Arctic Village "Most Wired" On Earth

By Michael Brady

Willem Barents didn't set out to discover new land, but that's what he is remembered for. At age 45 he was one of the leading explorers of his day, and in May 1596 he set sail from the Netherlands, on his third voyage, to search for a northeast passage to Asia. In mid June, at nearly 80 degrees north latitude, he sighted uninhabited land, went ashore, planted the Dutch flag, described the land as *Spitsbergen* (Jagged Mountains) on his chart, and then sailed onward. News of that discovery reached Europe in the summer of 1597 upon the return of the expedition, following the death of its leader from scurvy.

The land that Barents had found was the largest island of an archipelago known to the Vikings, recorded in the Icelandic Annals for the year 1194 as *Svalbard* (Cool Rim). Historians speculate that Barents may have known about the Viking find so, depending on the historical viewpoint, in the late 16th century communication concerning Svalbard was sparse and took from slightly more than a year to more than four centuries to reach the rest of the world.


Pål Hermansen

Pål Hermansen

Two views of Longyearbyen

Today's scene could hardly differ more. Svalbard is inhabited and mapped. Ships call regularly; it has scheduled airline service; and its communications are voluminous, nigh instantaneous, and result in information spread round the world. With a population of about 1500, its provincial capital and main town of Longyearbyen arguably is the world's most wired community, thanks in part to two 20 Gbit/s fiberoptic submarine cables laid to the mainland this year.

Habitation and the communications it now supports came about because of Svalbard's unique geographical location northwest of Norway, between the Arctic Ocean, the Barents Sea, the Greenland Sea, and the Norwegian Sea. Like Hawaii, it is a group of eight main and numerous small islands, with a total land area of 24 335 square miles, about four times that of Hawaii.

Like Hawaii, it has mountains, but unlike Hawaii, two-thirds of its land is permanently covered by ice and snow. Warmed by the Gulf Stream that also gives Norway a benign climate for its latitude, Svalbard is as livable as Alaska. In the 17th through the early 20th century, Svalbard was the prime base for Arctic whaling, hunting, and
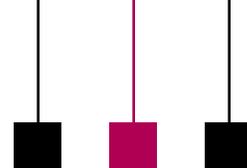
Rudy Joenk

This Issue

Nine volunteer reporters and photographers at IPCC 2003 are hereby granted heaps of Instant Fame and my sincere thanks for their reports and pictures that appear in this issue: especially reporter Debbie Davy and photographer Luke Maki, and also Roger Grice, Carol Johnson, Rudy McDaniel, Beth Moeller, Ken Newman, Sherry Steward, and Paul Tuten. Unfortunately, a few sessions didn't get reported, and for that I apologize. Maybe you will help expand the coverage next year in Minneapolis, Minnesota.

In a departure from our usual content, Michael Brady's article about Svalbard describes communications (note the *s*) north of the Arctic Circle. I thought it reasonable to give space to the North since we featured Jamie Hutchinson's story about the Antarctic in the September/October 2001 *Newsletter*.

I'm always interested in receiving proposals for single articles or columns. See the information for authors farther along in this column.

AdCom

The final meeting of 2003, including the AdCom's part of the annual election, took place 20-21 September in Lake Buena Vista (Orlando), Florida, just before IPCC 2003. See the President's Column on page 3 and the election results in the meeting summary on page 7.

Potpourri

Bookcrossing The idea is for someone to leave a book in a public place with a note for the finder (you) to log on to the *http://www.bookcrossing. com* site to record where and when you found the book and what you thought of it. After you've read it, you then "release" the book for a new reader, perhaps by giving it to a friend, leaving it on a park bench, in a coffee shop, or some other public place, or by donating it to charity. *World Wide Words*, 20 September 2003.

In about 1610, when Shakespeare used it to mean "fool," the word *geek* was a flat-out insult. By the 1920s geeks were circus performers who bit the heads off chickens. Later still,

geeks referred to socially inept outsiders (a.k.a. losers). Starting in the early 1990s computer-savvy types began to claim the word as their own, and geekiness became a badge of honor. As a *Mondo 2000* magazine article states, "Geek is the proud, insider term for nerd. If you are not a dedicated techie, don't use this word." *PCWorld*, August 2003.

Outgoing message on an answering machine: "Your call may be monitored for diction, idiom, and agreement of subject and predicate." After many hangups and meaningless messages, *may* was changed to *will not*. Sylvia Bernstein, *The New York Times*, 15 September 2003.

Four new editions of British single-volume dictionaries (from Chambers, Collins, Oxford, and Penguin) are reviewed at *http://www.worldwide words.org/reviews/re-fou1.htm*. [That's a "one" preceding the final dot.]

In Bhutan (at the junction of China, India, and Tibet), to prevent English words from encroaching on Dzongkha, the national language, the word *com-*

Beginnings and Endings

This column is full of beginnings and endings—mostly beginnings. We had a great AdCom meeting in September that resulted in a defined set of activities with a target launch for many items by the end of 2003 or in early 2004. The meeting also was my last as president of the society. Ed Clark will take over the reins in January 2004.

Beginnings

In May you were all invited to participate in the IEEE All Society Research Project. We received some fantastic feedback from those who chose to participate. At the AdCom meeting we went through all your comments, line by line, to see what you felt needed to be done.

All of the comments on the survey were sent to us—all 53 pages full. Before the meeting I categorized those comments into six groups: publications, education, trends in the field, membership, volunteers, and general. I then broke the AdCom into five groups covering everything except general. (All members had received a copy of the comments, including general, before the meeting.) Their task during the meeting was to categorize your comments and brainstorm new or revised products that PCS could offer to help satisfy the needs of members.

The two most difficult sets of comments to work through were *publications* and *trends in the field*. We know that, depending on your needs, you

are either a big fan of the *Transactions* or you could do without it. The same is true for the *Newsletter*. There was also an interest in more timely information. The *Transactions* is an archival research journal and serves its purpose very well. Its primary audience is academic researchers in the field of technical and engineering communication. Very few people read the *Transactions* cover to cover. Most will pull the journal out when they need to read a relevant article. The *Newsletter*, on the other hand, is geared more toward the practitioner. The drawback, however, is that we are writing articles six to eight weeks prior to publication, making it impossible to be very timely. The AdCom as a whole wrestled with some of these issues. The biggest discussion was that of an e-zine or a webzine. We have a group of people looking at what it would take to implement one of those.

Watch for PECom on the Web.

Conferences and education is one of the most exciting areas for us right now. We are looking into creating regional conferences or specialty conferences. One idea is to capture the PowerPoint presentations and accompanying audio from a stem at the IPCC and put this on our Web site for those who cannot travel to the conference. Any ideas for new conferences or regional meetings should be addressed to Ed Clark.

Our *volunteer* group found that people interested in volunteering would like small, well-defined tasks that

have a defined end. Committee and working-group chairs will keep this in mind as they develop their plans for the year.

The biggest *membership* challenge is that of chapters. You want them, but our membership base is so spread out that we feel the best way is to create virtual chapters or affinity groups.

The *Professional Communication Society Electronic Community* (PECom) is the place to create virtual chapters or affinity groups. PECom will be launched by the end of the year. It will replace our current Web site. We are tweaking the final design right now and have assigned editors to each of the four major sections, correlated to the four major audiences: people who want to conduct PCS business; researchers; practitioners and educators; and people looking to access services and resources.

We will be making extensive use of IEEE Virtual Community (VC) software to create forums and file sharing. The VC software also makes it possible to create working groups within committees, giving everyone a place to work and collaborate online. With over 40 percent of PCS membership outside the United States, online collaboration is the best way to get things done.

Finally, the AdCom created a Standards Working Group to identify areas where PCS can lead the development of IEEE Standards, such as IEEE 1063 on software documenta-

Arctic Village

(continued from page 1)

exploring. Then coal was discovered and from 1906 commercially mined by the Arctic Coal Company, founded by an American businessman, John Munroe Longyear, for whom the first mining settlement that became the main town is named. But in the late 20th century, it was communications that brought Svalbard presence on the globe.

An American Connection

The impetus came in 1960 with the NASA launch of the first earth observation satellite, the Television Infrared Observation Satellite (TIROS). Unlike communications satellites and some meteorological satellites in geostationary orbit, the TIROS spacecraft was in a low circular orbit at an altitude of about 600 km at a high inclination to the equatorial plane. The TIROS mission was so successful that it triggered the National Oceanic and Atmospheric Administration (NOAA) series of polar-orbiting earth-observation satellites and encouraged other agencies and other countries to launch earth-observation satellites in polar orbits.

The advantages of a satellite in a low polar orbit are that it can view both poles, which are out of the field of view of a satellite in geostationary orbit, and that its instruments can obtain images of the surface of the earth of far finer resolution than possible from the geostationary orbit at an altitude of 35 800 km. The disadvantage of a polar orbiting satellite is that it doesn't seem to hang fixed in

the sky, as does a geostationary satellite, but moves northward and then southward with respect to the surface of the earth while the earth rotates west to east under the orbits. That disadvantage can be overcome by locating an earth station to serve polar-orbiting satellites at a latitude far from the equator, where it can view more orbits.

The Antarctic has no permanent habitation, and the southernmost inhabited land, the Cape of South America, is no farther south of the equator than mid Ontario is north of it. But the Northern Hemisphere has land and people farther from the equator, so it offers more suitable sites. One of the first sites in the far north was at Tromsø, a city on the west coast of Norway, where an earth station was set up in 1967. It soon was busy because its location north of the

Mountaineering challenges year-round

Pål Hermansen

Arctic Circle enabled it to serve 10 of the 14 orbits per day of a satellite. The station's favorable location brought other activities, including being a local user terminal (LUT) for the COSPAS/SARSAT international, polar-satellite-based search and rescue system. Still, a station farther north would be better, as it could serve all 14 orbits per day without handing over access or control to stations elsewhere. That had been proven in practice. In 1967 the European Space Research Organization (ESRO), the predecessor of the European Space Agency, had set up an earth station at Ny Ålesund to serve its earth observation satellites. But in 1972, when the initial ESRO program ended, the station was disbanded due to lack of adequate communications with the mainland.

Svalbard was the ideal location for an earth-observation-satellite ground station, provided it could be linked to the high capacity backbone communications networks on the mainland. In 1976 Norway had leased transponder capacity on an Intelsat-IV satellite to set up Norsat A, the first domestic satellite communications system in Europe, for communication between the mainland and oil rigs

offshore in the North Sea. In 1979 Norsat A was extended to Svalbard via a purpose-built earth station in Longyearbyen, at 78° 16′ N, the administrative center and most populous settlement of the Svalbard archipelago. From then on, Longyearbyen enjoyed a quality of communications equal to that of most mainland cities. That led to the building in 1996-1998 of the Svalbard Satellite Station (SvalSat) and to setting up a dedicated link via Norsat B, the VSAT successor to Norsat A that could carry higher data rates. Station operations began in 1998 with one antenna; there

now are five, and SvalSat's long-term clients include the major earth-observation-satellite operators of the world, including NASA and NOAA.

By 2001 SvalSat and its parent, the Tromsø Satellite Station, had become privatized as part of Kongsberg Satellite Services (KSAT). SvalSat was swamped by its own success, as it downloaded and transmitted so much satellite image data that the annual costs of sending data to the mainland via satellite amounted to twice the station budget of some USD 3 million a year. Moreover, NOAA required

that its forthcoming satellites be served only by ground stations connected to the worldwide fiberoptic network. Accordingly, in 2003, submarine fiberoptic cables were laid 750 miles to the mainland, meeting the NOAA requirement and making Longyearbyen the world's most wired town.

