Dear Colleagues,

Libraries have always been committed to understanding user needs and behavior. Collection development and acquisitions have long been founded on understanding the objectives of one's institution and the needs of its faculty and researchers. Yet with the explosion in electronic access to research, more and more librarians lament that it's harder to know the users because they come less and less to the library. The flip side to this is that the technology itself offers opportunities to understand user behavior at a level of detail unthinkable just a decade ago.

In this issue of Library Connect, we share experiences from librarians and Elsevier product developers, all focused on understanding the user. In an interview with the Korea Advanced Institute of Science and Technology (KAIST), Director Ho Nam Choi talks about his institute’s focus on “User-Centered Information Services” and the use of usage data and CRM technology to facilitate development of the National Digital Science Library. Elsevier’s Marc Krellenstein provides a glimpse of the potential to go far beyond searching via new technology in text mining. The Elsevier Research Office offers insights on user preferences versus librarians’ attitudes towards Google.

But what resonates loudly throughout this issue, beyond the power of the technology, usage mining and research surveys, is the value of face-to-face communication. Amy Knapp from the University of Pittsburgh shares her experience of working directly with researchers as a Scopus development partner. In our “Librarians Speak Up” feature, librarians underscore how involvement in committees, going to classrooms, and old-fashioned observance still reign.

In my role in Technology supporting Product Development, first for Elsevier Science and Technology and now for Elsevier Health Sciences, we’ve always recognized the need for a balance of technology and human interaction. Over the years, we’ve involved hundreds of librarians, researchers and users in our product development efforts through surveys, usability studies and focus groups. As you can see in this issue of Library Connect, Elsevier’s partnerships with libraries and librarians worldwide continue to grow and benefit all involved. Let me take this opportunity to thank our customers for their contributions to our ongoing and collaborative efforts to make our products work well for you.

Sincerely,
Jonathan Clark
Executive Vice President, Technology
Elsevier Health Sciences, Philadelphia, PA, USA

New Library Connect Pamphlets

New Library Connect pamphlets were published in May and June:

- Pamphlet Number 4: Ways to Use Journals Articles Published by Elsevier.
- Pamphlet Number 5: How to Design Library Web Sites to Maximize Usability. See page 10 for more information.

Email libraryconnect@elsevier.com for your copies of the latest pamphlets or pick them up at upcoming library shows and Library Connect events. PDFs are available at www.elsevier.com/locate/libraryconnect
In 1999 I first met Mr. Ho Nam Choi, Information Development Team Director of KAIST (Korea Advanced Institute of Science and Technology). The project has a motto of “User-Centered Information Services.” Can you tell us what this means?

Ho Nam Choi: Yes, one of the features of the library that I was impressed with is its ability to inform the user of both the format and location of resources. Can you tell us why this feature is important?

Ho Nam Choi: Not every user in every location may be entitled to all digital content. When a user logs into NDSL and locates an article, the system tells them 1) whether the article is available electronically, 2) whether the user is entitled to that electronic content, and 3) if it is not available electronically, where the physical copy is located and ILL options. In this way, NDSL is able to fulfill any need. This is a true one-stop shop service. The user never has to leave NDSL.

LC: What is the project's goal?

Ho Nam Choi: We wanted to expand the access of information around the country and enhance the usability of digital content. Before NDSL, Korean researchers had no systematic services for information, especially for foreign (non-Korean) science content.

LC: What is the project's motto?

Ho Nam Choi: NDSL targeted higher education users with the goal to maximize their usage. The system automatically recognizes users and serves them individually profiled content; it knows their entitlements, their catalogs, etc. Librarians working at member institutions continually update the material in the main database in order to provide a true user-centered experience.

LC: What kind of challenges do you come across in getting to know your users?

Ho Nam Choi: It is very challenging. User requirements are often contrary to each other. It’s hard to determine what functions to develop. We record functionality requests and it is only when we develop it. And, as I said, the usage data helps us to notice new functionality requirements.

LC: What is the importance of usability testing?

Ho Nam Choi: Very important. When we initially developed the interface, we hired KAIST students to test all the functionality repeatedly. To develop for the future, we use the cumulative usage data and analyze statistics monthly to spot usage trends. We break down this data to determine the next stage of development and future functionality.

LC: Please tell us about the National Digital Science Library.

Ho Nam Choi: The first phase of the National Digital Science Library, known as NDSL, commenced six years ago in 1998. That first phase is now completed and it is now in its second phase of operation. The budget is fully funded by the Korean government and it is notable that this is part of the regular ongoing operating budget; that is to say, it is not just a short-term project-based budget.

LC: Were there any particular issues you came across in incorporating English and Korean language materials?

Ho Nam Choi: NDSL only houses foreign materials at this time, although they have plans to include Korean and other language materials in the future. We do employ both English and Korean in the interface. Targeting highly educated users who do speak English, we use the “best expression” to convey the intended meaning, be it in Korean or English.

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LC: That's a very intense process. Is there an example of where you assumed users would want one thing, and in the testing you found a totally different response?

Ho Nam Choi: Oh, yes, let me tell you one example. In the original user requirements, we developed the functionality for searching “Journal title by publisher” but we recently removed that functionality after we found that there was very little use of this. We realized that probably only the librarians used that functionality!

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I feel that 30 years or more of back files are needed. 53.5% agree that they would very much like to access PDF is the most preferred data format in which to access. Results show a significant increase in the number of Abstracting and Indexing databases, future use, remote access preferences with regard to full-text article format, use of full-text articles, accounting for over 90%, with 60% citing "prints out neatly" as the top reason. Partners in Development: Scopus Makes Connections Through User-Centered Design

Amy Knapp, Assistant University Librarian, University Library System, University of Pittsburgh, PA, USA

Librarians are well aware that as the rate of information dissemination continues to explode, scientists and researchers increasingly require easy access to an ever-expanding world of resources in order to accomplish their work. Researchers use scientific information to develop research agendas, stay current with developments in their own and related fields, work collaboratively within their own institutions and with colleagues around the world, critically analyze the work of others, and to contribute to their teaching efforts. They expect the systems that serve them to be readily accessible (on campus and remotely), reliable and comprehensive. Most importantly, they expect them to be intuitive and easy to use, such that little or no assistance with searching is required.

