

Ragged Left



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January Meeting Wrapup _____

Context Sensitive Help

by Steve Schaefer

As companies strive to increase efficiency and save money, they are instituting single sourcing of documentation. On January 12, Debjani Sen and Roger Dearth of Remedy gave a presentation at the STC Berkeley meeting on this subject: "Creating Context Sensitive Help Using Single Sourcing."

Single sourcing uses one source of data to produce multiple documents. Creating, storing, and reusing modular content saves writing and translation costs, and allows you to design information for different audiences.

Single sourcing, at a basic level, can be as simple as producing a PDF and online help with identical content from the same source document. At the second level, it may involve customizing static content for different information formats, such as a user guide or training materials. At a third level, content is generated and stored in a database, and the authors dynamically customize it for different users. At the highest level, database content is customized by the customers themselves—they have complete control over the format, while the content is managed separately.

Remedy has been experimenting with integrating single sourcing into their documentation production process, and is currently somewhere between level 2 and level 3. The company plans to develop information as elements or chunks of information, which they will use in multiple books and formats. The presenters gave an example of two documents sharing five chapters, with some variables, which were changed to make the shared content work in both places.

Single sourcing doesn't work for every situation. You need to have significantly overlapping content in order to gain an advantage by sharing information. Ideally, single sourcing allows updating of the information in one place, reduces review time, cuts translation and other costs, and requires less time. Challenges include the high learning curve for changing documentation production and acclimating writers to the new technology and tools. Simply getting agreement from everyone in the organization to make the change can be daunting. In addition, there is massive up front work to modularize and organize the documentation before it can be shared.

Chunking and sharing information has its challenges. Members of the chapter brought up thought-provoking questions for the speakers. How can you customize for the different levels of knowledge for beginners and experts? How can you be sure the documentation flows smoothly? In the case of a level 4 implementation, how can you prevent users from presenting information that contradicts itself?

After Debjani explained the concepts and methods of single sourcing, Roger discussed a case study done for Remedy. They needed to convert source documentation from an OEM vendor into a revised set of context-sensitive online help and a printed PDF guide. The ended up taking twice the time that they had estimated, but they were able to use a custom designed Perl script to convert the customer's Robo-HELP into a source document, from which they generated new help files using WebWorks Publisher and a PDF using FrameMaker 6.0.

In this case, single sourcing made sense because the printed and online documentation was nearly identical. Now, one writer can easily maintain both sets of documentation.

In the end, before attempting to move to single sourcing, the presenters maintain

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TECHNICAL COMMUNICATION is the bridge between those who create ideas and those who use them. Conveying scientific and technical information clearly, precisely, and accurately is an essential occupation in all sectors of business and government.

THE SOCIETY FOR TECHNICAL COMMUNICATION (STC) has approximately 25,000 members worldwide. Its members include writers and editors, artists and illustrators, photographers and audiovisual specialists, managers and supervisors, educators and students, employees and consultants.

STC strives to

- Advance the theory and practice of technical communication
- Promote awareness of trends and technology in technical communication
- Aid the educational and professional development of its members

MEMBERSHIP

Membership is open to everyone. Regular membership is \$155/year, with an additional \$15 enrollment fee the first year. Student membership is \$56/year. To receive additional information and an application form, via mail or e-mail

- Send e-mail to membership@stc-berkeley.org
- Send mail to Berkeley STC, PO Box 1007, Berkeley CA 94701-1007

INSURANCE

Members of STC can apply for health, disability, and other insurance at STC group rates. For more information, contact STC office at stc@stc.org or (703) 522-4114.

WORLDWIDE ACTIVITIES

STC's annual conference brings together more than 2,000 technical communicators from around the world for educational programs, seminars, and workshops conducted by experts in the field. Upcoming annual conferences: Seattle, May 8-11, 2005; Las Vegas, May 14-17, 2006. In addition the STC sponsors many regional conferences, which feature the same sorts of programs, seminars, and workshops on a more intimate scale.

STC sponsors international and regional competitions in all aspects of technical communication.

STC Special Interest Groups (SIGs) bring together members with common experiences and interests to share their skills and knowledge. STC SIGs include:

- AccessAbility
- Canadian Issues
- Education and Research
- Illustrators and Visual Designers
- Environmental, Safety, and Health Communication
- Consulting and Independent Contracting
- Quality
- Marketing Communication
- Scientific Communication

STC sponsors research grants and scholarships in technical communication.

STC publishes the quarterly journal *Technical Communication*, the newsletter *Intercom*, and other periodicals, reference materials, manuals, anthologies, standards, and booklets.

Formed in 1953, STC has today become the largest professional society in the world dedicated to advancing the theory and practice of technical communication.

LOCAL ACTIVITIES

The six northern California chapters of STC conduct a variety of individual and joint activities. See page 6 for contacts for these chapters. See page 7 for a list of other local organizations in which STC members may be interested.

