural. For example, the development and deployment of the Internet infrastructure in Japan must be at least as advanced as in Korea. Yet, we received only two responses from Japan compared to eighteen from Korea. This may be an indication that Japan has a much more "close-knit" cyberculture than Korea.

Professionals (senior executives, managers, staff, attorneys, CPAs, self-employed) accounted for 76% of the requests, compared to 20% from academics (students and faculty.) Since almost all the reference sources stated clearly that this was academic research produced by a professor at a university, we have shown that at least the topic of the study managed to overcome any alienation on the part of the practitioners. A large variety of businesses were represented, with 154 requests from U.S.-based Fortune 500 or foreign Fortune Global 500 companies, 195 from midsize to large firms including advertising, banking, accounting, consulting, realty, and privately held companies, and 524 from small businesses, many of which were Internet-related upstarts. As the distinction between the last two categories was not well-defined, we subjectively classified all recognizable names or entities (e.g. banks, public utilities, hospitals) as mid/large. Note that these counts were for requests and not for distinct companies. Most multiple requests came from two dozen or so of the larger firms, and typically from different divisions or locations.

A total of 309 requests originated from 247 academic institutions: 193 from students, 79 from faculty, and 37 from staff and administrators. The relatively low number for faculty may be explained by some combination of the following factors:

i) Not many professors rely on the sources referencing our study.
ii) Not many professors are interested in business applications of the Web.
iii) Professors do not consider the type of study we conducted of academic interest.

Given that the thrust of our effort to publicize the report was practitioner oriented, the first factor was likely to be predominant. This is perhaps evidence of the flip side of the gap between academics and practice: professors tend not to

use business sources, just as practitioners tend not to read scholarly journals. As to the other two factors, academic interest in the published report can in principle be traced (to the extend of a reader's Internet domain category) in the Web site statistics for the electronic journal JCMC.

Next, we consider the effects of different reference sources. From the cumulative distribution of requests over time displayed in Figure 5, it is clear that the major initial impetus came from a very compact piece of publicity in *InformationWeek*, a periodical for business and technology managers, under its "Web Site of the Week" rubric (Scott 1996):

> "A University of Illinois project called 'Evaluating the World Wide Web: A Study of 1000 Commercial Sites,' may interest corporate Webmasters and marketers. It's at http://www.uic.edu/ ~jimho/"

This accounted for 291 of the 503 requests received in the first month. However, as typical of the news media, its effect was transitory. The referrals grew to 324 in the second month, 331 in the third, and remained at 347 by the end of the project. The situation was similar with the exposure in the online version of the national newspaper *USA Today* (Meddis, 1996):

> "Professor James K. Ho of the University of Illinois at Chicago studied 1,000 commercial Web sites to see how a potential customer might feel about their online value. Among the findings: Interactive transactions are still pretty primitive. Good reading for anyone interested in making serious money on the Web."

This generated 93 requests in the first month, and only eight more since. Note also from Table 2 that as a resource, *USA Today* was quite evenly distributed across occupations, while *InformationWeek* was concentrated on the business professionals.

The sources that sustained the steady growth in requests are all some form of Web links. The most significant of these is Yogesh Malhotra's "@BRINT: A Business Researchers's Interest" (www.brint.com), a so-called "meta-site" of references that has been highly acclaimed by the business and technology press worldwide. It is a delicate balancing act between being comprehensive and being selective. Many reference lists start out being useful until indiscriminate growth renders them unwieldy and strips them of value-adding information. On the other extreme, scholarly journals strive to be selective and forego timeliness and breadth of scope. What efforts such as @BRINT are accomplishing with the cost effectiveness of Web technology is to provide a middle ground through discerning editorial judgment. Their value is evidenced in their increasing use, especially by students (accounting for 41% of requests in that category in our case) and international users (33% of category). The following synopsis of our work is listed in the Electronic Commerce section of @BRINT:

> "A review of two thousand commercial Web sites from four continents affirms the critique that they are mostly variations and adaptations of conventional marketing and broadcasting channels. Few of them demonstrate any clear-cut strategies reflecting well articulated vision and commitment of top management."

Starting with the second month, @BRINT produced an average of 21 requests per month, with a maximum of 36, a minimum of 12, and a standard deviation of 7. The overall total was 289, which was remarkably close to the initial spur by *InformationWeek*.

Note that there is a high concentration of managers referred by *InformationWeek*, and students by @BRINT. Also, source of reference differs for U.S. and foreign requests. While *InformationWeek* and *USA Today* are primarily domestic references, @BRINT is a major resource for international readers.