"Personally, this experience has given me a greater appreciation for the complexity of the job of creating a database that does what users want."

So, the challenge for librarians is to find an information system that is robust enough to provide researchers access to the universe of resources, while also being designed with the expectations of independent users in mind. Designing a system that makes finding relevant information quick and easy requires a detailed understanding of how researchers approach an information retrieval task, of the steps they follow to locate and evaluate information. Gaining this sort of understanding of research behavior is not an easy task and one that cannot be done in isolation. Building a bibliographic system which users will be able to rely on and use efficiently on their own requires partnership between information system developers, librarians and the researchers themselves.

Approximately two years ago, the University Library System of the University of Pittsburgh became a development partner with Elsevier to work on a product called Scopus. The goal of this partnership is to work collaboratively to develop a bibliographic and navigation system to meet the information retrieval needs of researchers at academic institutions worldwide. The Library System of Pittsburgh was just one of 21 research institutions worldwide participating in multiple rounds of on-site and remote testing of various concepts and functional prototypes of the system. At the outset, our role and benefits for our library were probably not as clear as they've become. We were anxious to partner in developing a research tool that we could provide to our users, but I don't think we had any notion of the additional knowledge we'd gain through this project.

Anyone interested in receiving more information about the survey should contact: Yoshito Itoh, The Chairman, E-Journal Task Force, Director, The Nagoya University Library, Furo-cho, Chikusa-ku, 464-8601, Japan
What did we as a library get from this partnership? Well, part of my role has been to work as the liaison between Elsevier and the University Library System, identifying people for user studies and librarians for small focus groups, as well as working with our systems people to involve them in the process. It’s been an interesting experience for us, and it’s also given me an opportunity to work closely with end users who’ve been involved in this product, and to get a good sense from them of what they’re looking for. I’ve gained a much better understanding of how researchers work online, how they evaluate information, and what our users are looking for from their library in what has become an increasingly online, remote environment.

The model developed for the creation of this information system — referred to as “user-centered design” — seems to have worked very well, and has been a positive experience for all involved. The verbal and behavioral feedback from user test sessions has built up a detailed understanding of scientists’ information needs, tasks and workflow. This understanding has formed and is forming the fundamental basis for content, functionality and design decisions for the Scopus system. As user feedback was built into new versions of the system, users involved in tests could see their suggestions coming alive, and I think this gave them a very real sense of connection with the process. Comments such as “Wow, they really listened to me… Wow, they really incorporated my ideas,” have not been infrequent.

We’ve also gained insight into how researchers approach information retrieval tasks. Results of the user studies indicated many users approach tasks in the same fundamental ways. In general, we found the preferred behavior of most researchers seems to be to start broadly, review the set retrieved, and then refine. We’ve found researchers want to use a system like Scopus to:

- Find new articles in their disciplines or subject fields
- Find author-related information — articles by a specific author or related to the author, or information to help evaluate an author
- Stay up-to-date — what’s new since their last search, what might be relevant
- Get an overview of a new subject field — who are the important authors, journals, institutions/research groups.

A tremendous amount of information on user behavior has been gathered during the course of Scopus’ development. Some observations may not seem particularly surprising to those of us who have worked closely with researchers in libraries, but what is really significant is that this information is being used to create a system designed to meet the information retrieval needs of these researchers.

Personally, this experience has given me a greater appreciation for the complexity of the job of creating a database that does what users want. My hope is that this knowledge of users’ motivations and online work habits will contribute to an increased awareness of researchers’ information retrieval preferences, both in our library and at Elsevier.

After all, the more we know about how our users approach and solve information tasks the better able we are to help them. This has become especially important now, when increasingly we don’t often meet these users face-to-face in a physical library.

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### Scopus: Getting It So It “Just Feels Right”

**Frans Heeman, User Centered Design Group, Elsevier, Amsterdam, The Netherlands**

Search behavior involves interaction at various cognitive, psychological and physiological levels. At the highest level, a user has a goal in mind, for example finding an overview article in a new research field. This goal is achieved through various lower-level tasks, such as typing in keywords that characterize that research field and scanning subsequent results to evaluate their relevance. At yet a lower level, properties of how the eye and the brain work determine how easy it is for the user to comprehend where to type in the keywords, how quickly results can be scanned, and how much cognitive effort it takes to do all this and still stay focused on the high-level goal.

> What we hope to have achieved is that Scopus “just feels right” to users, because it naturally fits their way of working and it takes them minimal effort to achieve their goals.

So, the design process all starts with understanding the goals and tasks of a typical user. This determines what needs to get visual priority in the user interface, what should appear “above the fold;” what default settings are appropriate, etc. For Scopus we have built up this understanding by doing fifteen (and counting) rounds of user tests, in which we use prototypes to test at a conceptual level (Is this the right feature to offer?) and at a usability level (Does the design of this feature result in error-free and efficient interaction?). For the actual visual design, we use our knowledge of how the brain and eye scan and process information.

What we hope to achieve is that Scopus “just feels right” to users, because it naturally fits their way of working and it takes them minimal effort to achieve their goals. How will we know when we have succeeded? Well, when the user no longer notices the interface design but just can get work done, efficiently, effectively, and even with enjoyment.

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### Some facts about Scopus’ “user-centered design”

- 2-year development cycle
- 5 full-time User Centered Design Group staff, including a cognitive psychologist
- 15 rounds of user test sessions in 21 institutions, across 4 continents
- Involving over 300 researchers and librarians

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### Applying the User Centered Design Process to the Development of a Large Bibliographic Navigation Tool: A partnership between developer and librarian

To request your copy, email libraryconnect@elsevier.com

A PDF is available at www.elsevier.com/librarians
Googled Science

Steve Carroll, Research Director, Research Office, Elsevier, Oxford, UK

Elsevier’s Research Office utilizes feedback from librarian customers and end-users to improve our services for you. Recently, you’ve told us some interesting things about the use of Google when searching for scientific information.

1. Scientists and Google

In January 2004, Elsevier conducted a global survey of 4,062 scientists (commissioned through an independent research agency). It was a repeat wave of a study aimed at evaluating and targeting key areas for continued improvement for ScienceDirect. As part of this survey we asked the following question.