SUBSCRIPTIONS

This newsletter is free to members of the Berkeley chapter.

ADVERTISING RATES

The *Ragged Left* is not accepting advertising at this time.

SUBMISSIONS

Ragged Left publishes original articles and illustrations. We edit them to meet our needs. You retain copyright but grant every STC publication royalty-free permission to reproduce the article or illustration in print or any other medium. Please talk with the editor for details of how to submit articles and illustrations.

The deadline for unsolicited submissions is the fifteenth of the preceding month.

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that you should evaluate whether single sourcing is the right way for your situation, and if you do decide to proceed, you must carefully plan your process to ensure success. They believe that single sourcing efforts are slowly moving in the direction of database publishing, in which content is stored in a database and writers query to extract specific information. It will certainly be a challenge of technical writers to learn to write “chunk style.”

Steve Schaefer writes technical documentation for Oracle by day, automotive test reviews by night

Letter from the Editor _____
by Joe Devney

Theme: Emerging Technologies

What technologies are entering the marketplace? What will technical communicators be writing about in a year or two? Articles in this issue of the *Ragged Left* provide some answers to these questions. Contributing editor Gina Blednyh and I have found a few technologies that seem to be moving into the marketplace, the time when technical writers and people in related positions will be needed to explain the technology to investors, customers, and end-users.

We hope that the more ambitious among our readers will take advantage of this information to start educating themselves about these developments, so they will be able to find employers or clients in these new fields.

One opportunity that we did not address is stem cell research. Last fall California voters approved Proposition 71, establishing the California Institute of Regenerative Medicine, an entity that will annually dispense hundreds of millions of dollars in grants for stem cell research and facilities. The decision on where the Institute’s headquarters will be located is expected to be made in May. Several California cities are competing to be the headquarters city. Two of them, San Francisco and Emeryville, are local to Berkeley STC members. If one of these two cities is chosen, the CIRM might be a good source of jobs or information about jobs for those chapter members who would like to work in this new field.

New Editor

This issue of the *Ragged Left* is my last one as editor. Gina Blednyh will be taking over editorial duties with the May-June issue. I wish her well, and hope that some readers choose to be writers as well, so she doesn’t have to do all the work herself.

Outgoing *Ragged Left* editor Joe Devney can be reached at joe@devney.com. Incoming editor Gina Blednyh can be reached at newsletter@stc-berkeley.org.

Emerging Technology _____

An Overview of Synthetic Biology

By Gina Blednyh

People with degrees in the sciences must feel positive about their job prospects these days: think of Genentech, Chiron, Bio-Rad, Amyris, and Gilead, name only a few of the Bay Area biotechnology employers that rely on people with backgrounds in biology, chemistry, and chemical engineering. Their employees research and produce complex products that can take many years to develop. And just as software or hardware companies require writers to produce documentation, so do life science companies. Not all technical writers have a science background, though, including myself. Yet because the local job market points more and more to biotechnology, it may prove helpful to learn about emerging trends in the field. In this article I focus on Synthetic Biology.

A relatively new field—MIT hosted the first international conference on the topic just last June—Synthetic Biology attempts to deliberately create biological systems. Drawing from expertise in the biological, chemical engineering, and computer science disciplines, practitioners manipulate genes so that cells perform a particular task. Two resources referred to for this article used the rather unscientific phrase of “snap together” when describing the vision of what scientists desire to do with genetic, cellular, and protein matter.

What exactly do scientists desire to do, though? A list from last year’s MIT conference site (<http://web.mit.edu/synbio/release/conference/>) includes the following research areas: molecular machines, protein engineering, energy sources, sensors and actuators, biochemical or genetic network design, and more. One result of synthetic biology research, for example, includes bacteria engineered to clean up toxic substances. Yet because of the immense possibilities that the ability to control cellular behavior offers, an astonishing assortment of products seems to exist. In fact, researchers in this budding field appear hopeful that eventually they will possess the ability to create entire human organs.

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Rather grand stuff, eh? And it should be noted, quite different from genetic engineering, which alters biological products; in synthetic biology, researchers actually design a product—examining all of the genetic, protein, and cellular interactions—for a particular purpose. Think of it as a kitchen remodel versus a new home built from an innovative architectural plan.

The fact that scientists may attain the ability to create potentially anything perhaps brings to mind Mary Shelly's novel *Frankenstein*—a story with a devastating moral. But the potential for good that synthetic biology offers cannot be ignored. For instance, scientists are currently working to develop bacteria that can produce substances required for drugs which at present rely on ingredients derived from rare or hard to find plants. If researchers achieve their goal, they could count success by the number of lives saved due to new access to currently hard-to-get pharmaceuticals.