Science and Communications Aplenty

Aside from the SvalSat station that controls and brings images from the satellites that peer down at the earth to monitor its atmosphere, lands, and

Further reading

Books are in English and Web sites either are in English
or have links on their home pages to bring up pages in English.

EISCAT near Longyearbyen: *http://www.esr.eiscat.no/*

Facts: World Factbook pages at *http://www.cia.gov/ cia/publications/factbook/geos/sv.html*

History of coal mining, SNSK: *http://www.snsk.no/*

Information on Svalbard: *http://www.sysselmannen.svalbard.no/*

Kongsberg Satellite Services (KSAT): *http://www.tss.no/home.html*

Norwegian Polar Institute: *http://npiweb.npolar.no/*

Place names: *The Place Names of Svalbard*, Tromsø, Norwegian Polar Institute, March 2003, 537 pages hardcover, ISBN 82-7666-194-7

Research facilities and projects: *http://npolar.no/ris/*

Rocket Range at Ny Ålesund, SvalRak: *http://www.rocketrange.no/rockets/svalrak.htm*

Sarepta satellite image service for schools: *http://www.sarepta.org/*

Satellite Station at Longyearbyen, SvalSat: *http://www.svalsat.com*

Svalbard pictorial and text overview: *Svalbard, Arctic Land* by Pål Hermansen, Oslo, Orion Forlag, June 2003, 200 pages hardcover, ISBN 82-458-0596-3 *[English translation by Michael Brady]*

University of Svalbard campus: *http://www.unis.no/*
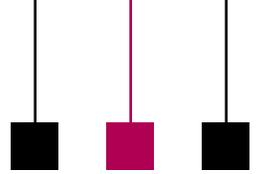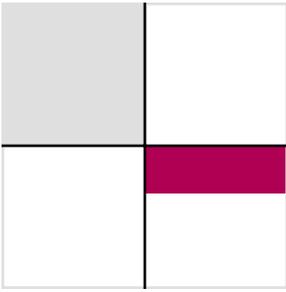
oceans, the facilities on Svalbard include a spectrum of scientific activities, all of which require quality communications. One of the three European Incoherent Scatter (EISCAT) radars for studies of the ionosphere is located at Adventdalen, near Longyearbyen. The mainland Norwegian universities have joined to set up a campus on Svalbard (UNIS) dedicated to Arctic studies and research. Sarepta, the Norwegian Space Centre educational Web site, now supplies earth-observation-satellite images and educational materials to more than

2000 schools throughout Europe. And NOAA, NASA, the Canadian Space Agency, and other national space organizations regularly receive their satellite images via Longyearbyen.

At Ny Ålesund, north of Longyearbyen, the Svalbard Rocket (SvalRak) range is now the launch site of choice for scientific studies of the day-side aurora and processes in the magnetosphere. Many countries, including Japan, Russia, and the U.S., maintain Arctic research groups at Longyearbyen and at Ny Ålesund, which now claims to have the world's high-

est percentage of higher degreed inhabitants. Vestiges of its coal mining past remain, but Longyearbyen now offers all the comforts of a college town on the mainland, from multichannel cable TV to a cappuccino café to a take-out pizza service to a stretch limo that cruises its six miles of road. A livable place, thanks to communications.

KSAT

Right:
SvalSat station overview

Below:
Polar bears roam the archipelago

Pål Hermansen

President's Column

tion (a Computer Society-led effort). Mark Haselkorn will lead this effort.

Endings

I hope you notice there are a lot more beginnings than endings here. This is my last column as president of PCS. The past two years have brought challenges and a lot of excitement. I feel that we have a better idea who our members are and what we can do to serve you better. We just need to implement these fantastic ideas. I am looking forward to the next two years of being immediate past president because it means I can spend more time actually working on some of these projects. After that, only time will tell.

Amzanig!

Aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it deosn't mttaer inwaht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is that the frist and lsat ltteer be at the rghit pclae. The rset can be a total mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrods as a wlohe.

Amzanig, huh!

— *Author unknown; submitted by Luke Maki*

Highlights of the September AdCom Meeting

By Jean-luc Doumont

If the AdCom arrived at Walt Disney's Coronado Springs Resort two days before the IPCC 2003 started, it was not (or not only) to enjoy the Magic Kingdom and other theme parks; we convened for our September meeting on Saturday, 20 and Sunday, 21 September. We were pleased to welcome two PCS members interested in seeing how the AdCom works: one from nearby (George McClure, from the Orlando area) and one from farther away (Michaël Steehouder, from the Netherlands). We always value the opinions of the members we serve, so we hope to welcome more members at our meetings in the future. Interested? Simply contact the PCS secretary for practical arrangements.

Besides taking care of current affairs, such as treasury and conference planning, we spent much of the meeting analyzing the results of the IEEE All Society Research Project (ASRP), an online survey that some of you filled out last June.

Treasurer's Report

Despite going against established practice, the deficit budget submitted for 2004 by our treasurer, Steve Robinson, has not been rejected by the IEEE. We are therefore confident that they understood our reason for such a budget, namely, that "you've got to spend money to make money." We plan several new initiatives that, we believe, will increase the benefits of membership, such as a Web-based educational project and an involvement in the development of IEEE Standards.

Elections

With 18 members serving interlaced three-year terms on the AdCom, six members are up for (re)election every year. Last year for the first time, three of those six members were elected by the membership at large. This year 23 members voted electronically in July and August—a 65 percent increase compared to last year's 14 voters, but still less than two percent of our membership. They reelected Marj Davis, Mark Haselkorn, and Bob Krull. At the September meeting the AdCom then elected Michaël Steehouder and Kirk St.Amant and reelected Sherry Steward. Many of you know Michaël as an associate editor of our *Transactions* on questions of applied linguistics and document design. Similarly, you may know Kirk for his many contributions to the *Transactions* and to other journals of our field. Congratulations to all and welcome on board, Michaël and Kirk!

As for officers, the AdCom elected Ed Clark (the current vice president) as president and Luke Maki (the winner of this year's Schlesinger award for distinguished service to PCS) as vice president. We all look for-

Top: *Marj Davis, Thomas Orr, Mark Haselkorn, Sherry Steward, Ed Clark (foreground)*

Left: *Philip Rubens, Bernadette Longo*

ward to serving under their leadership in 2004.

Conferences

With only 94 advance registrations, IPCC 2003 attracted fewer attendees than anticipated, most probably because the promotional material was mailed much too late for reasons beyond our control; potential attendees received it at best a mere few days before the conference, if not after it. The gloomy economic climate of these last years does not help, either; employers who used to cover conference expenses may no longer do so. This being said, conference coverage elsewhere in this *Newsletter* should show that the number of attendees had no direct impact on the quality of the sessions. On the contrary, the somewhat familial atmosphere probably led to richer interaction. As for the impact on our finances, it should be limited.

By the time you read these highlights, IPCC 2004 will be next in line. To stay up to date on the frontiers of our field, plan to be in Minneapolis, Minnesota, from 29 September to 2 October 2004. Conference chair Bernadette Longo and her committee are working hard to make it a memorable conference. Beyond securing an outstanding keynote speaker in the person of Bill Horton, they are counting on you, for a conference is largely what attendees make of it. If you would like to present a paper, speak as part of a panel, or run a

workshop, please note that the deadline for proposals is 15 January 2004, which is earlier than in previous years (see the call for papers on page 31).

While you are at it, you may want to mark 10–13 July on your 2005 calendar, too. Those are the

dates we set for IPCC 2005 in Limerick, Ireland, a place that lends itself well to combining your conference attendance with a family vacation. Logically, conference chair Marj Davis is hoping to attract more non-U.S. attendees than usual. If you are based outside the U.S., particularly in Europe, we hope you will publicize the event around you.

As you know, successful conferences must be planned long in advance. IPCC 2006 is now confirmed for 21–25 October 2006 at the Gideon Putnam Hotel in Saratoga Springs, New York, with Beth Moeller as con-

Top: *George Hayhoe, Jean-luc Doumont*

Left: *George McClure, Kim Campbell, Ed Clark*

ference chair. We also made preliminary plans to return to the west coast for IPCC 2007: Mark Haselkorn proposed holding it in Seattle, Washington, and was designated conference chair.

Analyzing Member Feedback

Much of our meeting was devoted to analyzing the feedback provided by our members as part of the ASRP survey. As Beth Moeller explains in more detail in the President's Column on page 3, we brainstormed in subgroups on publications, education, trends in the field, membership, and volunteers.

Without surprise, your comments reminded us of the diversity of our membership and of the corresponding difficulty in serving everyone, espe-
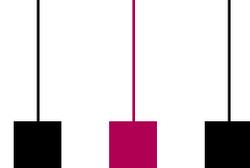
Peter Reimold and Cheryl Reimold

Tips for Making Writing Easier

Part 5: Quick Editing for Organization

In our previous column we showed you how to save time and effort by following a systematic once-through editing sequence that moves from the large picture down to the details. Now let's look more closely at the first part of this sequence: editing for organization. Done right, this can be a quick process that not only makes your message more accessible but also cuts down on the need for later style editing.

The Big Touches

Your first task is to find or add your *main message* and move it to the front. Often you can find that message buried at the end of your piece. Next, make sure your major points are *arranged in order of their importance* to the reader. If not, take the blocks and rearrange them. Then apply the same principles again to each block (section and paragraph): main message first, details or backup arranged in order of importance.

Benefitting from Headings and Lists

In drafting your piece you may have become chatty, with wordy sentences and long paragraphs. Even in a two-page memo, adding headings and breaking text into lists can make your piece concise and businesslike. Most of all, it lets you steer the reader's process of *skipping* in such a way that no important part of your message will be lost.

Readers tend to skip from the beginning of one unit to the next. There-fore, if each unit starts with its main message, your key points will hit home. Headings and lists further improve this by creating many small units that trip up "skippers."

An Example

Here is an example that illustrates these editing techniques. Suppose your team has evaluated the cost and effectiveness of two safety training methods: (1) traditional classroom lecture and (2) a quiz-game-show approach using video based on real company facilities and equipment. Two comparable groups were involved in a year-long test; group A was trained only with method 1 (traditional), group B only with method 2 (quiz game). Your draft report includes the following two paragraphs:

Safety incidents in group B were 62 percent lower than in group A. "Safety can be fun" was a recurring theme in group B, whereas group A tended to regard safety as a drag. However, preparation was viewed as more demanding of time and creativity in group B. The increase in preparation time was estimated, on average, to be 250 percent. On the other hand, many respondents reported significant side benefits from the preparation. Notably, their own attitude toward *providing* safety training improved. Finding volunteers to deliver the training was easier than in group A. Team spirit and cohesiveness of work groups improved. Fewer formal complaints were filed by both supervisors and subordinates, indicating less tension. In sum, method 2 proved far superior in effectiveness and also attitude, though more costly.

> Ordering points by importance and using headings and lists can transform chatty prose into useful, business-oriented communication.

Evaluation of benefits vs. costs is intrinsically a qualitative matter. However, the evaluation team believes the greater cost is clearly outweighed by the benefits, especially the drastic reduction in safety incidents. We therefore recommend using the quiz-game-show approach throughout the company.

Once you place your main message at the beginning of the paragraph, you will find yourself automatically eliminating tangential or unnecessary points. Then you can go straight to the bulleted lists that detail the information stated in your new opening paragraph:

Method 2 proved far superior in effectiveness and also attitude, though more costly. Since improved safety was the highest priority of this project, we recommend using this method for all routine safety training.

Benefits of Method 2 (Quiz Game Approach)

• Safety incidents in group B were 62 percent lower than in group A.