Q: How strongly do you agree or disagree with the following statement? “When searching for scientific information, Google satisfies my searching needs.”

In total, 49% of scientists agreed “When searching for scientific information, Google satisfies my searching needs.” Younger scientists were generally as likely to agree with this statement as more senior scientists. The regional and subject area results revealed some interesting trends.

% of scientists who AGREE (either strongly agree or agree) that “When searching for scientific information, Google satisfies my searching needs.”

- The highest levels of agreement were in Asia Pacific, and among scientists within the physical sciences, with the most marked segment being scientists engaged in the physical sciences within Asia Pacific — 70% of these scientists agreed with the statement.

2. Librarians and Google

From November 2003 to January 2004, we commissioned an independent survey of 800 librarians via local-language telephone interviews. The main purpose of this survey was to help improve the service librarians receive through ScienceDirect. However, we also took this opportunity to measure an issue related to Google.

We often get feedback from librarians who are concerned that their end-users “rely too much on Google.” For example, when Google is used in preference to expert abstracting and indexing services provided through the library. To measure this concern, we asked to what extent librarians agreed or disagreed with the statement: “I am concerned that my end users rely too much on Google.” Results are shown below.

Q: I am concerned that my end users rely too much on Google.

The results showed 63% of librarians agreed with the statement “I am concerned that my end users rely too much on Google.” However, as with the end-users, the regional differences were revealing.

% of librarians who AGREE (either strongly agree or agree) that “I am concerned that my end users rely too much on Google”

- Librarians based in the Americas (mainly the US) showed most “concern.” 76% of these librarians agreed that they were concerned about their users relying too much on Google.
- In contrast, 38% of librarians in Asia Pacific agreed with this concern. This reflects results from the survey of scientists, which showed scientists based in Asia Pacific, were most likely to agree: “When searching for scientific information, Google satisfies my searching needs.”

Over the last few years you may have been interviewed about services you receive from Elsevier. Thank you for your help and time! This feedback is very valuable to us. It lets us know what we are doing well, and — more importantly — where we should be improving. It’s also an opportunity for us to assess general industry trends and share these with you through Library Connect. If you would like further information on our studies, or have any suggestions to how we can improve the way we share results, please contact libraryconnect@elsevier.com.
Text Mining: It’s More Exciting Than It Sounds
Marc Krellenstein, VP, Search and Discovery Technology, Elsevier, Burlington, MA, USA

It’s rare that a name for a hot technology trend undersells its full potential, but that’s surely the case for what is known as text mining. Viewed narrowly, text mining is about automatically extracting, from unstructured text documents, all instances, or entities, of a certain type. For example, all of the drugs discussed — penicillin, tetracycline, aspirin and so on. But an extracted entity could itself be a specific kind of relationship among simpler entities, e.g., that penicillin treats pneumonia. This is more like extracting a fact than a simple object or concept, and such text mining is sometimes referred to as “fact extraction.”

One could say that a person’s comprehension of reading a document is also simply the extraction of all the relevant concepts and facts in it. In truth, both text mining and human reading comprehension are better viewed as a deeper effort to extract the meaning contained in a document — what the items and concepts are, what the connections are among them, what’s being said about them. In the online world text mining helps us go beyond searching to try to represent the meaning of documents — to summarize, show relationships and answer complex questions. Text mining can uncover completed unexpected relationships in a way that would be almost impossible to determine manually. The Columbia University GeneWays project, for example, has successfully extracted over a million unique interactions from relatively limited journal content, and several large pharmaceutical companies already use text mining to try to keep up with a biological literature that grows faster than the ability of researchers to read it.

Text mining in a bit more detail

As mentioned, an example of text mining might be extracting all of the instances of the type drug — penicillin, tetracycline, aspirin, etc. — from a given text corpus. The results of such an extraction could be a simple list of all the drugs found, perhaps with the number of times each drug was mentioned.

Adding metadata increases the usefulness of information

More usefully, the extraction might result in new metadata being attached to each document in the corpus, indicating each drug found and perhaps associated information such as its location in the document. Such metadata might look like this in XML:

```
<drug offset = 398>aspirin</drug>
<drug offset = 213>penicillin</drug>
<drug offset = 124>tetracycline</drug>
<drug offset = 86>penicillin</drug>
```

By retaining the association between individual documents and drugs we can still produce a list of drugs but can do other things as well, such as creating a new, “synthetic” document that includes a few lines of text around each occurrence of a drug name in the corpus, effectively creating a drug summary for the corpus.

Using rules and controlled vocabularies

To accomplish such mining we might start with relevant controlled vocabularies, e.g., a list of all known drugs, and simply look for occurrences of them in the text. Text mining software enhances such matching with various rules to find occurrences regardless of spacing, capitalization, misspellings, intervening words, alternative word forms, etc. In addition, pattern matching rules and natural language processing can uncover new terms not included in the vocabularies (e.g., newly named drugs) by looking at how the names are constructed and at the contexts in which they’re used.

Adding relationships makes things more interesting

Things get more interesting when multiple entities are extracted from a corpus — e.g., all the drugs and all the diseases — and particular relationships between the entities are identified and extracted, such as when a drug is a treatment for a disease or when a drug might trigger a disease as a side effect. Once again, the mining could result in marking up individual documents with the occurrences of such discovered relationships. For example:

```
<drug-treats-disease>
  <drug offset=213>penicillin</drug>
  <disease offset = 124>pneumonia</disease>
</drug-treats-disease>

<drug-causes-disease>
  <drug offset=86>penicillin</drug>
  <disease offset = 268>anaphylactic shock</disease>
</drug-causes-disease>
```

Natural language processing aids the identification of relationships

Identifying relationships requires more extensive natural language processing to discover that two entities are not simply mentioned together but are connected by the specified relationship. This processing includes lists of appropriate verbs or other word forms specifying the particular connection and more complex sentence analysis to recognize the relationship and determine that it actually exists (as opposed to, for example, its negation, which is still a relationship but a different one). This includes dealing with different tenses and voices, identifying and separating descriptive phrases and resolving indirect references (known as anaphora). An example of the last is uncovering the causal relationship with penicillin and shock in the following sentence, in which the word ‘penicillin’ is connected to shock only indirectly through a pronoun:

Penicillin treatment is not without risks. It can trigger anaphylactic shock in allergic individuals.