In the next article in this series, I will explore specifics of the research a UC Berkeley professor is currently conducting to create artemisinin, an anti-malarial drug, in the laboratory.

Gina Blednyh is an Oakland resident and STC member whose interests include all aspects of writing and emerging technologies.

Emerging Technology _____

How to See the Future

By Joe Devney

“The best way to predict the future is to invent it.” Or so says the Silicon Valley aphorism. Technical communicators are unlikely to invent the future of technology, but we can learn from the people and institutions trying to do so. If you would like to be waiting for the technological future when it arrives, here are some ways you can make that more likely.

Technological innovation doesn't normally appear out of nowhere, even if it seems that way sometimes. A new product or process makes its way to the marketplace with the help of university and corporate research labs, startup companies, venture capitalists, and other entities. In many cases, the work they are doing is publicized in one way or another. Let's look into the near future, then see if we can raise our eyes to the far horizon.

The Very Near Future

Depending on the field you are interested in, consumer magazines may have information about products just entering the marketplace—think of *PC World* for home computers, or *Consumer Reports* for consumer items of all kinds. These publications may also tell you what might be on the shelves for the next holiday shopping season. They are available at many newsstands. But while they may introduce you to a new field, they will not tell you anything that will put you ahead of the crowd.

Strategic Planning for Industry

To look further into the future, you will need to read “trade” magazines. These are aimed at experts working in the field, and so are more technical in nature. If you want to start writing about technology in a field that is new for you—say optics or drug development—these magazines will get you used to the industry jargon and the sorts of problems that your potential audiences have to worry about. Because the readers are often managers who need to plan months in advance, the publications have a longer view, and will have articles about, for example, a new operating system that isn't due out for a year, or a communications protocol that is still being developed by a standards board.

These magazines are not available on the newsstand, and subscriptions can be pricey. You will have to do some work to find out what publications exist, and to get your hands on them.

One option is to visit libraries. Try public libraries, corporate libraries, specialty libraries, college libraries—use your network. Find the magazines, and decide which ones will be of interest to you. You can either read it at the library or get a subscription.

You may be able to get a free subscription. Visit www.tradepubs.com and www.freebizmags.com. These two organizations list trade magazines that want to increase their subscriber base, and are willing to give no-cost subscriptions to certain people in the industry to do so. Fill out the questionnaires for any that are in your field of interest. If you answer the questions to the publisher's satisfaction, you will start receiving the magazine.

The Pool of Possibility

As you try to look further ahead, the view gets murkier. You will find competing technologies and

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Election News _____

Chapter Election Time

by *Richard Mateosian*

In the immortal words of Katherine Pyle, a long time chapter elections manager, “Yes, it’s spring and it’s that time again...chapter election time!!”

Chapter officers decide the direction our chapter takes for the coming year: speakers, meeting locations, and how we spend our money.

Any member of our chapter in good standing can run for any office. You have until our April 13 meeting to declare your candidacy. Ballots, candidate statements, and instructions for voting will appear on the chapter website and in the May/June Ragged Left newsletter.

Terms of office run from July 1, 2005 to June 30, 2006. It’s fun, and it’s rewarding. Even if you don’t win, you’ll be first in line for important appointed positions.

Call to Action

To throw your hat into the ring:

By April 13th, send e-mail stating your name and the position you wish to run for to elections@stc-berkeley.org or tell the elections manager (Richard Mateosian) at the March or April chapter meeting.

By April 18th, send your candidate statement to elections@stc-berkeley.org. Statements are approximately one hundred words in length. We may edit them before publishing them.

Elected Officers

The elected officer positions are:

President. Leads chapter and board meetings, represents us to other parts of STC, inspires volunteers to become active, and makes many day-to-day decisions about chapter operations.

VP for Membership. Responds to requests for STC information, answers questions and accepts applications from potential chapter members, interviews new members for newsletter articles, calls members who don't renew, and generally works to make every member feel a valuable part of the chapter. A good job for a people person.

VP for Programs. Finds speakers and other programs for chapter meetings, makes arrangements for audiovisual equipment, oversees PR for

meetings, welcomes and introduces speakers. A great job for making lots of valuable contacts.

Treasurer. Receives chapter income, pays bills, keeps accurate financial records, reports to the membership about the financial health of the chapter, and advises the board about the feasibility of proposed chapter expenditures. This is a good job for someone who likes numbers and has at least a little financial background.

Secretary. Creates and distributes minutes of board meetings, corresponds with other STC groups, and helps with board activities as needed. A great way to learn, contribute, and find out if you want to do more.

How the Race Stands

To date, the following candidates have come forward:

President. Nobody yet—this could be you! Joe Devney is stepping down after two productive terms.

VP for Membership. Jim Dexter Jim recently took over this position in addition to his great work on the website.

VP for Programs. Nobody yet—this could be you! Valerie Steele has put on a succession of terrific programs, but she's ready to give somebody else a chance.