• "Safety can be fun" was a recurring theme in group B, whereas group A tended to regard safety as a drag.

• Employees' attitude toward *providing* safety training improved.

• Finding volunteers to deliver the training was easier in group B than in group A.

• Team spirit and cohesiveness of groups improved.

• Fewer formal complaints were filed by both supervisors and subordinates, indicating less tension.

Costs of Method 2

• Overall, preparation was viewed as
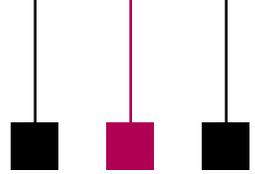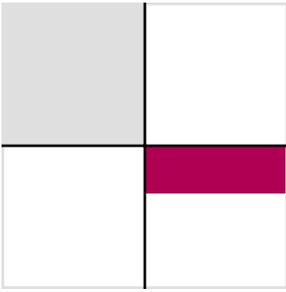
extremely demanding of time and creativity.

• The increase in preparation time was estimated, on average, to be 250 percent.

Moving unit messages to the front and introducing headings and lists

makes the information accessible even to notorious skippers.

Cheryl and Peter Reimold have been teaching communication skills to engineers, scientists, and business-people for 20 years. Their firm, PERC Communications (+1 914 725 1024,

perccom@aol.com), offers businesses consulting and writing services, as well as customized in-house courses on writing, presentation skills, and on-the-job communication skills. Visit their Web site at http://www.allabout communication.com.

From the Editor

puter is being replaced by *logrig*, which combines native words for "an intelligent machine run by electricity." *The New York Times*, 12 September 2003.

Lectures, interviews, and other recorded media events are examples of what can be found in the "online speech bank" at *http://american rhetoric.com*. Nearly all of the Top 100 American Speeches there are political.

Many hundreds of recently available idiomatic Web addresses are listed at *http://www.marcfest.com/idiomatic domains*. Be sure to *communicate freely.com* or *talkyourwayoutofthis one.com*.

Puzzleblog at *http://everythinghurts/ scrabblog/* challenges you daily to make a high scoring word from seven Scrabble tiles, but you have to fit your word into the section of board provided. *The New York Times*, 25 September 2003.

joggernaut *n.* A hyperactive astronaut who, when ordered to undertake a space walk, can't resist the urge

to run instead. SPELL/*Binder*, May-June 2003.

Is your city literate? Jack Miller, chancellor at the University of Wisconsin Whitewater, compiled statistics for 64 major cities in five categories: number of booksellers, use and public support of libraries, percentage of citizens with high school and bachelor's degrees, number of periodicals published, and daily newspaper circulation. Those numbers were then put on a per-capita basis for better comparison. The top five cities in order are Minneapolis, Seattle, Denver, Atlanta, and San Francisco. Patti Thorn in the *Rocky Mountain News*, 16 August 2003.

The U.S. Library of Congress produces ***Wise Guide***, a monthly Web magazine at *http://www.loc.gov/wise guide*, to introduce readers to the library's online materials.

"Only someone whose been as broke as I was could appreciate how happy I am." This is how the *Rocky Mountain News* (28 June 2003) reported a comment J. K. Rowling made to *Newsweek*. The newspaper didn't

answer my query so maybe the error was theirs rather than *Newsweek*'s.

What do these words have in common: *age, blame, curb, dance, evidence, fence, gleam, harm, interest, jam, kiss, latch, motion, nest, order, part, quiz, rest, signal, trust, use, view, win, x-ray, yield*, and *zone*? All the words can be used as both nouns and verbs. Posed and answered by Misty Covington in the Ask Marilyn (vos Savant) column in *Parade Magazine*, 22 June 2003.

"…a round of simultaneous monologues, known in the vernacular as a debate." *The New York Times*, 26 September 2003.

Information for Authors
One thousand words makes a nice page-and-a-half article, though longer and shorter articles may be appropriate. Proposals for periodic columns are also welcome. Write about what you know, things that you're familiar with. If you live outside North America, consider writing about technical communication in your country. You needn't be a PCS member to contribute.
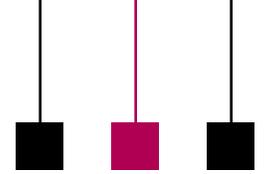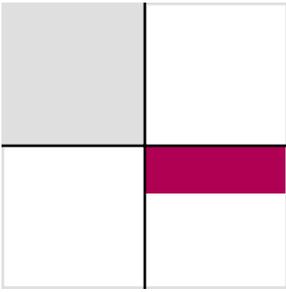
If you use a wp program, **keep your formatting simple;** multiple fonts and sizes, customized paragraphing and line spacing, personalized styles, etc. have to be filtered out before being recoded in *Newsletter* style. Headers, footers, and tables lead the casualty list. **Embed only enough formatting and highlighting (bold-face, italics, bullets) to show me your preferences.**

If you borrow text—more than a fair-use sentence or two—from previously published material, you are responsible for obtaining written permission for its use. Ditto for graphics. Always give credit to the author or artist.

The *Newsletter* issues on our Web site (*http://www.ieeepcs.org/news letter.html*) can be used as examples. Issues are posted about one month after distribution of the print version and now have active e-mail, Web, and table-of-contents links.

I prefer to receive articles by e-mail; most WordPerfect, Word, RTF (rich text format), and ASCII files are acceptable. My addresses are in the boilerplate at the bottom of p. 2 along with our copyright notice.

Deadlines

The 15th day of each odd-number month is the deadline for publication in the succeeding odd-number month. For example, the deadline is 15 January for the March/April issue, 15 March for the May/June issue, etc. You won't be far off (and never late) if you observe the Ides of January, March, May, and so on.

Breaking Ciphers

The IEEE Milestones in Electrical Engineering and Computing program honors significant achievements in electrical, electronic, and computer engineering. Upon approval by the IEEE, a bronze plaque commemorating the achievement is placed at an appropriate site. Currently there are 51 Milestones around the world to foster awareness among electrical engineers of their professional history, to increase public understanding of electrical engineering, to encourage the preservation of historically important materials and sites, and to collect documentation of significant historical events and make the information widely available.

One of the recently approved Milestones is Bletchley Park in Buchinghamshire, England (initiated by the U.K.R.I. section), venue of code breaking by the Allies in WW II. There is a Web site maintained by Tony Sale where you can try your hand at breaking real Enigma ciphers, as well as find out more about the history of cryptography: *http://www. codesandciphers.org.uk/anoraks/ scenios.htm.*

Highlights of September AdCom Meeting

cially with benefits addressed to all members. In this category are our two publications: this bimonthly *Newsletter* and our quarterly *Transactions*. In line with IEEE-wide debate and independently from the All Society Research Project, we had already initiated discussion about both the content and the delivery of our publications, with such questions as "What combination of material can or should be included in our *Transactions*?" and, especially, "Can we take advantage of current technology to deliver information more timely, more efficiently, or more conveniently?" We do not have all the answers yet, and we would not want to embrace electronic delivery merely as a fad or as a cost-cutting measure. Still, chances are you will see changes in our publications sometime next year.

Future Meetings

In 2004 the AdCom will convene by conference call on 24–25 January; probably in Philadelphia, Pennsylvania, in early June (place and dates to be confirmed); and in conjunction with IPCC 2004 in Minneapolis, Minnesota, on 2–3 October.

All PCS members are welcome to attend AdCom meetings. If you would like to see your leadership at work, just let your secretary know.

Jean-luc Doumont is PCS secretary.

Developing Effective Presenters I: Tips for Managers

By Jason Palmeri and Paul Tuten

Whereas our other columns have spoken directly to presenters, we now address managers. In this column (the first of two on the topic) we offer three managerial tips for developing effective presenters within an organization.

1. Make Time for Critical Reflection

In the corporate world, speakers often jump from presentation to presentation at a whirlwind pace. While organizations value the time speakers spend presenting, they often do not allow time for speakers to critically reflect on their own presentation practices, thereby neglecting valuable opportunities for organizational learning. To increase presentation effectiveness, managers should incorporate written and spoken opportunities for critical reflection into the speaking process. Before a presentation is given, speakers should have the opportunity to reflect upon their persuasive goals and how they intend to achieve them with their *specific* audience. After the presentation, speakers should have a space in which they can explore why their persuasive objectives were or were not met. Ideally, these critical reflections should take place both in writing (perhaps on guided forms) and in oral meetings. Written reflections are particularly helpful for creating an organizational memory of key learning and for allowing time for more in-depth analysis. In contrast, oral reflections are useful because they allow for dialogue among numerous participants and they often take less time than writing.

2. Provide Formative and Summative Feedback

To improve, speakers need regular formative and summative feedback on their presentations. *Formative feedback* occurs while a presentation is still in development (when the speaker is brainstorming ideas or has just completed a draft of slides). At this stage the manager does not focus on evaluating the speaker; rather she collaborates with the speaker in improving the presentation. While formative feedback can take the form of specific suggestions or instructions, it can also involve a manager's asking probing questions designed to invite presenters to reflect on such issues as their persuasive objectives, their audience characteristics, and the limitations of their boilerplate slides. By asking questions of presenters when they are still in the preparation stage, managers can encourage critical thought and ensure that they and their staff are "on the same page" about presenting tactics.

Whereas formative feedback is essential, it will not be successful unless it is accompanied by *summative feedback:* evaluative comments given after a presentation is completed. In providing summative feedback, managers should give constructive, specific suggestions for improvement,

> Constructive, specific feedback both before and after a presentation is most effective.

rather than vague generalizations. Consider the following two comments: (1) "Your presentation was not very engaging." (2) "If you used more narrative examples in addition to quantitative data, you could engage your audience more." The first comment would likely produce confusion and frustration whereas the second, more specific comment is much more likely to produce identifiable change in a presenter's practices. While suggestions for improvement are essential, managers should also provide specific positive comments, which reinforce successful presenting practices.

To be most effective, formative and summative feedback should be interrelated in a continual, cyclical process. If a manager gives a formative suggestion, she should follow up with a summative evaluation of how well the suggestion was implemented. Furthermore, if a manager identifies some key challenges for a presenter when giving summative feedback, she should focus on helping the speaker overcome those challenges when she gives formative feedback on the next presentation.

3. Collect Multiple Forms of Audience Feedback

Many organizations distribute surveys to solicit feedback from audiences. Surveys can be an effective way of uncovering particularly strong presenters. They are also a useful

tool for identifying needed areas of improvement. While many audience surveys consist only of Likert scales (numerical rankings of particular criteria), numeric data alone is very limiting as it provides only a baseline indication of audience response and no elucidation of the reasons *why* the audience responded as they did. By asking open-ended questions, which call for written answers, managers can gain more insight into the thought patterns and concerns of their audiences. Yet even open-ended questions are limited; audiences many not take the time to answer them or they may omit critical feedback for the sake of politeness. Thus, to gain

a more nuanced understanding of audience response, managers should also consider appointing an "audience watcher" who observes and takes notes on audiences' verbal and nonverbal responses during a presentation.

Whereas numeric data are relatively easy to analyze and report, data from open-ended questions and audience response notes can be so voluminous that it can be hard to boil down. To make the best use of this kind of data, managers (or their appointed representatives) need to read the data and note recurring patterns of either successful or unsuccessful present-

ing practices. Once the patterns are identified, managers and presenters should brainstorm together what specific improvements or changes should be made in light of those patterns.

Paul, an AT&T employee and information systems doctoral student, is a subject matter expert and frequent presenter on networking technologies, specifically virtual private networks. Jason is an experienced professional writer/trainer and a graduate student in rhetoric and professional communication at Ohio State University. Paul can be reached at tuten@nova. edu; Jason is available at palmeri.2 @osu.edu.