Innovative new tools allow users to analyze and visualize data

Opposite is a diagram produced by an analytic tool from ClearForest that takes mined, extracted data as its input and allows a user to analyze and visualize that data in various ways. This particular diagram indicates whether a significant relationship of any kind is present between all the various
genes (and related biological entities) and diseases mentioned in some 25,000 Elsevier journal abstracts mined as part of a pilot project. It also includes two sub-diagrams that are displayed when a particular entity — the gene p53 in this case — is expanded and viewed to see, first, all the genes and diseases related to it, and, second, all the organisms in which it is studied. The documentary evidence is displayed when one clicks on the bar indicating a relationship between two entities (as shown in the screenshot below).

Commercial text mining products from companies such as Inxight (www.inxight.com) or ClearForest (www.clearforest.com) often come with standard rule sets (or “recognizers”) for identifying entities such as people and companies, as well as basic relationships between them — a company buying/divesting/suing another company, or a person holding a certain position within a company. And while current text mining efforts are certainly not perfect, perfection is not necessarily needed (or achieved by people either). Occasional, often obvious mistakes can sometimes be ignored, and failing to find something in one case may be compensated for by finding it mentioned somewhere else.

Some more complex applications of text mining

More complex text mining moves beyond relatively simple entities and relationships to complex or composite entities such as events, or evaluative descriptions. The US government makes use of text mining to look for connections between people and events as part of its investigations into terrorist activities, where an event entity could itself be a complex relationship among simpler entities such as location, date, person(s) and associated event type (e.g., an explosion). IBM’s WebFountain, a service for mining the Internet, is being used to identify “reputations” of companies by uncovering positive or negative descriptions of them.

Modelling human comprehension

Modelling human comprehension has long been a goal of research in artificial intelligence. The success of text mining work and the natural language processing tools developed for it seems due to the fact that it proceeds from practical efforts to identify specific information. Each specific recognizer is necessarily limited, but basic building blocks — for example, recognizing drugs, people or events — can be reused. There is no particular limit to what the paradigm may be applied to — experimental methods? refuted theories? government policies? — as long as specific needed linguistic tools are there or can be developed.

Humans don’t seem to require as much specialized preparation for understanding something but perhaps that is because we have already built up such a large repertoire of things we do understand. Certainly there are times when we will not understand something unless we first educate ourselves, building up from the basics.

What does the future hold?

Text mining represents one of the most practical and productive uses of natural language processing methods (and other AI techniques) today, and the most successful paradigm to date to simulate human comprehension. Its continued development is likely to stimulate additional focused, useful research in “natural language” and other technologies that support it. Most importantly though, it puts us on a path where we can proceed to automatically extract and accumulate the sort of knowledge that has only been possible to do by hand (or, more accurately, by eye and brain). This will allow publishers and libraries to offer services that dramatically increase the value of the content they offer.

As information continues to expand at rates greater than the processing ability of any one person, or perhaps of all persons, text mining may prove indispensable to support continued rapid advances in our understanding of the world.

Password-Guessing: A Threat to Security?

Back in March, Elsevier’s EDIT (Elsevier Dayton Information Technology) team noticed a number of attempts at password-guessing involving ScienceDirect accounts. Further investigation revealed that in most cases password-guessing occurred where generic passwords such as library, science, sciencedirect, or password, were being used.

As a short-term measure, all ScienceDirect user IDs with compromised passwords had their passwords reset and customers were informed by Elsevier eCustomer Service.

To ensure future passwords are more secure, a new ScienceDirect system will be implemented making it compulsory for passwords to be alphanumeric and contain more than six digits.

In the meantime please try to avoid generic and obvious passwords like: password, science, sciencedirect, your own username or library. Thank you.
Like many of the world’s national libraries, the National Library of New Zealand, Te Puna Mātauranga o Aotearoa, is exploring and imagining what the next generation of our library will look like. It has been a year of tremendous change for us. The passing of the National Library of New Zealand Te Puna Mātauranga o Aotearoa Act 2003 has provided us with an opportunity to think strategically about the library of the future.

“We are committed to developing a world-leading, next-generation national library, but we cannot and will not do this without understanding the hearts and minds and aspirations of New Zealanders. So, we will soon engage New Zealanders from all walks of life, inviting them to imagine what they want for their National Library. We have given ourselves four years to complete this transformation.

“It’s always a continuing conversation and we continue to listen and converse with our various communities. The messages from the library and information profession in New Zealand are clear and we are in the process of responding to their needs. Our EPIC project has provided access to 16,000 online journals to all libraries at minimal cost. Another pilot project, Online Librarian, provides online support for school kids looking for quality information on the Internet and complements and enriches the services already provided by school and public libraries.

Of the many ways to get to know users, the most rewarding and valuable for me is still the face-to-face encounter with individual readers at the point of need. Working in Collections Management, it’s a high priority for me to put in a few hours each week on the main reference desk in our Library, and also to staff the virtual online reference service on a regular basis. Of course, there are any number of other ways to get to know users — the Library surveys our users regularly and makes sure our results are statistically valid, we hold meetings and invite community input, host receptions for faculty members, we sit on campus committees, go into classrooms and offer course-integrated instruction — all of that. But there’s really nothing to compare with meeting with a reader who is actually seeking research material, and coming to ask for assistance in doing so.

Our emphasis is on embedding feedback mechanisms and opportunities into the University’s normal structures with a big focus on partnership with faculty. The primary role of some of my team members is as FICs — Faculty Information Consultants. They are my eyes and ears within the faculty and the faculty’s champion within the LIS. FICs regularly attend faculty meetings — these are also attended by student reps — and this offers a way for us to officially receive feedback and report on service issues to our users. This approach also happens at a senior level, as Dean I sit on the University’s Academic Committees.