Treasurer. Nobody yet—this could be you! Ben Lukas served us well for two terms, but he wants to spend more time with his employer.

Secretary. Eunice Malley Eunice took over the job when our prior secretary changed careers and left STC.

Why let them have all the fun? We welcome everyone’s participation.

Richard Mateosian is the Elections Manager for STC Berkeley. He can be reached at elections@stc-berkeley.org.



Emerging Technology _____

RFID: What is it and what does it mean for Us?

By Gina Blednyh

More than likely the acronym “RFID” has made its way into the pages of a newspaper article you read or story you heard on the radio. RFID refers to

Radio Frequency Identification, a technology that possesses the ability to impact our everyday lives in broad ways due to its power to provide organizations with specific data about retail products, pharmaceuticals, and even humans. Originally developed years ago to identify friendly aircraft in battle, RFID has many possible applications today; because of this, it may serve technical communicators well to learn about the technology and prepare for future writing opportunities.

Specificity from the Masses

In some respects, RFID’s purpose mirrors that of bar codes. However unlike bar codes, RFID allows a company to identify a single item—for instance, an individual can of oil rather than simply a class of lubricant. But although RFID technology is not new, bar coding is a more stable technology right now, because of its ubiquity and track record. Nonetheless, some organizations have begun to investigate deploying nascent versions of an RFID system, while others have successfully done so—the FasTrak toll collection system being a well-known local example.

Details, Details...

An RFID system consists of several components. A tag (or transponder) with an antenna contains identifying digital information; organizations attach these tags to items on which they want to collect data. Readers positioned at strategic locations such as warehouse entrances or toll booths exchange data with the tags using radio waves. Software designed for RFID systems works with the reader to capture data into a database, and once parsed by analysts, this data offers valuable information to organizations.

... and Many Choices

The data that provides this valuable information resides on a microchip in the tag. For example, it may hold account information or an Electronic

Product Code (EPC), a number that identifies a product and manufacturer. Chips can reside on various types of tags. Active tags include batteries that help send a signal to a reader while passive tags receive a radio frequency current from the reader that interacts with its antenna and produces an electromagnetic field. FasTrak uses active tags. Semi-passive tags, as you can guess, operate using a combination of power from a battery and the reader.

The battery and radio-frequency–created electromagnetic fields allow a tag to exchange the data residing on its chip with the reader. Depending on the frequency under which the tags operate, readers can scan the chips from over a meter away. Once collected by the reader, software designed for an RFID deployment organizes the data. Using Physical Markup Language (PML), organizations can describe the physical entities that they track. What’s ultimately done with the data depends on the organization collecting it. For instance, the information can allow retailers to optimally stock shelves, counties to collect road tolls more efficiently, and suppliers to improve performance.

Technical Challenges and Future Jobs

But RFID can present challenges. For instance, because metal and water distort radio waves, containers made of metal or holding liquid pose problems for tags and readers. And radio frequencies that work in a domestic RFID deployment may not work in countries that assign the bands for use in other areas.

Work continues in the RFID arena, though. According to Raymond Blanchard of the RFID startup TrueDemand Software, global RFID standards continue to be ratified. And while the technology evolves, he suggests that technical writers research the RFID market prior to job hunting; it will impact job opportunities in the Bay Area, although he believes it may take a while. But those with semiconductor, database, radio frequency, EDI, or web services backgrounds will add value as technical writers in the field. Writers without specialized backgrounds but with the ability to learn about components of the technology—PML, passive and active tags, transponders, and transceivers—can also be successful, and will be better prepared to write about the next Big Wave in supply chain management.

Gina Blednyh is an Oakland resident and STC member whose interests include all aspects of writing and emerging technologies.



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competing companies, with no clear winners. If you are hoping to find a new client or employer, you might pick a technology that you find interesting, or an opportunity that is nearby. You might start your search with *Technology Review* magazine, which has articles about companies that are trying to bring innovations to market. Beyond that, visit the National Venture Capitalists Association, www.nvca.org. They have a list of links to their members' Web sites, where you can learn about the companies and technologies that are attracting investments. Culling through this is a lot of work, so few people will do it.

Also track down the National Labs, like Lawrence Livermore and Oak Ridge. Their annual reports and other publications explain the innovations being created with your tax dollars.

Pure Research

To learn what the scientists themselves are working on, start with *Scientific American* magazine, whose articles are written by the researchers. A technology often shows up in these pages a year or so before it becomes a product in the marketplace.

The *Scientific American* articles usually have links to other resources: publications, university Web sites, or companies in the field. The university links are often especially helpful, because they will in turn link to other research centers.

A Final Note

I have mentioned a number of magazines, but if you prefer Web research, remember that most magazines also have websites.

Joe Devney recently was a member of a panel discussing "Trends in Technical Communication" at East Bay STC.