The Die Is Cast

I am reminded of an observation I made when I taught courses trying to induce engineers to write well. I found a means for separating the literary culture from the scientific culture.

To separate the scientific and literary communities, I developed a test question: "What does the statement 'The die is cast' mean literally?" One of the braver of the engineers in the class would volunteer that "The die is a form. It means that the die made all later castings the same." Meanwhile, a chance-literati in the back row would begin to wave his hand in opposition, shouting, "No! No!" I would call on him to hear him explain that die was the singular of dice. "It means that you have thrown the die and whatever number has come up, that is what you're stuck with. From here on things won't change!"

In other words, the scientific community takes the word *die* and sees it as part of the art of "die casting." I found that the typical engineer had the die casting model in his head and did not realize that die and dice were related. I tried this test numerous times in my 10 years of teaching many wide-ranging classes of technically trained students.

—Joe Chapline
Newbury, New Hampshire

Haiku Error Messages—

A crash reduces
Your expensive computer
To a simple stone.

Serious error.
All shortcuts have disappeared.
Screen. Mind. Both are blank.

If this copy of the *Newsletter* you're reading isn't yours, consider joining the Professional Communication Society as either a member of the IEEE and PCS or an affiliate of PCS. Visit our Web page (*http://www. ieeepcs.org/membership.htm*) for information; applications are online. On the other hand, if this copy is yours, please lend it to a friend.

Virus-Free Computing Is Your Responsibility

By Elizabeth Weise Moeller

The idea for this column literally hit me. Since 19 August, when the first wave of the SoBig.F worm hit the Internet, I received over 10 000 copies of the virus. A friend has received almost 200 000 copies of the virus. How do I know? My antivirus software was up to date and warned me every time the virus arrived in my mailbox—until I told it to be quiet and just delete those messages.

The problem my friend and I are having is not that we have the virus on our computers, it's that people with our e-mail addresses in their address books have infected computers. Once the virus picked up my e-mail address, I started getting nailed with it. Since this virus also randomly chooses an e-mail address and pretends to originate from that e-mail address, I started to also receive many bounced-back versions saying my message was undeliverable. The end result to me:

• *Lost hours*—I lost countless hours clicking the little Quarantine button in my antivirus software, deleting at least 1000 e-mail messages related to the virus, making sure my employees all had up-to-date antivirus software, and scanning my system just because I'm paranoid and wanted to make sure I wasn't one of the infected systems causing problems.

• *Possible lost business*—Due to the amount of e-mail I was receiving, my in-boxes would fill up within four hours. When my in-box fills

up, legitimate e-mail is bounced back to the sender saying my mailbox is full, try again later. Therefore I was keeping my e-mail program open and checking 24 hours a day, but sometimes it still couldn't keep up. When the hosting company for my mail server installed checking on their end, this problem became less prevalent.

CNN reported that hundreds of thousands of computers have been hit with the virus, doing USD 50 million damage, grounding Air Canada for a short time, and literally shutting down e-mail to hundreds of companies worldwide (*http://www.cnn.com/2003/TECH/internet/08/21/sobig.virus/index.html*).

This is the fastest growing virus ever and it is considered by many experts to be a test for using unsuspecting computers as relay hubs for spam messages (possibly already in the works by the time you read this column).

Protecting Yourself

This type of virus feeds on unsuspecting home and small office users who feel their connections are relatively safe and therefore do not have the pieces in place to disrupt an intrusion such as the SoBig.F worm. However, even larger companies can be at risk if the virus manages to slip through a firewall. Once one person in a company has the virus, it is likely that everyone in the company will have it sooner or later. Picture

your child's elementary school as the first head cold of the season works its way through the classroom.

Antivirus Software

The first step in protecting your computers is to have reliable and up-to-date antivirus software installed on your computers. Antivirus software, to be effective, relies on users' updating the software periodically. Symantec's Norton AntiVirus (*http://www.symantec.com*) uses a feature called *Live Update* to keep the software up to date. Periodically it checks the Symantec server to compare the current version with the one installed on your computer. If there is a newer version on the server, *Live Update* grabs the newer version and installs it on your computer. This requires a yearly subscription, which is minimal in cost. McAfee (*http://www.mcafee.com*) has a similar system for keeping its virus definitions up to date. It is extremely important that antivirus software be kept up to date. Reputable vendors issue an update as soon as possible after a new virus is identified. Those updates are often available before the virus becomes as widespread as SoBig.F did.

System Updates and Settings

Many viruses target vulnerabilities in the Microsoft Windows operating system. Microsoft keeps track of these and offers regular security updates (*http://windowsupdate.micro*

> It is your computer and your responsibility.

soft.com). It is extremely important to make sure that the operating system is current with security patches.

Many viruses thrive simply because Microsoft users have their e-mail preview pane open. The preview pane allows users to see a list of their messages in part of the screen while previewing a selected message in the other part of the screen. To preview a message, the mail program needs to open the message and can thus activate the virus. Therefore it is important that users turn off the preview pane function in their mail programs.

Firewalls

There are two kinds of firewalls: hardware and software. When properly installed and configured, a hardware firewall essentially hides your computer from the Internet. It only allows information to travel through specific pathways or ports. Hardware firewalls will return only data that has been requested. They will not allow other information through.

This is one reason that e-mail has become such a popular virus transmission method: e-mail is always allowed in or out.

A software firewall, such as Zone Alarm (*http://www.zonelabs.com*), Norton Personal Firewall (*http://www.symantec.com*), or McAfee Firewall (*http://www.mcafee.com*), also effectively hides your computer from the rest of the Internet. When you set up a software firewall, you are asked which programs are allowed to access the Internet. When a new program tries to access the Internet, you see a window asking permission for that program. These programs also block your computer from hackers trying to find open ports they can use to relay spam or hide pirated music, software, or movies. Firewalls are most important for users who connect to the internet via DSL or cable modems, though dial-up users are also at risk. Since computers connected via DSL or cable are almost always on, their risk is much higher.

Who's Responsible?

While federal officials are trying to find and arrest the person (or people) responsible for this latest attack, the people ultimately responsible are those who do not take the threats seriously. If you use the Internet, you need to protect your computer. That means, at the bare minimum, keeping your antivirus software and operating system up to date and not using the preview pane in your e-mail program. You cannot rely on your Internet service providers to do this for you. They do their best, but they cannot always catch everything. It is ultimately your computer and your responsibility.

Elizabeth Weise Moeller is president of PCS. She owns Interactive Media Consulting, LLC (+1 518 587 5107, beth@imediaconsult.com), a World Wide Web and Internet training firm in Saratoga Springs, New York, which provides Web site design and Internet training for businesses in the northeast.

Google to Display IEEE Abstracts in Search Results

The Google search engine now displays content from IEEE scholarly journals and other publications in relevant keyword search results. Google is indexing the abstract records for all online IEEE technical documents and standards available through IEEE Xplore. *[I found papers from the IEEE Transactions on Professional Communication included. Ed.]*

"The worldwide scientific community will greatly benefit from this agreement with Google," said Dr. Michael S. Adler, IEEE president. "Google is the largest search engine on the Web, and IEEE publishes the most important information in electrical engineering, telecommunications, and computer science. Researchers in these fields will have a new way to locate IEEE articles and papers in addition to the tools they already have from their academic or corporate libraries, or as IEEE members."
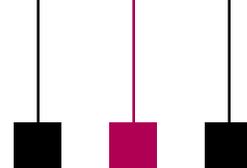
Jean-luc Doumont

The Microsoft Equation

Asked recently to review a document, I commented against the underlining of e-mail addresses and URLs in it, a creeping Microsoft habit that scars the text and makes these hard-to-read pseudowords still harder to read. My comment was greeted with skepticism. "Look," the author said, "nowadays everyone is working with Microsoft Office. People are used to seeing blue, underlined e-mail addresses and URLs, so they have grown to expect it. Hence we should definitely do it: We must adapt to our audience." Underlining thus stemmed from a good intent, but a misdirected one. Clearly, not everyone is working with Microsoft Office. Those who are may well have turned off all those automatic features that change what you type without asking you first. More important still, the fact that (some) people are used to something does not make it a desirable feature.

The argument in favor of underlining hyperlinks illustrates what I have come to call *the Microsoft equation*: an indiscriminate belief that what is popular is necessarily good. The reality is not so, of course, and examples to the contrary abound. Smoking is still popular in many places on the planet, but it is definitely not good for you. The video format that won the popularity race, VHS, was technically not the best. Conversely, wise political decisions may well be most unpopular. Unfortunately, the products that are bought (or the politicians who are elected) are the most popular ones, not necessarily the best ones.

The "popular = good" equation may contaminate the way we adapt to our audience. Adapting, indeed, is not imitating: It is about purposes, not about symptoms. In other words, it requires discernment. When I was teaching public speaking at Stanford University, one of my students had a major problem with filler words (*um*s and *er*s). When I took up this issue with him in tutorial, he explained that he did not use filler words in his native China. When he came to study in the United States, however, he noticed that most of his professors used filler words as they lectured, so he figured that theirs was the distinguished way to speak English, and adopted it. The case for underlining URLs is a similar story.

> Adapting is not imitating.

Proposing something new may require the audience to get used to it, but may well be an obliged route to improvement. A few years ago, an insurance company wanted to move from a Windows interface to a Web one for the application used by its network of dealers and asked several consultants to propose a design for the new Web interface. One consultant faithfully mimicked the Windows interface, whereas I proposed something different that used the logic of the Web instead. The client was enthused by the new possibilities my design opened, but wanted the opinion of the dealers. Alas, they did not receive much time to try the options. At first sight, they logically preferred what looked familiar, even if imperfect. All opportunity for improvement had thus vanished.

One difficulty in our effort to adapt to our audience is the possible difference between what they want and what they need. This difference is particularly striking for services. Perhaps because they are so used to off-the-shelf shopping, clients (including internal ones) tend to ask for what they think will solve their problem, instead of explaining what the problem is and asking for advice. Whenever a client tells me, "We need a workshop on […]," I used to answer, "Sure, I can provide that." Now I ask candidly, "What makes you say that?"

Identifying the needs as opposed to the wants may well be the ultimate form of adapting to one's audience. I was surprised to find out recently how companies that might seem primarily image-driven began to realize the importance of needs, not wants, to keep customers coming back for more. A reader of this *Newsletter* (who preferred to remain anonymous) was telling me how his department's job is to discover how customers actually use the product. With this information, they help the designers create products that better address the customers' needs, and also help the testing departments tailor their tests to actual customer use—so much more than asking people what they want, then going with "popular requests."

Dr. Jean-luc Doumont teaches and provides advice on professional speaking, writing, and graphing. For over 15 years, he has helped audiences of all ages, backgrounds, and nationalities structure their thoughts and construct their communication (http://www.JLConsulting.be).

Words and Names: What's the Difference?

We all know that it's easy to mix up words and names in everyday speech. For example, the Professor often finds herself saying things like "I need to fedex my fountain pen to Parker for repair." The Professor could launch into a long lesson on how this type of usage dilutes the effectiveness of trademarks, but that's not the point of this lesson, nor is the Professor interested in sounding too much like a lawyer.

Although trademarks can be a fascinating subject to discuss over a second bottle of wine, today the Professor is more interested in clarity and task orientation. These lessons explore our tendency to replace real words with the names of commands, widgets, and other product-related features. This tendency usually results in shorter prose, but it makes our writing less clear and less focused on the user.

Lesson 1

Consider this sentence:

You can use the DROP statement to drop a table.

Does anyone think it would be more clear to write it like this:

You can DROP a table.