Our accountability is strong in terms of our measures to demonstrate that we are meeting student need and making the best use of resources. We regularly collect and analyze data on service and usage patterns and monitor trends. It’s not rocket science; it’s about being systematic. Every year the University also carries out a major student survey in which we include a number of questions.
3. Can you give us some examples of how you have responded to user need?
We have a diverse student population, in terms of age, level and mode of study. In the UK most students have some sort of employment to support tuition and living costs. Our 24/7 service availability and our approach of engendering a self-help and self-service culture gives them as much flexibility as possible to use resources at a time to suit them. We have 3 steps to help; firstly help yourself, secondly visit the helpdesk (or ring the helpline) and thirdly ask a specialist. With limited staffing resources, we’ve given priority to using staff time for user support with an emphasis on adding value. At the integrated helpdesk users are supported by staff who are experts in our facilities and services whereas our information, computing and media professionals focus on providing in-depth help by appointment and on the delivery of programmes of skills development sessions for students. We try to embed the culture within all customer interactions like these of gathering feedback and knowledge about our users and their needs, asking them what they are doing, why they need specific services and what they think they’ll want to do next.

4. Are there any segments of your user base that it is particularly hard to get to know?
In a university environment structures exist providing interfaces with all groups within a defined community, so no one is outside that framework. Success depends on building partnerships with the academic faculties in every section of the university and making them work.

5. What are your plans for the future?
It’s all about predicting changes to meet expectations. To do this we have to look to what is going on in the rest of the world, what people expect now from technologies they use. What commercial organizations like Amazon.com are doing, for example.

The thing we see coming down the track is demand for personalized, customized support and services. All our students have an individual portal giving them immediate access to their course modules and discipline areas within the virtual learning environment. We are working to map our information resources collections, print and digital, to these study programs and match them to student needs. Not in a way that would discourage them from reading more widely or researching in-depth, but by giving them a step-by-step approach to get to things of most relevance first.

We have to do this in the context that our students expect – we live with the Google generation and we have to learn to think as they do – I think it’s really exciting.
Success Story Canada: Québec Universities Hold Local-Language Training Seminars

With snow still on the ground in late March, Olivier Diesnis, Account Development Manager for Europe, Middle East and Africa, brought local-language ScienceDirect training to Québec. Canada's Account Manager, Adam Chiaino, explained, "ScienceDirect training in French is something our librarian customers in Québec have been requesting for some time, so it was great to be able to provide them with this service; feedback to date has been very positive."

More than 75 librarians attended trainings at Université de Montreal, Université de Laval, Université de Québec à Trois-Rivières and Université de Sherbrooke. For many of these librarians, this was their first look at ScienceDirect from a French perspective.

Librarians were thrilled with materials and training provided, and all agreed that without the language barrier attendees were far more likely to ask questions and engage in the training. Participants at Université de Montreal remarked, "This session was much more animated than the usual English session."

Success Story Lebanon: American University of Beirut Implements a Student Ambassador Program

The American University of Beirut Saab Medical Library (SML) is one of 21 development partners for Scopus. Hilda T. Nassar, Medical Library Director, has been working with Scopus Marketing Managers Pierre Van Doorn and Sandra Power to promote availability of the Scopus beta version to SML researchers, students and teaching staff. One innovative approach has been to appoint two Student Ambassadors (SAMs) to help the medical librarians — and this has proved to be a fun and effective program.

"Scopus has two student ambassadors at AUB, Steven Chalouhi and Eyad El-Dahouk. They are so enthusiastic and so brilliant. Thanks to their hard work our campus is full of Scopus brochures and posters advertising seminars. Every week the student ambassadors give a seminar on Scopus, they even tailor these seminars to the need of the users — professors, students and researchers," explains Hilda. "This program is so effective. The idea of selecting student ambassadors to promote Scopus on campus is a brilliant one. They are a great help to the medical librarians in promoting Scopus. So far, Scopus has had an impressive impact on AUB. I can see how effective the Student Ambassador Program is and I have even thought of selecting them to become Saab Medical Library ambassadors!"

How can I improve the usability of my Web site?

There are so many facets to usability that it is important to have a framework for assessing usability of a Web site. This aids prioritization of improvements and gives an indication of where to start. We use a technique called heuristic evaluation to identify positive and negative factors influencing usability of a Web site.

We look at these factors under the following headings:
- Consistency
- Orientation and Navigation
- Hypertext and Linking
- Page Layout
- Aesthetics and Graphics
- Flexibility and Efficiency of Use
- Match Between System and User Activities
- Accessibility

Since 2003, we've conducted usability reviews of several academic library Web sites. Our library customers have let us know these usability reviews deliver real value. Given their appreciation and the fact that we can only provide a small number of in-depth reviews per year, we have put together a new Library Connect practical-assistance pamphlet, "How to Design Library Web Sites to Maximize Usability," to take a closer look at the process we use and to help you become your own usability expert. A PDF is available at www.elsevier.com/locate/libraryconnect.
ScienceDirect Usage Reports

We thought you might be interested to hear a bit about how ScienceDirect usage reports are being used. We monitor usage of the usage reports Web site and use this data to track the most popular reports and to help guide future developments.

Top Five ScienceDirect Usage Reports*

1. Report 1A: Number of Successful Full-Text Article Requests by Month and Journal 13,682
2. Report 1B: Number of Successful Full-Text Article Requests by Entitlement, Month and Journal 5,680
3. Report 2A: General Overview 5,646
4. Report 4A: Total Searches and Sessions by Month for ScienceDirect 4,191
5. Report 3A: Document Usage by File Type 3,390

*Based on usage from January to May, 2004. Usage numbers shown above indicate the number of times a report was accessed from the site during this period.

ScienceDirect offers three COUNTER-compliant reports. The third, “Report 4b. Total Searches and Sessions by Month and Database,” follows closely in terms of usage, coming in at number seven.

Did you know?

Usage reports are now available for Elsevier Book Series and Elsevier Reference Works on ScienceDirect.

Did you know?

Customers can sign up to receive an alert as new reports become available on the usage reports site. Our data indicates greater usage on reports from customers receiving alerts.