February Meeting Wrapup _____

Poetry and the Art of Table Design

by Caroline Scharf

Kathy O'Donnell, a technical writer, teacher and long-time STC member, was the speaker at the February 9th STC Berkeley Chapter meeting, where she spoke on the topic of table design. Kathy began her presentation titled "The Art and Science of Table Design" by quoting one of her students who, when asked to discuss tables, said, "You just do tables. You just lump numbers together with words."

To Kathy, this statement epitomized many people's attitude towards table design and how much forethought they give to it. To illustrate just how prevalent tables are and how important they are to society, she briefly discussed their historical use in record-keeping and games, such as Tic Tac Toe, and today's use to present complex data sets and anchor text and graphics on web sites.

Kathy's interest in table design began when she worked at Honeywell where her mentor introduced her to the complexities involved in good table design. After becoming intrigued with the subject, she has since researched the topic and read books by information visualization and technical communication specialists like Edward R. Tufte, Jacques Bertin and Karen Schriver. She also highly recommended the book *Scientific Style and Format* by the Council of Biology Editors.

Quoting these sources and more during her presentation, Kathy reinforced the importance of good table design in information usability and reader comprehension. When asked if she now considers herself an expert, Kathy replied, "I am a student of tables," demonstrating to the audience just how complex the subject is and how much artistry is involved in good table design. She likened tables to poetry in that they're brief and convey a lot of information to the reader.

Kathy spent the majority of her presentation covering table taxonomy, including definitions of stub, decked head, spanner and field; and the elements of good table design, such as guidelines on the use of rule lines and white space. She warned against the use of vertical and heavy rule lines, which can create a prison-cell look, and likened a table to a graph turned on its side, where columns are the X-axis and rows are the Y-axis.

Kathy concluded her presentation with a handout of badly designed tables for the audience to discuss and apply what they'd learned. Audience members worked together in small groups deciphering the information presented in the table and debating the best approach to remedying the bad design. In the end, the audience was able to see firsthand how table design is like writing poetry: it takes thought, time, practice and patience to craft a good table.

Kathy's presentation is available on the Berkeley Chapter web site.

Caroline Scharf has a degree in English and a certificate in technical writing from California State University at Chico, and has been a technical writer in the Bay Area for the past eight years.



President's Column _____

by Joe Devney

The big news at the Society Level is the STC Transformation initiative. There are changes coming in the way STC is organized and operated. Some of them are here already: you probably noticed that you had more membership options than in the past.

Please make an effort to visit www.stc.org/transformation and read about the Transformation so you can make informed choices on your Society ballot, and understand the changes that are happening. You can even join the Transformation discussion list.

I would also encourage you to attend the Annual Conference in Seattle in May. Early registration is available until April 22. The conference is actually a bit overwhelming: over 200 “technical sessions” to choose from, and over a thousand of your peers to meet. But you can learn a lot about the profession, and add to your network. Information can be found on the STC Web site.

And here is my final reminder: chapter elections are coming up. I urge all chapter members to consider running for office, and certainly to vote when it comes time. Our Elections Manager, Richard Mateosian, will provide details.

SCT President Joe Devney can be reached at president@stc-berkeley.org.

Emerging Technology _____

Smart Dust

By Joe Devney

Most of us are familiar with conventional computer networks, including the Internet. In our everyday world, we use a desktop or laptop computer—something with a keyboard—connected to a server computer, which in turn connects to a network of other computers. A new class of computers is emerging to fill needs that cannot be filled by this arrangement. These are tiny computers—measured in centimeters or even millimeters—each with limited capacity, but able to self-organize into a wireless network. This new technology is called “smart dust” or “mote computing.” It is just at the beginning stages of commercialization, the point at which ambitious technical communicators might want to start learning about it, in order to be first in line when potential clients or employers realize they need our services.

Smart dust consists of a the computer itself, the sensor or sensors it supports, and the network it belongs to.

The Mote Computer

The first thing to understand about mote computers is the constraints they put on designers and developers. Their small size limits the amount of memory and energy available to them.

The memory constraint is partly addressed by the operating system, an open-source program called TinyOS. If some functions provided by the operating system will not be used by a particular mote, TinyOS will remove those parts of itself, so that memory is freed up for sensor data. Memory can also become available when the collected data is uploaded to a central collection point.

The power source for a mote computer may be a battery or a solar cell. In the future, vibration may be also be a potential power source. In any case, the device must be stingy with its energy: a mote computer and the sensor it supports could use up a coin-sized battery in a matter of days if they ran continuously. One important strategy for power-saving, then, is to have the device “sleep” nearly all the time. For instance, a temperature-sensing mote could wake up and take a reading only once per minute. And since transmitting data takes more energy than manipulating it internally, the mote could also compress the data before transmitting it, or simply compute an average and transmit that (assuming that would be sufficient for the project).