The sources labeled Web Links in Figure 4 included all citations of the study on Web pages other than those mentioned above, leading to a total of 440 requests. Typical examples are already described in the Chronology of Events. It should be pointed out that many such links may reflect a secondary effect of the major sources, as when a manager included our study as a business resource in the company's Web site after learning about it from, say, *InformationWeek*. Even less distinctive were those referrals (numbering 156) attributed to search engines. We do not know whether such searches led the reader first to some other site (the more likely scenario) or directly to our study. In any case, we do know that collectively, the Web-based sources provided a steady stream of requests over time.

Discussion

Judging from the level of interest and the diversity of responses, our experiment to disseminate research results in the New Media appeared to be a success. The main lesson learned can best be explained in the context of the balance in the push-pull dynamics of information exchange. Conventional journal publication can be viewed as well established and organized push efforts, with the prestige and recognition of the journal being the driving force. An article in a journal is essentially broadcast to the journal's intended audience. Previously, it would be relatively difficult to reach potential readers otherwise. With the New Media, alternative approaches shifting the push-pull balance become feasible. A research report set up on the Web can in principle be browsed by anyone. From this totally passive mode of pull, one may consider incremental adjustments toward push. This was illustrated in the present case by the various forms of publicity the report received:

i) automatic indexing by search engines;
ii) submission to search engines for indexing;
iii) solicited publicity in the print media;

iv) unsolicited publicity in the print media;
v) unsolicited links on the Web;
vi) submission to meta-sites for linking.

A generic process to "publish" research results in the New Media is then:
I. Set up the report on the Web;
II. Select a mix of push options;
III. Track publicity and links generated.
IV. Track response and readership (optional).

Note that the unsolicited items within the mix of push options are not under the author's control. These are akin to literature citations in conventional publishing. The relative success in generating links and the eventual effectiveness of attracting readers will depend on the nature and topic of the underlying research work. Our case being on a topic concerning the Web itself might have been favored for attention. And less glamorous or newsworthy topics certainly cannot count on coverage by the popular press.

Yet our results demonstrated that it is the Web links that can provide sustained growth in readership. Many such links are becoming push agents that replace traditional gatekeepers of information and knowledge. These intermediaries in the New Media fill the spectrum between value-free agents such as librarians and value judges such as editors of scholarly journals. They select and maintain hyperlinks (e.g., lists of business resources on commercial Web sites) and meta-sites (e.g. @BRINT) of specialized professional interests, potentially covering all kinds of business research. Our results show that practitioners are tuning in to these outlets. They are responding to the lighter options of information pushing and ready to exercise their own judgment regarding relevance and usefulness of what they pull in. The lesson is that if professors can "read the writing on the Web" and broaden their customer base, there is an expanding network of practitioners to tap their expertise and to provide the impetus and feedback to foster academic research. If they care to make the relevant connections, the New Media can offer new outlets to bridge the gap between academic research and business practice well beyond the transplanting of printed journal papers to the digitized Web page.

As future research, a formal theoretical framework for the push-pull of information dynamics will be useful in further comparison of alternative options in the dissemination of research results. This may lead to breakthroughs in academic evaluation. For example, if academics claim to embrace relevance, then perhaps traffic and links to one's Web site will eventually count as much as citations in the scholarly literature.

Appendix A. The purpose-value framework with one example of Web site feature or function in each catagory:

PURPOSE/VALUE	Promotion	Provision	Processing
Timely	items on sale	job vacancies	online auctions
Custom	product search	custom report	custom orders
Logistic	on-line catalog	financial reports	delivery tracking
Sensational	contests	games	"surprise" discounts

Appendix B. List of 40 industries:

Accounting	Advertising	Aerospace	Airline
Apparel/Fashion	Automobile	Banking	Beverage
Brokerage	Chemicals	Computers	Construction(Materials)
Construction(Services)	Cosmetics	Data Services	Electronics
Food	Furniture	Healthcare	Hotel/Resorts
Insurance	Internet Services	Jewelry	Newspaper/Magazines
Mining/Exploration	Movie/TV	Music	Office Supplies
Oil and Gas	Paper	Pharmaceutical	Publishing
Real Estate	Software	Sports	Telecommunication
Textile	Travel	Trucking/Shipping	Wine/Spirit

Appendix C. 40 business and IT-related publications:

Atlanta Journal & Constitution, Boston Globe, Business Research's Interests, Business Week, Byte, Chicago Tribune, Commercial Sites Index, Computerworld, Crain Electronic Media, CyberSkeptic's Guide to Research on the Internet, Datamation, Digital N & R, Economists, E-in-C Digital News & Review, Entrepreneur, Fast Company, Financial World, Forbes, Fortune, Global Internet News Agency, Inc, Informationweek, Library of Congress Internet Statistics, Los Angeles Times, Nation's Business, NET, Newsweek, New York Times, New York Times Syndicate, PC, PC Week, PC World, Success, USA Today, Virtual City, Wall Street & Technology, Wall Street Journal, Webmaster, WebWeek, Working Women, Worth.

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