More resources for customers appear at www.info.sciencedirect.com/librarian_help/usage_reports/

http://usagereports.elsevier.com

Policies in Action: Author Posting of Final Papers to Public Web Sites

Elsevier has a long tradition of liberal copyright policies and for many years has permitted both the posting of preprints on public servers and the posting of final papers as accepted on secure internal servers. Now authors of papers published in an Elsevier journal may also post their final version, as accepted by the journal, publicly on their personal Web site or their institutions’ Web sites (including their institutional repository). The “final version” is the author’s Word (or TeX or similar word processing) file, which can be updated by the author to incorporate changes made during the peer-review and editing processes.

Authors do not need to ask Elsevier’s permission to do this. They need to include the full citation of the published article (once known) and a link to the home page of the journal on ScienceDirect or, better, the DOI of the published article.

The posting cannot be for commercial purposes (such as systematic distribution or creating links for customers to articles) and it is not permitted to post to Web sites outside of their institution (other than their own personal Web page). Similarly, posting of the journal's PDF or HTML files is not permitted and any exception would require permission from Elsevier. We believe is important to preserve the integrity of the official record of publication at the publisher. Therefore, the final published version as it appears in the journal (PDF or HTML) will continue to be available only on an Elsevier site.

As of June, 2004, there are no Elsevier journal exceptions to this policy. Cell Press and The Lancet have policies that differ as to preprints, as they will not consider for publication articles that have already been posted publicly. This is a rule agreed upon by The International Committee of Medical Journal Editors. However, both Cell and The Lancet welcome this policy on post-publication posting and will follow it for their journals.

If you have questions, please contact Frances Rothwell, Global Rights and Permissions, f.rothwell@elsevier.com. This policy is also available online at www.elsevier.com/librarians

Ever wondered what it’s like to be a CAT?

Elsevier’s Customers and Technology Program (CAT) focuses on medium to long-term issues in the application of technology. In partnership with library customers we explore perspectives on innovation and share business and customer preoccupations and concerns.

We want to be sure that our products and services truly meet the future needs of the scientific community we serve. We need librarians’ help to do that. CAT serves as a catalyst in bringing together customers and Elsevier experts to test new technologies, share ideas and identify new products and services.

If you’re interested in becoming part of this initiative then please contact Geoff Adams, Director, IT Solutions, Elsevier, New York, USA; g.adams@elsevier.com
Searching for Science: The Development of Scirus

Ammy Vogtländer, Senior Product Manager, Scirus, Elsevier, Amsterdam, The Netherlands

The emergence of the World Wide Web has dramatically changed the environment in which researchers and students operate. Academic and government institutes, societies, publishers and individuals, put in tremendous efforts to make their information available online. As a result, the number of information sources has exploded. This influx of information has made it increasingly difficult to find the most relevant documents when searching on the Web. Today’s Web search engines index over six billion pages, and still don’t manage to cover all parts of the Web. One might expect users to look to the library to help guide them through this overwhelming amount of information. Yet, the opposite is true. Numerous studies show that when looking for scholarly information, users increasingly turn to the simplest search tool available: Web search engines. Library portals are their second choice.

So what makes Web search engines so compelling to users? The first most obvious reason is that Web search engines are very easy to use and extremely accessible. Users can access Web search engines anywhere, at any time.

The second and more important reason is that search engines cover parts of the Web that library tools and portals often disregard. Traditionally, library portals have focused mainly on primary literature. However, there is more information out there that users need, such as working papers, project outlines, lab results, articles posted on pre-print servers and students or researchers who’ve faced similar research issues. The World Wide Web is not so much just a place to find information but a social network through which researchers can find each other and exchange ideas. Research has become more complex and is often of a multi-disciplinary nature. Where traditionally researchers could rely on the input of the few researchers in their field, they are now dependent on insights from people in related research areas, often working in disparate locations.

Elsevier recognised the importance of public Web sources early on and in 2001 launched Scirus, a science-specific search engine. Scirus offers free and easy searching for relevant and trustworthy scientific information on the Web.

What are the principles that guided Scirus’ development?

First, when creating the Scirus search engine, developers began by making the interface intuitive and user-friendly. They recognized that aesthetics can play an important role. Simple search boxes and instant results have become the de-facto standard. Anything more complicated is likely to be dismissed. This is especially true for younger students.

Second, search results mix primary literature and Web content, clearly indicating the importance of different sources. A recent JISC (The Joint Information Systems Committee) study shows students find it increasingly difficult to distinguish authoritative results from preliminary or even biased results. With many search engines, a comment on a discussion forum sometimes gets the same academic weight as an article from a respected journal.

Scirus helps users distinguish journal sources from Web sources in all stages of the search process.

Third, ranking must be optimized for scientific searching. Ranking is now more important than ever. Traditionally, users would look through all results returned by a Web search engine, but today’s usage statistics of search results show that 85% of the time Scirus users do not look beyond the first search page. Scirus uses a dictionary with over 50,000 scientific terms (developed in cooperation with the Computational Linguistics Department at the University of Munich) to identify which pages on the Web are of true scientific value. These pages are ranked higher by default. Scirus uses the same scientific dictionary to assist users in refining their subsequent searches. Scirus does this by listing scientific terms occurring frequently in the first 1,000 results.

Scirus has also implemented several other methods to ensure the best possible results in science- and education-focused Web searching. Scirus focuses only on domains on the Web that are of educational and scholarly importance, excluding large parts of the Web that return irrelevant results. Scirus interprets the user query, using sophisticated linguistic analysis, distinguishing words that together form a scientific term. It then optimises the results, only returning those matching the entire scientific term.

What has been the response to Scirus?

Scirus is a widely used and highly appreciated tool. It has won several international awards including multiple Search Engine Watch awards for Best Specialty Search Engine and a nomination for the prestigious Webby Awards’ Best Science Web Site. Even more rewarding than awards and nominations is the feedback the Scirus team receives each week, some of which appears below.