The Professor thinks not. For one thing, if you try to replace the verb _drop_ with the SQL statement DROP, how do you conjugate the SQL statement as you would a verb? For example, would you say:

If you DROPped the table…. If the administrator DROPs a table….

No. You would not say that; you would say:

If you dropped the table…. If the administrator drops a table….

Ah! See how much easier it is to write clearly when you use verbs as verbs instead of using commands, statements, or keywords as verbs? What's more, the award-winning book _Developing Quality Technical Information_ tells us to focus on real tasks, not product functions. The user wants to drop a table; the task is dropping a table. The statement that the user uses to drop the table is the DROP statement. The task and the statement are different things and must be treated in text as such. Otherwise, you force your user to speak in your own product-centric slang. Just because your developers speak this language does not make it an official language. Trust the Professor on this one; she has met your developers.

Lesson 2

Consider this sentence from the Web site of the Professor's favorite pizza parlor:

Specify a Delivery time for the pizza.

In this case we don't have a verb to conjugate, so the problem is harder to see. This sentence uses a field name as words in text. This is a lazy way of writing that expects the user to make the logical leap that _Delivery time_ is the name of the field where you specify the time that you want the pizza delivered. The writer is taking advantage of the similarity between the field name and the words to describe what goes in the field. The writer might think this play on words is charming or even brilliant, but the Professor is not amused. The Professor wonders how this sentence would be translated. It could be translated to something like:

Specify a Choose the hour to be delivered for the pizza.

Try recasting the sentence so that you use the field name as a field name and real words to describe what goes in the field. Simple enough:

In the Delivery time field, specify the time that you want the pizza to be delivered.

The Professor must wrap up this lesson before her pizza gets cold. She trusts that you now have a keen grasp of the difference between words and names.

PCS Newsletter

Walt Disney World, Florida

IPCC 2003 was held at the Coronado Springs Resort in Lake Buena Vista, Florida, with the awards ceremony at Epcot. The weather was great and everyone had more than enough to see and do and eat.

Photographs are by Luke Maki unless otherwise attributed.

Chrissy Kuhen, IEEE Press

Yana Keyzerman

Reception

Paul Dombrowski

Jo Mackiewicz

Carol Johnson

Heather McNay

Susan Springfield

Peter Kincaid, keynote speaker

Karla Kitalong

Edward Scott

J. D. Applen, Bernadette Longo

Reception

Larry Strianese, Renee Capon, Bill Albing (registrars)

The "Wall Gang"

Kathryn Riley, Frank Parker

Kim Campbell

Stephanie Rosenbaum, Michaël Steehouder, Jean-luc Doumont


Awards banquet

Bill Albing

Antoon van Luxemburg

Takashi Okuda, Daisuke Vete, Thomas Orr, Hiroto Watanabe

Carol Barnum, Luke Maki

Reception
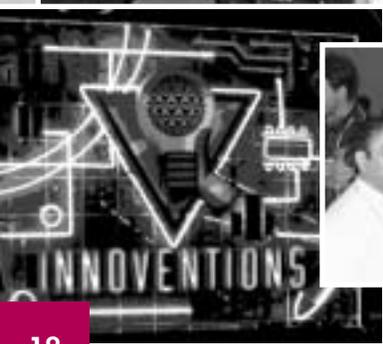
Ken Newman

On the way to Epcot

Coronado Resort

Reflecting on IPCC 2003

By Sherry Steward, conference chair

Sherry Steward

Two years of planning the Orlando conference paid off and we owe the great success of IPCC 2003 to the enlightening presentations by our participants and invited speakers. Keynoter Peter Kincaid opened the conference with an historical review of his ground-breaking research on comprehension and readability, including its complex context and enduring, yet controversial, influence. Carol Barnum followed the keynote address and the Monday morning stems with a superb talk on usability design and research given at the conference lunch. On Tuesday the *Ronald S. Blicq Award* winner, Dan Jones, gave an exceptional talk on knowledge management and technical communication. Mike Moshell gave the closing plenary on Wednesday with an exuberant lecture on dynamic media.

We were glad to have so many international presenters: Takashi Okuda, Thomas Orr, Daisuke Uete, and Hiroto Watanabe, Japan; Charlotte Kämpf, Germany; Robert Irish, Pamela Kostur, Ann Rockley, and Peter Weiss, Canada; Jean-luc Doumont, Belgium; Menno de Jong, Joyce Karreman, Mark Melenhorst, Michaël Steehouder, Maaike van den Haak, and Antoon van Luxemburg, the Netherlands.

Paul Dombrowski

On several occasions throughout the conference, we heard from many participants that IPCC 2003 was one of the best programs ever and one of significant substance. We owe this success to Paul Dombrowski, the program chair, and his conference theme, *The Shape of Knowledge*. This theme attracted both technical professionals and technical communicators, and the substance of the stems showed the relevance and future direction of our discipline. Many thanks to Paul and his committee: J. D. Applen, Karla Kitalong, and Nancy Coppola.

We also thank our sponsors: Boeing sponsored the proceedings; the University of Central Florida, University of Minnesota, University of Washington, Mercer University, and Rensselaer Polytechnic Institute all sponsored breaks; the texts and technology Ph.D. degree program at the University of Central Florida sponsored the coffee mugs; PCS sponsored the EngiComm lunch; and the *IEEE Transactions on Professional Communication* and IPCC 2004 sponsored the receptions. We could not have given our participants a quality program without their help.

On behalf of the IPCC 2003 committee: many thanks to all of you. *Communication Frontiers* is the theme of IPCC 2004, and we hope you plan to join us again next year in Minneapolis, Minnesota.

Keynote Address

By Debbie Davy

Style And Grammar Checks– A Personal Perspective

Dr. **Peter Kincaid**, chief scientist at the University of Central Florida Institute for Simulation and Training and developer of the Flesch-

Peter Kincaid

Kincaid Readability Formula, says the formula needs to be recalculated. Grade levels have been steadily decreasing since the formula was first developed in 1974, and the grade 8 level no longer has the same meaning.

From an unexpected and lucrative (and therefore not unwelcome) request from a former student, and using the pioneering ideas of Dr. Rudolph Flesch, author of *Why Johnny Can't Read*, Dr. Kincaid developed a readability formula for the public domain in a mere four months in 1974. In 1978 this formula was adopted

as the U.S. Army standard, and subsequently by defense contractors. Today it continues to be used, most notably by Microsoft, which has changed the formula to have an upper limit of grade 12 rather than the original grade 14, and whose current checklist sometimes gives wrong answers as a result.

Originally called the Recalculated Flesch Readability Formula, it was a solution to problems encountered by the Navy and other U.S. military services with the usability of technical manuals. Those problems were further aggravated by the
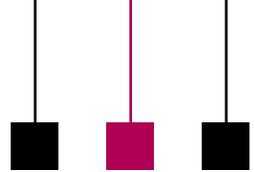
"all volunteer force," which consisted of many military personnel with low reading ability. The solution was to develop a readability formula valid for military personnel that would be used to control the reading difficulty of technical manuals.

The Flesch-Kincaid Readability Formula is:

Readability = 0.39 x (average no. of words per sentence) + 11.8 x (average no. of syllables per word) – 15.59

However, measuring readability with a formula is controversial. Although formulas can indicate a level of difficulty, they do not necessarily indicate what is wrong with a difficult passage, nor do they indicate how to clear up one's writing. Dr. Kincaid quoted from *The Plain English Handbook*, which says, "no readability formula takes into account the content of the document being evaluated. Einstein's theory of relativity reads at a fifth grade level."

Decades ago, at a talk for the Orlando STC chapter, Dr. Kincaid told the audience that they would be writing on a computer, doing their own editing, and developing their own keyboard skills within the next 10 years. A visionary ahead of his time, Dr. Kincaid was almost pelted with vegetables. As he predicted, the technical communication field has changed dramatically since 1974. Technical communicators now write with a computer, do their own editing, and have highly developed keyboard skills.

For the last 20 years Dr. Kincaid has been developing computer simulation for training purposes. His work includes the development of a suture trainer that can cut down medical or dental education by one year through the use of simulation technology.

At the end of his talk Dr. Kincaid was asked if he analyzes his own writing for grade level. "No," he replied, "but I do use the style suggestions." He concluded by saying that the best way to learn how to write (and to improve one's writing) is to "just do it."

Developing Complex Sources

By Carol Johnson

Knowledge management is a fascinating field and it is directly applicable to our daily lives. Two excellent introductions are Cory Wick's 2000 article in *Technical Communication*, "Knowledge Management and Leadership Opportunities for Technical Communicators," and Tomas Davenport and Laurence Prusak's *Working Knowledge: How Organizations Manage What They Know*. Knowledge management is interesting both because it can be used to organize, create, and transfer information within organizations and because technical communicators can use it, at a micro level, to extract information from recalcitrant engineers.

The Sources sessions focused on knowledge management.

Issues in Modeling Information

The first session began with **Pam Kostur** of The Rockley Group. Information modeling forms the basic structure for content management and is a critical subset of knowledge management. The Rockley

Carol Johnson

Pamela Kostur

Group coined the term Unified Content Strategy to describe what they do. In many organizations, separate groups working in "silos" (jargon for working in isolation without communication channels) create content for their own needs. Therefore there is much duplication of effort: One group writes a description, definition, procedure or report, and another group, needing the same thing, writes it again (often differently). This redundant effort results in high costs, haphazard organization, and inconsistencies in content. The latter—different information in different places such as in a manual and on the corporate Web site—can result in lawsuits.

Unified Content Strategy means creating a structure so that content can be controlled and easily identified for reuse.

There are three basic steps: analysis, structural (architectural) design, and implementation. The design is called an information model because it is like a map, catalog, or blueprint. The information architect creates this model to have information and authorship rights in a structured place within a company. After the architect creates the structure (this can be done with programs such as Excel and Visio), programmers use XML and DTD (data type definition) specifications to create a complex markup language for storing the information. Authors then work at a micro level to create, modify, and update the content. Technical communicators often work at this detail level, but we usually have the mind set to be able to work at the macro level as well, i.e., to become an information architect.

Combining Human-Authored and Machine-Generated Software Product Documentation

Bill Albing of FarPoint Technologies works with Microsoft applications to

create Windows components. His form of documentation is partially generated from the code itself with an automatic generation tool; it is halfway between machine and manual. Using the developer's comments in the code, the technical writer's remarks, data-mined DLL information, and simple examples, the software documentation is complete and effective. Like Unified Content Strategy, this is a philosophical change from the way we used to think about content and documentation.

Carol Johnson

Bill Albing

Hidden Streams of Information in Today's Software Projects

Martha Dember and **Gwen Thomas** of CIBER, Inc. spoke about Global System Information Integration. This is similar to the term coined by The Rockley Group but, in their case, they are working with a widely distributed corporation: They are creating information architecture for a large unnamed client in Orlando. They talked about how a travel agency, reservations desk, and building opera-

Carol Johnson

Gwen Thomas

tions unit all have the same information in separate, unconnected computer programs, which introduces error and wastes time. Like Pam Kostur, they urged technical communicators to be aware of the larger opportunities in content management as corporations merge and systems are integrated. According to them, the days of silo applications and repositories are numbered. Although the jobs of writing and editing will always exist, data governance and stewardship are more important.

Carol Johnson

Martha Dember

Panel on Recent Research

By Debbie Davy

Canonical Views in Procedural Graphics

Canonical (three-quarter) views for procedural graphics have been advocated based on artistic practice and psychological research. **Robert Krull**, **Michael Sharp**, and **Debopriyo Roy** (Rensselaer Polytechnic Institute) examined two alternative points of view: body-centered rear views and direct views that place important distances across the display plane.