And from a hardware point of view, mote computers must usually be tough—they will be put in places where they may be subject to moisture, vibration, dust, and other stresses. For example, one project to study the microclimates around redwood trees requires the motes to remain on or near the trees, subject to rain, wind, and insects crawling on them.

The Sensor

Attached to the mote computer is a microchip to detect physical or chemical stimuli: temperature, vibration, or humidity, for example. The chip is actually a microelectricalmechanical system, or MEMS—essentially a tiny machine made with the same silicon-etching tools used to build computer chips. One of the challenges facing designers is to find ways to get both the MEMS and the electronics on the same chip.



The Network

Unlike the local area network you might find in a typical business, with its cables, IP addresses, and other organizational paraphernalia, a smart dust network is self-organizing. Each mote can detect and communicate with nearby motes: those within perhaps 100 feet or less. A base station computer receives and coordinates information from the entire network. As with the Internet, the information from one node on the network may travel in several “hops” to reach its target, and may travel by alternate routes if one or more computers on the way is unavailable.

The coordination is necessary not only because there are multiple motes, but because different motes may be measuring different things. A smart dust network used to study seabirds on an island off the coast of Maine has sensors for temperature and air pressure for environmental data, and infrared sensors inside the seabirds’ nesting burrows to detect the warmth of the birds and eggs.

How Will Smart Dust be Used?

As mentioned above, smart dust networks are in use now to study the natural environments for redwood trees and seabirds, and there are probably many more reasons to study microclimates. A project sponsored by the National Science Foundation’s Science and Technology Center for Embedded Networked Sensing (CENS) will track the progress of nitrate pollutants into groundwater.

There are also potential military applications for this technology. According to David Culler and Hans Mulder, writing in *Scientific American*, a system to detect the source of gunfire has been tested at Fort Benning, Georgia, and another prototype “perceptive network” uses mote computers on antitank mines, so the mines can reposition themselves in order to close gaps in a minefield. Mote computer with vibration sensors could be used to detect activity on the perimeter of a military outpost.

In less threatening situations, prototype networks use motion, pressure, and infrared sensors to monitor residents in two elder care facilities. A network of vibration sensors could monitor manufacturing machinery, sending out alarms if the vibration goes beyond a specified range. Mote networks could monitor traffic or air quality.

Uses for smart dust are sure to multiply in the future.

Smart-dust pioneer Kris Pister of Dust, Inc. projects that the motes will drop in price from \$50 to \$100 each today to \$1 in five years. We can expect that the technology will continue to improve in that time as well.

What’s a Tech Writer to Do?

If this is a technology that interests you, see the references below. Smart dust is just moving from the laboratory to the marketplace, so you will probably have to educate yourself. You are unlikely to find university extension courses about it. Since much of the research is being done locally at UC Berkeley, do a search on the UCB site for “smart dust.” Try Internet searches for “smart dust” or “mote computing.” Visit the Web sites of the startup companies that are already in the business.

Then find your niche. Can you explain the technology to customers or investors? Can you help hardware designers communicate to software engineers? Can you create really great explanatory diagrams? Can you help think up or document new uses for the technology? Can you write grant proposals for researchers?

Finally, sell yourself. Create some samples of the kind of work you want to do. Contact the companies in the field, or contact their actual or potential customers. Contact the organizations that will need to find grant money, or the organizations that will need to evaluate the grant requests. Your big advantage in this process is that you will be among a small number of technical communicators who actually understand the technology.

References

- “Smart Sensors to Network the World,” *Scientific American*, June 2004
- Center for Embedded Networked Sensing: www.cens.ucla.edu/
- “Smart Dust: the particles of dust that could be watching you,” by James Flint, Heise Online: <http://www.heise.de/tp/r4/artikel/5/5269/1.html>
- “Smart Dust: mighty motes for medicine, manufacturing, the military, and more” by Thomas Hoffman, *Computerworld*: <http://www.computerworld.com/mobiletopics/mobile/story/0,10801,79572,00.html>
- Berkeley Sensor and Actuator Center: <http://www.bsac.eecs.berkeley.edu/>



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TinyOS Community Forum: <http://www.tinyos.net/>

“Smart Dust: Autonomous sensing and communication in a cubic millimeter,” by Kris Pister, UC Berkeley Robotics Lab: <http://robotics.eecs.berkeley.edu/~pister/SmartDust/>

Joe Devney is a technical writer who enjoys learning new stuff.

Other STC chapters in Northern California

East Bay

<http://www.ebstc.org/>

North Bay

www.stc-northbay.org

Sacramento

www.stcsacramento.org

San Francisco

www.stc-sf.org

Silicon Valley

www.stc-siliconvalley.org/

Upcoming STC Berkeley Meetings

What Basics Do You Need to Know about XML?