■ “This is a great search engine. I have only been using it for two days and am already hooked. It filters out all of the garbage and gives results that I need. The Web definitely needs a search engine like this. Thanks again.” Marcus Harikian, Student, USA

■ “Your site is absolutely the best scientific search for me as a professor of genetics.” Doron Lancet, Professor, Israel

■ “This website is unbelievable. I have been a google.com user for quite some time, at least two years, and become quite stressed from its lack of resources and definition. Scirus is what I’ve been missing.” Tamara N. Tresvant, Student, USA

This feedback shows users appreciate a tool such as Scirus that combines old and new methods for searching and presenting results. Scirus has managed to find an optimal balance between authoritative sources such as Medline and ScienceDirect and valuable Web information, bringing to users the best of both worlds.

How Scirus Works
Do You Find Library Connect Seminars Useful?

Felix Haest, Head of Account Development for Europe the Middle East and Africa, recently conducted market research to find out.

In addition to this quarterly newsletter, Library Connect hosts events and seminars around the world. These meetings vary from intimate dialogs to full-day seminars, but the common thread is that we bring together our customers and Elsevier staff to explore industry issues and gain valuable feedback in face-to-face settings. Planning a seminar for a specific institution, or group of institutions, we work closely with the organizing librarian(s) to develop an agenda that is tailored to their concerns. Topics for discussion have included archiving, copyright, customer service, open access, and specific product feedback. Speakers include staff from Elsevier as well as librarians from the institution(s).

To ensure that this format of interaction is mutually beneficial, we recently conducted a survey of past seminar participants in the UK. From 2001 to 2003 a total of thirty Library Connect seminars were held in the UK alone, reaching almost 550 librarians from more than 100 institutes. We contacted 400 librarians who had attended one or more of these seminars and asked them to complete an online survey. The survey was developed with input from Elsevier Account Development Managers – all experienced in conducting Library Connect seminars.

Here’s what you said

Approximately 100 librarians responded to the survey. We were pleased to confirm that an overwhelming majority of respondents found the Library Connect seminars useful and felt they provide a good platform to give feedback to Elsevier. 94% of you encouraged us to continue with the program. If you are a librarian interested in hosting a Library Connect seminar, please contact your Account Development Manager or email libraryconnect@elsevier.com.

Tell us what you think

Please make sure you let us know what you think about Library Connect seminars worldwide and help us continually improve them. Are there any particular topics you would like us to cover? What aspects do you find most useful? Drop us a line at libraryconnect@elsevier.com with your ideas. We look forward to hearing from you.
In the World Book Capital
New Delhi, India, February 2004

This year, UNESCO declared Delhi as the World Book Capital in recognition of its expanding role in the field of publishing. The New Delhi World Book Fair is the largest book event in the Afro-Asian region and in February around seven million people flocked to the exhibition center housing more than a thousand exhibitors, including Elsevier. We were delighted that librarians from across the country as well as customers from Sri Lanka, Pakistan, Bangladesh and Malaysia visited our booth. Elsevier India hosted two dinners during the event, one for customers and subscription agents and one for a Malaysian librarian delegation. During the fair, a seminar was also organized for medical librarians — Account Manager Ajay Singh gave librarians the latest updates on products like ScienceDirect.

Learning About eLearning
Chicago, Illinois, USA, April 2004

Almost 1,000 librarians from around the world met in Chicago for the 2004 Endeavor User Group Meeting. Keynote speaker Neil McLean, Director, IMS Global Learning Consortium, Australia, illustrated the opportunities for interoperability between libraries and campus learning management initiatives. He challenged librarians to think creatively about becoming active in eLearning activities on campus to keep the library relevant as institutions move to more electronic learning methodologies. Endeavor users presented over 90 sessions at the meeting, covering topics ranging from traditional library automation tips and tricks to pioneering projects with Endeavor’s digital library systems and OpenURL-enabled linking technologies.

Talking with Librarians in
Hong Kong and Taiwan
Hong Kong, May 2004

Over 30 librarians attended the 2004 Library Connect Seminar, co-organized with the University of Hong Kong. David Groenewegen, Digital Resources Librarian, Monash University, Australia, shared his experience in electronic resources with the audience in his talk, “Many Paths: Helping Users Locate Online Information.” Hong Kong University Librarian, Dr Anthony Ferguson, raised librarians’ concerns over the cost and volume of journal information in today’s environment in “Journal Information: What is the problem?” Account Development Manager Siaw Pae Kee was happy to hear from librarians who attended that they enjoyed the friendly atmosphere and open discussion, and appreciated the opportunity to learn from each other and hear how other libraries are operating. Martin O’Malley, Elsevier Managing Director of Asia Pacific Science and Technology, commented, “Elsevier values these direct interactions with our customers enormously. Open dialogue is imperative if we are to continuously improve the service provided to our researchers and readers — a shared objective of librarians and publishers.”
Taiwan, May 2004

More than 50 participants attended the 2004 Taiwan Library Connect Seminar at National Taiwan Normal University. At this seminar we were joined again by David Groenewegen and further speakers including Kit Li, Serials Librarian, Run Run Shaw Library, City University of Hong Kong, who shared her experience in electronic resources. Chen Li-Ping, Professor at the Library Information Research Institute, National Chung Hsing University and President of the Chinese Association of Library and Information Science Education (CALISE), gave an academic perspective on the dilemma faced by librarians in today’s library environment.

We were particularly honoured to have Dr Harry Liang H. C., Director, University Library, National Taiwan Normal University, give an opening speech in which he highlighted the importance of establishing a new relationship among publishers, librarians and readers. Dr Liang commented, “Library Connect paves the way for building up excellent relationships among these three groups.”

Taking Library Connect Seminars to Turkey

Turkey, May 2004

Last month Library Connect held seminars in four large Turkish cities: Istanbul, Ankara, Izmir and Erzurum. In total, 344 participants from 35 institutions participated. All these institutions are part of the Anatolia University Libraries Consortium (ANKOS) which to date counts 61 members in Turkey. Topics discussed during the seminars included the future development of ScienceDirect, usage statistics and ways of promoting electronic resources. From 2002 to 2003 there has been a 150% increase in the usage of electronic resources at Turkish universities and since 2001 the number of articles published in Turkey has increased by 30%. Bulent Karasozen, Ankos Chairman, commented, “These seminars were attended by many librarians and faculty members and they met everyone’s expectations. The content was meaningful to the participants’ goals and all questions were answered clearly and completely. We found the information presented during the demo session especially useful.”