The results of the study seem to support the display-plane theory. Although head-on and back views of an image are not "glamorous," they may be more effective in communicating the message. Their study found that people prefer canonical views for familiar objects, identification tasks, and object-centered tasks. However, people may prefer direct views for unfamiliar objects. And although using color highlighting slowed people by up

to 30 percent, most seemed to prefer this addition.

Effects of Declarative Information in Instructions for Use

The presence of declarative information in instructions for use is an extra burden for users who have to work with a technical device. **Joyce Karreman** and **Michaël Steehouder** (University of Twente, the Netherlands) studied the effect of adding declarative information to the essential procedural information in instructions for use. Procedural information describes the actions that have to be carried out together with the conditions for these actions and the results from these actions (e.g., "Press the left button. The gauge will increase."). All other information is called declarative information.

Previous research had examined the effect of declarative information on the ability to work with a set of instructions.

However, the results of those previous experiments were not conclusive. And the effects of declarative information (on cognitive load, on confidence, and appreciation) have never been investigated. Karreman and Steehouder conducted an experiment where the effects of two types of declarative information on task performance, on cognitive load, and on self-sufficiency were studied.

The results of the cognitive load measurements demonstrated that adding one or two types of declarative information to procedural information results in increased mental effort during practicing. Because the effects of declarative information on self-efficacy and on cognitive load were never examined before, more research is needed before it can be concluded with certainty that instructions for use should not contain system and utilization information, although the results of the experiment indicated that these two types of information were not useful.

How Professionals Read Online Documents to Formulate Recommendations

Thea van der Geest, **Mark Melenhorst**, and **Michaël Steehouder** (University of Twente, the Netherlands) are attempting to answer the question of how professionals read online documents. How to design effective documents that are adapted to the task, to the readers, and to the online environment? Professionals often read with the purpose of formulating a judgment based on what they have read. Increasingly, the documents to be used are available electronically; this adds to the complexity of the task.

For reading online, readers face problems when paper documents are dumped on the Web in PDF format without adapta-

Joyce Karreman, Mark Melenhorst, Maaike van den Haak

tions and without computer-supported page turning. Hypertext documents, rather than PDF, require cognitive effort to read. Professional judgments are often based on large document sets. The documents can contain contradictory evidence, and time pressure often prevents professionals from reading them completely.

The researchers asked readers to take notes on an electronic notepad while reading. In analyzing the notes, they found that readers are not only purpose-driven, but are guided by the articles as

well. For successful document design, the research indicates that well known structures indicated by headings should be used, as well as interactive tables of contents, to reduce cognitive load by presenting the task and the criteria on the screen and to encourage readers to write their own notes. Interestingly, the length of a document did not have a noticeable effect—rather, it was the quality of the headings that dictated the success of a judgment formulated on the reading.

The Design of a Search Engine That Manages Information for Naive Users

Mousumi Chatterjee and **Sibel Adali** (Rensselaer Polytechnic Institute) are building a software agent to help naive users effectively perform search tasks without feeling intimidated or overwhelmed by the technology or the tool. The system's aim is to help the people of Troy, New York, search for events and programs by not-for-profit organizations. This is a noble cause that seeks to interconnect disenfranchised users from non-computer-user backgrounds.

Wherever possible, software agents that guide users through complex tasks, and then adapt the tasks whenever it is appropriate, are being developed (e.g., anthropomorphic agents such as the Windows moving paperclip). The agent design consists of a query formulation advisor and an information exploration guide. A list of related search queries is collected with appropriate desirability measures and this is matched against a complex user profile that ranks a set of objects with their desirability to the user. Each interaction allows the system to add a new query and desirability rating and refines the ranking.

The display of information as well as the content can be either too much or too little; this can frustrate a naive user. The researchers' strategy, therefore, is to

design a "push and pull" information system based on user needs. Once the system is completed, users will be able to explore all available information through searching and browsing in one interface, rather than using different screens as they search.

Teaching and Learning

By Paul Tuten

Developing a Virtual Simulation Game for e-Learning

Nancy Coppola (New Jersey Institute of Technology) presented a case study that

Nancy Coppola

described the adaptation of a classroom-based learning exercise to an online e-learning setting. In its physical form the exercise required student groups to develop and then communicate assembly instructions for new products assembled from UNITS (a.k.a. Tinker Toys). The electronic version of the project is facilitated by a restricted set of "building blocks" constructed in a Microsoft Visio environment. Nancy demonstrated the creativity and feasibility of this approach as a useful pedagogical tool for technical communication instruction.

The Uses of Toulmin: The Value of an Explicit Model of Argument for Academic and Working Engineers

Robert Irish (University of Toronto) discussed Toulmin logic beginning with a vivid description of the similarities faced in improvisation by both dramatic actors and professional communicators. Following this introduction he provided an overview of the Toulmin model. Based

Content Management and Networks

By Carol Johnson

A Case Study of the Space Telescope Science Institute's Learning Community

The second Sources session began with **Franklin Tanner** from the Space Telescope Science Institute (STScI) talking

Carol Johnson

Franklin Tanner

about knowledge management and educational opportunities. He noted that learning within an organization can increase the total of organizational knowledge (as well as retain employees). He separated these opportunities into three categories: individual, group, and organizational. STScI has learning opportunities such as technical sabbaticals with 80 hours of paid leave, planned professional development (including conference costs), group training lectures, colloquia, software workshops, and 100 percent tuition reimbursement with time off to attend classes.

Building a Business Case for Content Management

Ann Rockley (The Rockley Group) noted that, as with knowledge management, corporations are slow to understand

Carol Johnson

Ann Rockley

the benefits of content management. Consequently, it is necessary to gather financial metrics. To convince management, you need case studies with returns on investment to present over and over again.

The businesses that can most easily see the value are those that pay for translations, which are very expensive. For any such company, content management can recoup the cost of its implementation and begin saving money within a year. In a business that does not need translation, amortization could be 18 months to two years. Regulated industries (e.g., pharmaceutical, medical equipment, utilities) are more likely to invest the time and money into content management with DTDs and XML. The low-end tools that one can use for a project are AuthorIT, Documentum, Oracle iFS, and Siberlogic.

Queuing Networks Approach to Cost-Efficient Use Evaluation of Information Systems in Knowledge-Creating Organizations

Daisuke Uete and **Takashi Okuda** built on the research of Hirotaka Takeuchi and Ikujiro Nonaka, which applied mathematical formulas to the exchange of tacit and explicit knowledge within an organization. They call it an evaluation method for the role of technical communication (TC) with information technology (IT) in the knowledge creation process. The variable they used for the calculation was called "service rate"; it was assumed to be 0.5, the data gained from sending e-mail to an employee and measuring the deploy time. Overall the conclusion was that when TC and IT are combined they greatly improve knowledge generation. Consequently, they should be permanently invested, or connected, with each other.

Carol Johnson

Daisuke Uete, Takashi Okuda

Information and Order

By Carol Johnson and Debbie Davy

The Logic of Humanity and Web Site Architecture

In the third Sources session on Monday, **J. D. Applen** (University of Central Florida) told about identity in networks, quoting Foucault on issues of identity to ask, "In a sea of data, how do we define ourselves?" He cited Barabási and Buchanan as he detailed recent developments in network theory. Citing Rafael and De Armond, he noted their respective work on the Philippine rebellion against Joseph Estrada and the World Trade Organization demonstrations in Seattle and how they showed that text technology on cell phones made this possible. Yet, even as we occupy an identity within a social network, the very nature of this medium—faceless electronic "texting"—also undermines our identity as it is created. As mobile nodes in a network, technology can undermine the power of the state. Networks define us and political action is possible inside networked systems.

XML and its Role in Building Accessible, Web-Based Information

"Disability is a matter of perspective." **Patrick Fleming** (University of Central Florida) opened his talk quoting Martina Navratilova and her view of disabilities. He also quoted Nietzsche who had said that "the invalid is a parasite on society." But instead of ignoring the 60 million Americans who are classified as disabled, Fleming reviewed how XML is making the Web and other document designs accessible to those individuals.

Fleming spoke about section 508, a federal law that requires electronic and information technology to be accessible to people with disabilities. There is a wide gamut of disabilities that needs to be addressed, including those that are unreported and undocumented. However,
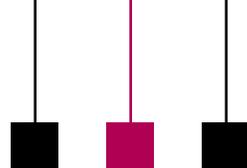
progress is being made. There is software called Lift by Usablenet that analyzes Web pages according to the laws in section 508. The World Wide Web Consortium has promoted Web accessibility in the WAI (Web accessibility initiative). Language has to be structured to be transformable, and that is part of XML 1.0, which is now five years old. This can allow changes for the wide variety of disabilities that exist.

Contemporary ideas of visible disabilities are being reshaped to account for those with invisible disabilities. The blind and other individuals who have physical handicaps are only one group who can benefit from gaining access to PDAs, videos, copiers, and a host of modern inventions that are indispensable today. Others in need of access are those who suffer from cognitive disabilities, which put them at a disadvantage with the new information age.

Fleming's talk outlined a host of options available that are being expanded on by Oracle, Microsoft, and others. In addition he posed questions that deal with the role of the disabled, institutions, and governments in the issue of accessibility for those millions of fellow citizens.

Information Modeling: Visual Displays

In the information age, people are bombarded with vast amounts of information. **Heather McNay** (Siemens Energy & Automation Inc.) has been tackling the job of organizing information into logical order for Siemens. In her role as an information architect, McNay said that there are important key factors to consider when constructing Web pages.

Among the most important is the use of pictures or graphics when trying to transmit ideas or information. The old saying, "a picture is worth a thousand words,"

Carol Johnson

Patrick Fleming,
Heather McNay, J. D. Applen

is extremely useful when dealing with information transfer. The analogy of the artist who can produce a picture of a

Teaching and Learning

(continued from page 22)

on his research findings Robert suggested that it may serve as an effective heuristic —a thinking tool, really—for engineers' efforts in organizing and shaping ideas.

Simulation Jr.: Using Modified Problem-Based Learning in Technical Communication Undergraduate Courses

Susan Codone introduced her topic of problem-based learning (PBL) by recounting her experiences as a practitioner working for the Raytheon Company. In that role Susan frequently used PBL techniques to fulfill job responsi-

Susan Codone

flower from simple brush strokes is just as relevant for information architects in their production of a site that conveys the desired information.

The three basic types of graphs and charts are bar, line, and picture; graphs and charts are examples of an information picture. In addition to the graphics, the organizational layout of a Web site is critical. The LATCH concept—location, alphabet, time, category, hierarchy (government sites)—is useful in keeping a Web site structured in a manner that allows a user to navigate through a myriad of data quickly.

bilities. It seemed natural, therefore, to teach such techniques to her undergraduate technical communication students in the context of a simulated business environment. Reflecting on this pedagogical endeavor, Susan stated that she found the application of PBL in the classroom to be both fruitful and challenging.

Training Faculty to Shape Knowledge for Cyberspace: Preparing for Online Classes*

Jane Gibson (Nova Southeastern University) outlined effective strategies for training faculty to shape knowledge in online teaching environments. Jane's presentation offered practical advice interspersed with anecdotes from her experiences in teaching and administrating distance education courses. A clear message from her presentation is that the quality of a distance education course— like all effective teaching—results from properly trained, appropriately mentored, and highly motivated faculty members.

* Coauthored with Dana Tesone and Charles Blackwell

Comprehending Sources

By Debbie Davy

Knowledge Portals Support Widely Distributed Oilfield Projects*

The oil industry is developing a legacy for the future. **Josh Etkind** (Schlumberger Technologies Corporation) outlined how Schlumberger is advancing the concept of customized Web portals to head off the information drain that could occur as engineers retire. Etkind presented the trends and technology found in the petroleum industry, which is experiencing higher production from fewer rigs. More important, however, is that the industry is also undergoing a brain drain as experienced engineers retire, leaving a void in operations knowledge.