Speaker: Paula Westerburg, Lasselle-Ramsey, Inc.

March 9, 2005

Macromedia’s “Contribute”

Speaker: Eric Lerner

April 13, 2005

Localization 101

Speaker: Michael R. Cárdenas, Multilingual Translations, Inc.

May 11, 2005

SEE THE CHAPTER WEB SITE FOR MORE DETAILS.

www.stc-berkeley.org

Emerging Technology

So What Else is New?

By Joe Devney

This issue of the *Ragged Left* includes articles on three emerging technologies: synthetic biology, RFID tags, and smart dust. This not, of course, a comprehensive list. What else may be coming?

Nobody can predict the future with complete accuracy, but educated guesswork about the future can still be helpful. Some people make it their business to watch trends in technology and other areas, in order to help people make better informed decisions about business, technology, or their careers. I asked two of these forward-looking thinkers what technologies are on the horizon that may be of interest to technical communicators—that is, as subjects we will be writing about rather than tools we will use to do our jobs.

Neil Perlin

Neil Perlin is well-known in STC. He writes the “Beyond the Bleeding Edge” column in *Intercom* magazine, and hosts panel discussions on the same theme at STC conferences. Here are some of the emerging technologies that he found to be the most interesting.

Web presence. “Anything can have a website.” A painting in a museum could have its own site, which visitors could access via a web-enabled cell phone to get information about the painting, and which might have a link to the museum store to see if there are any books about the artist in stock. The user manual for a consumer device might be on a website stored in the device and available via Bluetooth. A bus might have its own onboard server and a GPS link so that riders can receive alerts via cell phone when their stops are coming up.

Perlin writes, “This is based on a mix of technologies including bar codes and RFID chips to give users access to the objects’ web page, WiFi or Bluetooth enabled devices to access the pages, and even templates to possibly customize the information that gets presented based on what kind of device a user has, his native language, or other criteria.”

Device independence. Device independence, or DI, goes way beyond what we call “single sourcing” today. Perlin says, “DI would let us publish the same content to a mix of devices so that the users could access the same material on whatever device they

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owned or was most suitable for their situation. For example, you might want to see a particular web site on your PC while in the office but on a PDA or web-enabled cell phone while in the field, perhaps converted to audio for use in the field, etc.” This feature is already available to some extent in the cell phone industry, where certain content is displayed differently—or perhaps not displayed at all—depending on the capabilities of the particular device you are using.

“According to the W3C, there are about a thousand non-traditional devices (PDAs, cell phones, MP3 players, etc.) out there, and we’re headed toward a society in which users should be able to use any device, within reason, to access information,” says Perlin.

Carbon nanotubes. Perlin calls this “a truly weird technology but also one of the most interesting since they seem to apply to everything.” A carbon nanotube can be thought of as flat hexagonal lattice of carbon molecules that has been rolled into a tube only a nanometer or so in diameter. These nanotubes were only discovered in 1991. Theory suggests that these tubes will be extremely strong—stiff as diamond—and that a carbon nanotube can be a conductor of electricity or a nonconductor, depending on its particular structure. Samsung and several other companies are trying to create ultra-thin television and computer monitor screens by using large numbers of carbon nanotubes as microscopic electron guns. Other commercial and industrial products are sure to follow.

Shwetal Patel

Shwetal Patel is an independent researcher in Dallas who specializes in emerging technologies. I followed up with him on an article he wrote for Small Times, a nanotechnology trade magazine. In his opinion, the following technologies will also become important:

- Micro- and nano-structured membranes for biological (drug delivery) and energy (fuel cell)

applications.

- Mesoporous and nanoporous materials for fuel cell catalyst supports and hydrogen storage.
- Functionalized nano-surfaces such as bifunctional carbon nanotubes.
- Opto-electronic devices, recently being developed by Intel.
- Thermoelectric devices—alloys of semiconductors.
- MEMS (micro-electro-mechanical systems) and BioMEMS. These are tiny machines made with the same technology used to fabricate silicon microchips.
- Nanoparticles for drug delivery (such as those produced by Nanophase) and surface coatings.

Meetings

Our chapter holds a dinner meeting the second Wednesday of each month at the Shattuck Plaza Hotel, 2086 Allston Way, just west of Shattuck Avenue in Berkeley. The Hotel is across the street from the BART station at Allston and Shattuck. The cost for dinner and meeting is \$18 for members, \$15 for student members and \$21 for non-members. For those attending the meeting only, the cost is \$12 for members and non-members, \$10 for students.

6:00	Check-in, conversation.
6:30	Dinner.
7:15	Chapter business and announcements. Anyone can announce jobs that they know about.*
7:39	Formal program. Usually we have a speaker or panel of speakers on a topic related to the business or technology of technical communication.
9:00	Conversation, offline questions for the speaker, follow-up on job announcements
9:30	Clear the room. Move conversations to the sidewalk.