Meeting Medical Librarians at the MLA

Washington DC, May 2004

More than 160 librarians attended the Elsevier Medical Librarian Luncheon to hear Richard Horton, Editor of The Lancet, speak on “Electronic Cultures and Clinics: Reasons to be hysterical (and hopeful).” A transcript of Richard’s excellent speech is available from libraryconnect@elsevier.com.

At MD Consult’s Sunrise Seminar nearly 70 librarians received updates on the latest developments to our health science products, including MD Consult, FIRST Consult and POCKET Consult. The breakfast session featured first-hand feedback from customers Holly Harden, MLIS, Liaison Librarian, Johns Hopkins School of Medicine and Laura Abate, MSLS, Electronic Resources and Instructional Librarian, Himmelfarb Health Sciences Library, George Washington University Medical Center. MD Consult staff members took questions in a lively discussion session. Issues of importance raised by librarians present were PDF availability, missing images and tables in online articles, notification regarding removal of content, portable usernames/passwords, evidence-based medicine resources and OpenURL compliance. MD Consult publisher, Jeanne Thoma, reassured the audience that these issues are being addressed. Librarians present were pleased to hear about the new MD Consult/FIRST Consult Resource Center — www mdconsultannex com/resources — recently launched to update customers on developments with regard to issues such as those raised, as well as to provide information on new content, features and resource materials.
Customers continue to experience excellent results from Elsevier product trainings delivered over the Web. In April 2004, Americas Account Development Manager Anh Bui delivered an online training to librarians and researchers affiliated with Affymetrix, a US company with multiple locations.

Martha Manion, Senior Manager with Affymetrix's Library and Information Services, reported, "We used WebEx for our introductory ScienceDirect training with great success. We were able to offer a customized multi-site training session, which had participants from six Affymetrix locations!

"We planned the session as a WebEx presentation, but gave participants the option to come to the Auditorium or dial-in from their desks. 40% joined the training from their own computers.

"Based on the feedback, the training was well received and accomplished what we wanted."

So, if you're new to online trainings or a seasoned virtual-traveler, please climb aboard Elsevier's Cyber-Train at https://elsevier.webex.com. Here you can sign up 24/7 for complimentary trainings covering products such as ScienceDirect, Engineering Village 2, ChemVillage and Embase.com. These publicly available trainings occur at times good for the Americas and Europe, but customers anywhere in the world may participate.

Any customer needing a customized online training, for a specific group or in a local language, can contact an Account Development Manager.

At https://elsevier.webex.com, start times are listed per Eastern Standard Time (the time in the eastern US) and most trainings use the password "learn." All you need to participate is a browser and phone.

We look forward to meeting you on the Web!

https://elsevier.webex.com

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**Upcoming Events 2004**

**JULY**
- 7-8 Library Connect Seminars, Tokyo and Osaka, Japan
- 7-8 Library Connect Seminar, Auckland, New Zealand
- 8 Library Connect Seminar, Wellington, New Zealand
- 9 Library Connect Seminar, Christchurch, New Zealand
- 9-9 Library Connect Seminar, South Korea
- 11-15 WebCT User Conference, Orlando, FL, USA
- 12 Library Connect Seminar, Sydney, Australia
- 13 Library Connect Seminar, Brisbane, Australia
- 14 Library Connect Seminar, Melbourne, Australia
- 15 Library Connect Seminar, Adelaide, Australia
- 16 Library Connect Seminar, Perth, Australia
- 15-16 Annual Meeting and Conference of the Japan Special Library Association, Hiroshima, Japan

**AUGUST**
- 22-27 International Federation of Library Associations (IFLA), Buenos Aires, Brazil
- 24 IFLA Industry Update 1 (10:45 - 11:45 am): "Future Directions for STM Publishing: Evolution or Revolution?" Arie Jongejan, CEO Elsevier Science and Technology (check IFLA program for more details)
- 25 Library Connect User Group Meeting - Latin American Libraries, Buenos Aires, Brazil

**SEPTEMBER**
- 2-6 11th Beijing International Book Fair, Beijing, China
- 5-8 Library and Information Association of New Zealand Aotearoa, Auckland, New Zealand
- 15-16 Elsevier UK Library Directors Forum, Coventry, UK
- 20-25 9th European Conference of Medical and Health Libraries, Santander, Spain
- 21-24 Australian Library and Information Association Meeting 2004, Gold Coast, Australia

**OCTOBER**
- 6-10 8th International Frankfurt Book Fair, Frankfurt, Germany
- 7-10 LITA 2004 National Forum, St Louis, MO, USA
- 17-21 SNBU (Seminário Nacional de Bibliotecas Universitárias), Natal, Rio Grande do Norte, Brazil
- 18-22 EDUCAUSE, Denver, CO, USA
- 23 Library Connect Seminar, Qingdao, Shandong Province, China

**Cover Shots**

This free quarterly newsletter for librarians features interviews with Elsevier’s leading authors. You won’t want to miss the June issue.

- Robert Lanza, Vice President, Advanced Cell Technology, and Editor-in-Chief, Handbook of Stem Cells
- Kenneth Arrow, Acclaimed economist, winner of the Nobel Prize, and Editor-in-Chief, Handbook of Economics series
- Cutler Cleveland, Board of Directors at Pardee Institute and Editor, Encyclopedia of Energy
- Michael Intiligator, Senior Fellow, Gorbachev Foundation of North America, Senior Fellow, Milken Institute, and Editor-in-Chief, Handbook of Economics series

To read Cover Shots or subscribe for email delivery, visit www.elsevier.com/locate/covershots

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The Library Connect newsletter is published four times a year by Elsevier Inc. The editorial team comprises representatives from across Elsevier. Library Connect includes contributions from Elsevier staff, librarians and other industry professionals. The opinions expressed in Library Connect are not necessarily those of the editorial team or the publisher.

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Did you know?

You can customize ScienceDirect’s user interface to ensure your user community knows they are using full-text resources provided by your library.

A customized banner saying, "Brought to you by the University of..." can be placed at the top of every ScienceDirect page. Alternatively, you can opt to include your institution’s logo or other image in place of this header banner. A footer displaying your institution's logo can also be added.