Josh Etkind

Project knowledge portals (PKP), which are custom portals, are designed to allow the individual to create a unique operating platform for an engineer to observe and record real-time data for future reference. In addition, the system permits a closed-loop knowledge sharing process. By storing project data on a secure Web server, employees worldwide can have access to the content anytime and anywhere. From this sharing process, best practices and methods of dealing with problems on site can be accessed and reviewed. But the real advantage of the PKP is that it allows the lessons learned from previous engineers and managers to be available to current engineers and managers.

PKPs enable the connection of people with people and communities of practice with subject matter experts and the indus-

try. However, the importance of the PKP is that the concept is applicable to many industries. Communication on an individual level and customization on an individual level are the key to more efficient and effective management. The technology is the enabler, and Etkind explained how the PKP permits the oil industry to provide such a technology.

Web-Based Systems for Communication and Scheduling

Today's society is pushing the envelope for access to the World Wide Web. This demand extends into the area of wireless communication. **Hala ElAarag** and **Robert Hartford** (Stetson University) explained their pursuit of creating a wireless personal area network that would allow users to access the Web from any mobile device.

Hala ElAarag

Among the most difficult problems encountered is the converting of systems from wired to wireless Web. The Web was designed and standardized for wired devices and the Internet does not fit well with wireless interfaces. A unique approach was taken to overcome this problem: a Web calendaring system. Web calendaring requires examination of systems ability, background requirements, and foreground requirements. However, implementation problems include issues of usability, speed, and security. Also, questions of screen layout and size, bandwidth, input, and memory size are problems that need to be resolved with the wireless devices.

ElAarag and Hartford have undertaken a significant challenge in adapting a system geared for one type of operation to accept another. Their contention that people

want to be connected to the Web to receive e-mail, scheduling information, and other Web resources, regardless of their location, is borne out by the ever growing demand of Internet-enabled devices, which increased from 430 million in 2002 to approximately 760 million in 2003.

What Technical Writing Students Should Know About Typeface Personality

How do you choose the most effective typeface? **Jo Mackiewicz** (University of Minnesota–Duluth) presented her study, which compared 15 typefaces and students' perception of them. She investigated why students perceive typefaces to convey different attributes, as well as how students relate different typefaces to different types of documents. Two main findings emerged from her analysis: Students lack the vocabulary to make fine distinctions among text typefaces, and students sometimes make associations among attributes that experts would not agree with.

Jo Mackiewicz

From her study, the overall recommendations for a typeface are:

1. Choose a typeface with relatively large open counters and large x-heights for legibility and readability

2. Choose a typeface with no (or moderate) modeling for professionalism

3. Choose a typeface with a variable pitch (rather than a fixed pitch) to avoid an excessively technical tone

4. Avoid typefaces that mimic other modes of writing to avoid distracting readers from the message

* Coauthored with Kamel Bennaceur, Mischa Drnec, and Chris Luppens

Contribution of Electronic Communication Media to the Design Process: Communicative and Cultural Implications*

Earlier and more frequent deployment of electronic communication (EC) media in the design process offers possibilities for customization and acquisition before production is started; however, mutual trust plays an important role. And the directed application of EC media still needs careful attention.

Antoon van Luxemburg (M&I/Partners, the Netherlands) and **Nicole Amare** (University of South Alabama) examined the communication and cultural implications of the contribution of EC media in the design process. Their theoretical framework is based on studies of the relationship between culture and media, the hypotheses of which relate to the use of EC media using Hakansson's network model. The researchers looked at several studies that compared computer-mediated communication and face-to-face (FTF) communication, and studied business-to-business companies through semi-structured interviews.

In a product innovation process, the customer is the most significant source of knowledge and information. The researchers found that not all communication media are suited for every task and that interaction for technological innovation mostly takes place through FTF communication. For increased collaboration between companies and their customers, new, integrated information and communication technology generates more opportunities for collaboration.

* Coauthored with Jan Ulijn

Research on Practices

By Roger Grice

Presenters in this session told of their research on people dealing with technology. Whether the task is dealing with mechanical equipment, course content for distance-education courses, or word processing and presentation software, people often struggle to make technology work to their advantage. We, as technical and professional communicators, serve those people well if we can simplify the procedures with which they learn about technology and technological processes.

Reader Perceptions in Sequencing Procedural Graphics of Complex Machines

Debopriyo Roy coauthored this paper with **D. Michael Sharp**; both are doctoral students at Rensselaer Polytechnic Institute. Their research dealt with the mental models that users formed of complex mechanical objects, especially those consisting of several subassemblies, when procedural graphics were presented in several alternative formats. Their research demonstrated that people perform assembly tasks better if assembly diagrams are accompanied by instructional text rather than requiring them to rely on outcome graphics of the finished assembly as the guiding model.

Identifying Learning Difficulties Based on E-Mail Responses of Technologically Impoverished Users

Philip Rubens coauthored this paper with **Sherry Southard**; both are faculty members at East Carolina University. Their research offers a methodology for assessing the communication interactions that can be used to improve course content, delivery, resources, and support for dis-

tance-education courses offered online. Their method can be applied to academic courses or training sessions and enables designers, trainers, and educators to identify communication problems as they emerge and react to them in a timely manner.

A Pilot Study of Self-Assessment of Word Processing and Presentation Software Skills in Graduate Students in Technical Communication

Keith Hopper and **Kenneth Rainey** coauthored this paper; both are faculty members at Southern Polytechnic State University. Their research focused on best ways to teach tools as part of a technical communication class. Their pilot study examined a self-assessment of word-processing (Microsoft Word) and presentation-application (Microsoft PowerPoint) skills in a graduate technical-communication class. Students reported their perception of their own proficiency and tested their proficiency before and after a standardized training program. Students improved their performance through their participation in the standardized training program and appreciated having a strong foundation in use of both of the tools included in this study.

Ken Rainey, Keith Hopper, David Dayton

Awards Banquet and Presentations

By Elizabeth Weise Moeller

A crowd of 50 people enjoyed a fantastic PCS awards banquet at Epcot on 23 September. Dinner was in a private dining room overlooking the Wonders of Life pavilion and was followed by

Above: Beth Moeller, Luke Maki

Right: Beth Moeller, Dan Jones

dessert, coffee, and lemonade on a terrace overlooking the World Showcase Lagoon near the United Kingdom pavilion. The terrace provided us with an unobstructed view of *Illuminations*, a spectacular show of fire, water, lasers, video, and fireworks, all choreographed to music.

Between dinner and dessert, we presented awards to **William Horton** (in absentia), **Luke Maki**, **Dan Jones**, and **Antoon van Luxemburg**, **Jan Ulijn** (in absentia), and **Nicole Amare**.*

Horton is this year's winner of the *Alfred N. Goldsmith Award* for his distinguished contributions to engineering communication. Horton, who will give the keynote

* See the complete story about the award winners in the September/October 2003 Newsletter.

address at IPCC 2004 in Minneapolis, Minnesota, is a recognized expert on the productive and appropriate use of new media and communications technologies.

Maki was presented with the *Emily K. Schlesinger Award* for his outstanding service to PCS. He has been on the administrative committee for four years, providing valuable assistance as chair of the electronic information committee as the society works to increase its electronic presence. Maki is also responsible for producing the first IPCC proceedings on a CD.

Jones, a professor of English at the University of Central Florida (UCF), is the winner of the *Ronald S. Blicq Award* for his contributions to technical communication education. He has taught for the past 20 years, developed undergraduate and graduate programs in technical communication, and is responsible for the new Ph.D. degree in texts and technology at UCF.

Van Luxemburg and **Amare** were on hand to receive the *Rudolph J. Joenk, Jr.*

Award, which recognizes the outstanding paper published during the previous year in the *IEEE*

Antoon van Luxemburg

Nicole Amare

Transactions on Professional Communication. Their article, coauthored with **Jan Ulijn** and titled "The Contribution of Electronic Communication Media to the Design Process," confirms assumptions that getting the customer involved in the design process early on is most beneficial to innovation during the design of products. The paper also demonstrates that electronic communication (i.e., e-mail) is one of the best ways to reach those customers.

Many people were still talking about the that evening on Wednesday morning. It was definitely an event that won't easily be forgotten.

Shaping Our Understanding of Project Management in a Technical Communicator's Context

By Debbie Davy

Shaping Project Management for Technical Communication Students

Bernadette Longo and **Constance Kampf** (University of Minnesota) are asking a question of vital importance to emerging technical communicators: "How does the technical communication curriculum prepare students for an increasingly 'projectized' workplace?" According to Longo and Kampf, theories of knowledge management, communities of practice, and project management practices are key concepts that students need to be able to both understand and work with.
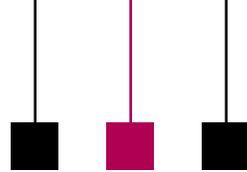
Plenary Session

By Debbie Davy

Knowledge Management and Technical Communication: A Convergence of Ideas and Skills

Dan Jones, this year's *Ronald S. Blicq Award* winner, is a professor of English at the University of Central Florida. Professor Jones began his talk by quoting Peter Drucker: "We are entering (or have entered) the knowledge society in which the basic economic resource…is knowledge…and where the knowledge worker will play a central role."

Dan Jones

Knowledge management (KM) is the process of revealing and mapping the work activities, behaviors, and knowledge sources within an organization. Although KM is a new discipline, it is already an established one. There has been an explosive growth of KM literature in academic books and journals. There are many conferences and seminars devoted to KM, and an abundance of KM articles and books in popular management outlets. KM is big business.

While KM has been emerging as a new discipline, technical communicators have been redefining themselves. Now, more than ever before, technical communicators can contribute meaningfully to KM in the workplace as well as in research and teaching. And as technical communicators we are well positioned to take advantage of many other opportunities in addition to KM. According to Professor Jones, we are witnessing an unusual convergence between KM and technical communication.

But technology cannot replace human knowledge and capture everything that people know. Knowledge is the chief asset of an organization. Professor Jones urged all technical communicators to embrace knowledge management and to use it to demonstrate their value.

Information and Order

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In today's society, McNay notes the importance of the information architect's being able to recognize what visual techniques will present the data in small, consumable pieces that advance the site's function. Old type data organization, such as found in the phone book, is insufficient for the world of information collection, and McNay emphasized the need for information architects to explore new and effective methods of presentation.

Shaping Our Understanding of Project Management

(continued from page 27)

As project management becomes more common in the workplace, employers are requesting this skill set in their employees. At the University of Minnesota, Longo and Kampf introduced project management concepts [such as work breakdown structure (WBS), Gantt chart, and critical path] to their undergraduate students. Students worked through the WBS and then found that as they created their Gantt chart they needed to go back and iteratively refine their WBS. This did cause resistance, as some students felt frustrated because the process was iterative, not linear. However, many students responded positively to the exercise and felt that they were better equipped to take on the challenges of the workforce.

The Incommensurability of Faster, Better, Cheaper—NASA's Rhetorical Bind

Helen Constantinides (University of Minnesota) discussed how decisions in technical organizations that should be made on the basis of science are frequently subject to, and outweighed by, political or economic pressures. In her presentation Constantinides describes Luhmann's systems theory, with its description of contemporary society and emphasis on the goals of political, scientific, and economic systems and compares it to the pitfalls of NASA's "Faster, Better, Cheaper (FBC)" approach to project management implemented in 1992 by Daniel Goldin. Goldin charged NASA to:

…tell us how we can implement our missions in a more cost-effective manner. How can we do everything better, faster, cheaper, without compromising safety?