*Recruiters are welcome to attend meetings, place literature on a designated table, and talk with attendees one-on-one during the informal parts of the meeting. We ask them not to announce specific jobs during the formal announcement period, but they are free to stand up and identify themselves. Similarly, we ask anyone else with commercial announcements to confine themselves to calling attention to the availability of literature on the designated table.

- Solar cells (Konarka and Nanosys are two companies working on these technologies)
- Software for multiple processors on a single chip.

These two “futurists” obviously have different areas of expertise. Perlin is extrapolating from current computer software and networking technologies, while Patel is thinking in terms of nanotechnology. And these are educated guesses by knowledgeable people, not prophecies from the divine. Some of these technologies may turn into dead ends because of insurmountable technical barriers or unexpected competition from other areas. Think of the electric car and its limited driving range being far surpassed by the hybrid vehicle.

Joe Devney is a technical writer who works in the wireless industry and who is also interested in nanotechnology.

Other Organizations

American Medical Writers Association (AMWA) of Northern California. Meets periodically at various Bay Area locations. <http://www.amwancal.org>

American Society for Training and Development, Mount Diablo Chapter. Meets monthly in Danville. <http://mtdiablostd.org/>.

American Society of Indexers, Golden Gate Chapter. <http://www.asindexing.org/site/chapters.shtml#golden>

Association for Women in Computing, San Francisco Bay Area chapter <http://www.awc-sf.org/>

International Association of Business Communicators, San Francisco chapter. A network of professionals committed to improving the effectiveness of organizations through strategic interactive and integrated business communication management <http://sf.iabc.com/>

National Writers Union (UAW). A labor union for freelance writers of all genres. <http://www.nwu.org>

Northern California Science Writers' Association. Quarterly meetings and other events. <http://www.ncswa.org>

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Networking 6:00 Dinner 6:30 Program 7:15
Agenda

Allston Way at Shattuck Avenue, Berkeley
Shattuck Plaza Hotel
Location

Wednesday, January 12, 2005

The single-sourcing solution (writing information once and re-using it many times) for creating context-sensitive help.

January Meeting

The Society for Technical Communication
Berkeley Chapter
P.O. Box 1007, Berkeley CA 94701

Ragged Left

By BART:

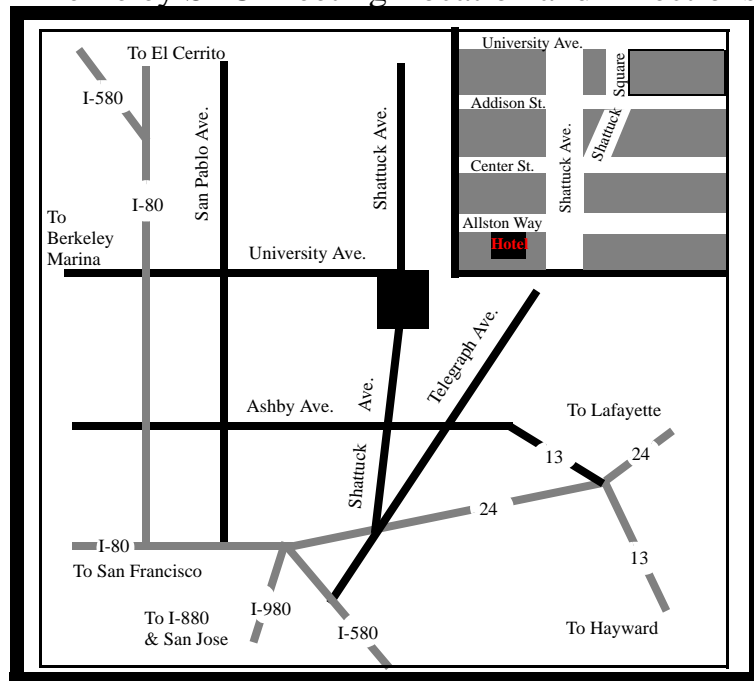
Get off at the downtown Berkeley station (Richmond line) and walk south to Allston Way, the first street. Cross the street and turn right.

By Car:

From north of Berkeley on I-80, take the University Avenue exit (east). Turn right on Shattuck Avenue. Allston Way is three blocks south.

From south of Berkeley, take 880 north from San Jose. Continue through Oakland on 880. Follow the highway as it curves sharply to the right (where traffic merges in) and becomes 980. Continue on 980 to Highway 24 (toward Berkeley and Walnut Creek). Take the first exit from 24 (Martin Luther King Jr./51st). Turn right on 51st and make an immediate left onto Shattuck. Proceed north on Shattuck 2.3 miles to downtown Berkeley. Allston Way is immediately before the BART station.

Berkeley STC Meeting Location and Directions



Walking to your car or BART?

We can't guarantee you an escort, but we'll try.