Faster asks that cycle time be reduced, and new knowledge and technology be integrated quickly—and is a political goal. *Better* asks that scientific return be maximized and new technologies be exploited—and is a scientific goal. *Cheaper* asks that mission costs be reduced—and is an economic goal. However, whenever a mission fails, FBC is looked at as the contributing factor. Constantinides's analysis shows that there have been problems with defining and prioritizing the components of FBC and that those problems reflect the social environment. Constantinides emphasizes that engineering is a social activity directed toward practical goals that serve

Shaping Our Understanding of Project Management

humanity and is subject to social constraints. And those social constraints are embedded in the FBC approach to project management.

Shaping a Research Framework to Deal with Internationally Distributed Teams

The trend to globalization and advances in communication allow the support of internationally distributed teams. However, geographic and cultural differences in communication styles, and disparate physical locations, cause problems in communication.

Constance Kampf and **Valerie Griep** (University of Minnesota) presented their plan for a research project that would work across international boundaries. The proposed framework would consider the intersection of cultures at the levels of occupation, organization, and nationality, as well as the efficacy of project management tools.

Kampf and Griep examined Hofstede's dimensions of national and organizational cultures, Trompenaar's and Hampden-Turner's dimensions of culture, and Milosevic's cultural variables. According to Kampf and Griep, Hofstede's and Trompenaar's dimensions of culture and Milosevic's cultural variables have the potential to fit together and may help to illustrate the intersections of national, organizational, and occupational cultures.

International Environments

By Rudy McDaniel

As a single-day attendee presenting my paper on the last day of the conference, I was able to catch only the presentations within my own stem. Fortunately for me, the two additional presenters provided material quite different from my own so I was able to enjoy a nice variety of topics. As for the audience, they were shown three very different subjects and examples related to information management and knowledge shaping.

Tacit Knowledge in Information Systems

Leonard Pollard and **Rudy McDaniel**, both from the University of Central Florida, spoke about the subtle differences among data, information, and knowledge and discussed some transfer models between tacit and explicit states of knowledge. The complicated nature of knowledge models such as Johari's window led us to consider more primitive models that nonetheless still manage to pass along knowledge within a community.

We offered storytelling as just such a method for framing and sharing tacit knowledge. The nicest feature of stories is that they can offer an entry point into highly technical and detailed domains. One modern example of using this storytelling approach to manage knowledge is found in NASA's *Ask* magazine, a periodic publication containing narratives related to project managers. *Ask* magazine was the result of an intensive study subcontracted to an information management company to find the best way of managing tacit knowledge for specialized NASA project managers and engineers. An international example of storytelling in action is Kathalaya, an organization in Bangalore, India, which uses storytelling to teach children their academic curricula. Kathalaya reaches 3000 children and retrains 5400 teachers annually.

### *Visual Ethics: A Past Case and a Present One*

Paul Dombrowski (University of Central Florida) spoke about Ernst Haeckel, a German naturalist scientist working in the late 1800s and early 1900s, who is famous for the biogenetic law that is summarized as "ontology recapitulates phylogeny." Haeckel produced many famous illustrations of embryonic development in various species. The problem with Haeckel's work was that his misleading visuals were overly simplistic and did not accurately reflect the subtleties of embryonic development. As a result, those visuals were able to distort evolutionary theory in such a way as to suggest connections between evolving embryos that simply did not exist.

Paul also explained a more modern example of misleading visuals being used in technical information. Jan Schön, a former physicist working for Lucent's Bell Labs, was found to have falsified some of his engineering illustrations by essentially copying and pasting the graphs from one document to the next and relabeling the axes. Much like Haeckel, Schön manipulated the visual diagrams to the point that the data appeared to be too good to be true. It was this unrealistic precision that sparked an investigation into Schön's work and eventually his dismissal from Bell Labs.

An Engineer Prepares: A Classic Acting Text Reshaped for Engineering Presentations

Unlike the previous two speakers, **Peter Weiss** (University of Toronto) spoke
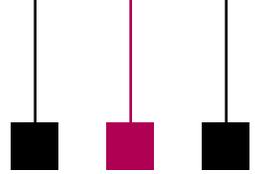
about the presentation of information rather than the information itself. Using the classical acting texts of Constantin Stanislavski, he explained how many of the techniques designed for actors could also be used for engineers delivering oral presentations. Central to Stanislavski's model was the idea that change had to come from within the body psychologically before external changes in voice, emotion, and body language could be fully realized. In terms of specific advice adapted from this model for engineers, Peter spoke of the importance of the speaker's defining a clear purpose for his talk before actually giving it, of putting himself aside as an active listener during nonspeaking portions of the presentation, and of practicing daily with relaxation and body language exercises.

The aspect of Peter's presentation I enjoyed most was his charismatic delivery of the material. Using the same techniques he was verbally explaining and writing about, he was able to demonstrate exactly how these classical acting techniques could be used to minimize problems such as nervousness and fidgeting when delivering oral presentations. For engineering students especially, this type of approach is very helpful since the complex nature of engineering materials often demands speakers be in control so as not to leave their audience befuddled.

I was very pleased with the diversity and quality of the presentations in our Users and Applications session, and I'm hoping that three important lessons were learned from the group: To responsibly manage information and shape knowledge requires an organized and structured approach, an ethical and honest foundation, and a means of effectively communicating that knowledge and information to the audiences who are seeking it.

Plenary Session

By Debbie Davy

The Dynamic Media Initiative, or Running for the Frontier One step Ahead of the Dictionary

Michael Moshell, director of the CREAT Digital Media Program at the University of Central Florida, presented two hypotheses:

1. That entertainment is a simulation of life's struggles and triumphs

2. That seeing and understanding are essential parts of the human struggles and triumphs.

Dr. Moshell is researching the application of simulation and virtual and augmented reality to problem solving and learning. His research draws on two related disciplines: *digital media* and *dynamic media*.

According to Moshell, *digital media* generally refers to the development of technologies, artistic skill sets, and production methodologies for creating and delivering multisensory information via computers and networks. For example, the more established areas of digital media production include multimedia, animation, Web page design, and page layout for print. However, new academic disciplines grow at the margins of the old ones, and certain aspects of digital media research and teaching might deserve another title: dynamic media.

Michael Moshell

Moshell defines *dynamic media* as those projects that fall outside of the established production culture of digital media. Some of the examples he presented are:

- *Virtual Rain Forest*—an interactive simulation of trees and ecosystem in a tropical forest, suitable for use in a science center

- *Caracol Time Travel*—an interactive multicomputer role-playing game to teach the principles of archaeology, using data from an archaeology project in Belize, Central America

- *StoryBox*—a performance space for improvisational theater where the lights, sound, and visual imagery can be improvised as rapidly as the actors create the story

Dynamic media is based on the ability to build one's own tools while using them. And, by definition, existing tools are inadequate. If a media-related research project concerns two or more of the following elements:

- Novel approaches to story

- Innovative forms of live performance

- Experimental, unreliable, rapidly evolving media technology

then it is of interest to those involved in the Dynamic Media Initiative.

IPCC 2004 • Communication Frontiers • Call for Papers

29 September - 2 October 2004 • Minneapolis, Minnesota

Professional communicators are adept at negotiating frontiers of all kinds.

…We communicate across international borders, addressing audiences whose languages, cultures, and expectations of communication products may be quite different from our own.

…We enjoy expanding our comfort zone by dealing professionally with subject matter experts whose work pushes the boundaries of science, engineering, medicine, and other fields.

…We explore undeveloped areas within our own discipline that are fruitful for research and exploration.

Possible Topics

Because of its broad and expansive nature, many topics fit the theme of Communication Frontiers. Here are some samples.

❏ Planning and implementing content management: Roads traveled and lessons learned

❏ Adapting rhetorical strategies and document design for international audiences

❏ Aligning document-development strategies to new product-development techniques

❏ Communicating effectively with managers and with subject matter experts

❏ Adding visual interest to technical documents without sacrificing accuracy

❏ Testing the usability of leading edge products: What new challenges do they pose?

❏ Expanding the use of media in engineering, scientific, and medical documents

❏ Writing effective English for nonnative speakers: Syntax and vocabulary

❏ Learning to love structured writing: Professional communicators and content management

❏ Preparing engineers, scientists, and professional communicators to cross new frontiers

Session Types

❏ Paper (one of two or three presentations offered in a 90-minute session; two or three proposals may be submitted together as a proposed session, or the program committee will combine papers on related topics)

❏ Panel discussion (one to four speakers make brief presentations and lead discussion with audience in a 90-minute session)

❏ Conference workshop (90 minutes)

❏ Postconference workshop (half-day or full-day workshop offered on 2 October only)

Program Calendar

❏ Proposals due
15 January 2004

❏ Acceptance notifications sent
15 February 2004

❏ Drafts of proceedings papers due
15 April 2004

❏ Comments returned to authors
15 May 2004

❏ Final drafts of proceedings papers due
15 June 2004

Proposals

Your proposal should consist of the following items:

❏ A description of your topic (250 words)

❏ A brief description of your intended audience

❏ A brief (100-word) biosketch of each author, including contact information (e-mail address and telephone number)

❏ The suggested session type

❏ Statement of agreement to present: "If this proposal is accepted, I agree to register for IPCC 2004 and make the presentation described in this proposal." (In the case of proposals with multiple authors, only one is required to attend the conference.)

Send your proposal to George Hayhoe, program chair, at *hayhoe_g@mercer.edu* no later than 15 January 2004. Electronic submissions are preferred. If you need to send your proposal by paper mail, contact the program chair at +1 478 301 2299.
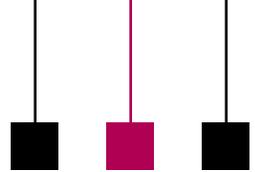
Plan Now for IPCC 2004

You may still be finding Tinkerbell's magic dust in your IPCC 2003 proceedings, but it's not too soon to plan for IPCC 2004 in Minneapolis, Minnesota. The call for papers for this conference is on page 31 with a description of the conference theme, *Communication Frontiers*.

Special events at IPCC 2004 will include a presentation by keynote speaker William Horton, who received the PCS *Alfred N. Goldsmith Award* for 2003 and is well known for his work in e-learning, knowledge management, online documentation, and visual design. He recently presented workshops at the Online Learning Conference, focusing there on developing and managing online learning tools and technologies, as well as developing a strategic plan for migrating training and instruction to an online format. Mr. Horton

has an engineering degree from MIT, a master's degree in computer science, and is a registered professional engineer. He is author of *Designing WebBased Training, Designing and Writing Online Documentation, Leading E-learning, Evaluating E-learning, Using E-learning*, the *Web Page Design Cookbook*, and several other books. Mr. Horton is an internationally sought-after speaker and his presentation at IPCC 2004 promises to be a high point of the conference.

Another high point of IPCC 2004 will be the awards banquet, which will be held at the Weisman Museum, designed by internationally famous architect Frank Gehry. Gehry is quoted as saying, "They told me not to build another brick lump," and I

think you'll agree that he built something quite striking instead. The stainless-steel-clad museum, completed in 1993, overlooks the Mississippi River, and the banquet will be held in a room on the museum floor with a river view.

The conference will be at the Radisson Hotel Metrodome on the campus of the University of Minnesota. The conference planners anticipate that the program will include discussions of current topics and up-to-the-minute issues of importance to those of us who work with communication in engineering and other technical settings. We encourage you to send in presentation proposals and make your plans to join us in Minneapolis in 2004.