



News about information systems throughout



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Crosstalk: A Forum on Technology, Teaching, and Learning	2
Software Spotlight	
Adobe Photoshop 4.0 Is a Program of Many Layers	3
Network Notes	
Some Tips on Handling Unwanted Electronic Mail	4
Computer Corner	4
MIT Computer Connection/ Bits and Bytes	
Apple Makes Video Editing Easy with Avid Cinema	5
Reorganized Help Desk Has New Numbers and E-Mail Addresses	5
Publishing Pointers	
Case Study of a Web Redesign: the Top-Level MIT Pages	6
Telecom Talk	
Phone Scams, 900 Numbers, and International Dialing Plans	7
Getting Help	8
Antivirus Resources on the World Wide Web	8

Internet Dreams: Archetypes, Myths, and Metaphors

Lee Ridgway

Along with their phenomenal growth, the Internet and World Wide Web have generated an ever-growing body of adjunct literature. From “dummies” guides to visions of networked utopias, this literature tries to make sense of the technical, economic, social, and philosophical aspects of the Internet. *Internet Dreams*, published last fall by The MIT Press, is Mark Stefik’s contribution to envisioning the future.

Stefik is a principal scientist at the Xerox Palo Alto Research Center, where his research has ranged from designing programming languages, to expert systems, to computer support for cooperative work. He characterizes his work as having the theme of using technology to enhance creativity, collaboration, and human expression.

Finding Better Metaphors

Stefik’s premise in *Internet Dreams* is that the best way to think about the future of the Internet is to come up with fresh metaphors:

The metaphors we use constantly in our everyday language profoundly influence what we do, because they shape our understanding...When we change the metaphors, therefore, we change how we think about things. Be-

cause metaphors can guide our imagination about a new invention, they influence what it *can be* even before it exists.

Stefik believes that the place to look for these metaphors is in Jungian archetypes and in myths of human behavior. He sees the popular metaphor of likening the Internet to an *information superhighway* as limiting and misleading, and his Introduction offers a good analysis of why. He also sees that no single metaphor could cover the rich range of possibilities of the emerging information infrastructure.

I-way Guides

While recognizing its limitations, Stefik takes the information superhighway as his starting point and shortens it to the term *I-way*. He then explores four metaphors and corresponding archetypes as guides to thinking about how the Internet may evolve.

- The *digital library*, with the I-way as publishing and community memory, emphasizes the publication and storage of knowledge for preservation and access by society. The archetypal image is that of the keeper of knowledge, as exemplified by the wise old one, the storyteller in oral traditions, the museum curator, the scholar, and the librarian.

- In the *electronic mail* metaphor, the I-way works as a communications medium. Personal messages are exchanged between individuals and

continued on page 2 ▶

public messages sent to groups and communities. The archetype here is the communicator or messenger.

- The *electronic marketplace*, where goods and services are sold, is a place of action and commerce. The archetypes range from the older and more traditional – warrior, farmer, hunter, gatherer – to the modern – merchant, salesperson, business executive, bargain hunter. As electronic marketplaces develop, new metaphors will be needed to guide thinking about digital commerce, digital money, and digital property.
- The I-way is a gateway to experience through *digital worlds*, such as social settings on the network, groupware, virtual reality, augmented reality, telepresence, and ubiquitous computing. These worlds are places for exploration and escape from the routine. The archetype is that of the adventurer, who seeks new experiences to fire the imagination. This metaphor reflects the human need for renewal; it also raises issues about social interaction and the nature of reality.

Stefik starts each of his four main sections with his own commentary. He then offers articles and excerpts from the writings of others whose ideas and work have significantly influenced the development of information technology. Stefik surrounds each article with his own *Connections* (introductory context) and *Reflections*.

Most of the articles address the Internet and the World Wide Web directly, while a few from earlier “eras” of computing were chosen for their visions of a technological future that has come to be. A vivid example of the latter leads off the section on digital library metaphors. It is an excerpt from Vannevar Bush’s “As We May Think,” an article appearing in the July 1945 issue of *The Atlantic Monthly*. What Bush imagined, although with an entirely different technological basis, came into being 30 years later with personal computers and hypertext. (The biographical note on Bush makes no mention of his MIT connection.)

What Works, What Doesn’t

Of the four metaphors explored by Stefik, digital libraries and the electronic marketplace seem the strongest, probably because their extension into electronic realms grows from long

traditions in human experience. They offer the possibility of fairly clear and attainable developments, with plenty of room for further “dreaming.” They also seem to be the areas that generate positive feelings about technology and its effects on the individual and society.

Less strong are Stefik’s metaphors of electronic mail and digital worlds. Although important as part of the overall discussion, electronic mail may be fulfilling its potential to such a degree that it no longer requires much analysis – in other words, it is already a commonplace utility. Digital worlds, on the other hand, may still present too many unknowns in their effects on behavior to derive metaphors that can carry universal meaning.

In his Epilogue, Stefik states that his goal “has been to spark our imaginations and to make room for the voices of many creative and knowledgeable people.” In this he is mostly successful, having culled a variety of perspectives that can serve as starting points for further discussion. His book can also help us to move beyond thinking of the Internet as just technology or an on-ramp to information, freeing us to dream about what it might become. ☺

Crosstalk: A Forum on Technology, Teaching, and Learning

Academic Computing, in collaboration with the Dean for Undergraduate Education, has launched a forum called Crosstalk. Its purpose is to provide opportunities to examine the role of information technology in teaching. At Crosstalk, faculty can share strategies and solutions, identify resources and tools of common interest, reflect on the impact of information technology on teaching and learning, and give feedback to IS for academic computing planning and support.

At the first meeting in December, Vijay Kumar, Director of Academic Computing, and Rosalind Williams, Dean of Undergraduate Education, outlined their goals for Crosstalk. Attendees then discussed a range of topics, including courseware development, resources and infrastructure, sharing and communication, and teaching and learning spaces.

There was also discussion about the format and content of future forums. Minutes from the December 12 meeting are available via a link on the Crosstalk home page at

<http://web.mit.edu/acs/www/Practice.dir/crosstalk.html>

February Forum

Three to four Crosstalks will be held between now and June 1997: the next one is slated for February 26 from 2 to 4 pm. (Check the Web page above for the location and confirmation of the time). Professor John Belcher of the Physics Department will present a demo and case study of his use of video, math simulation, and animation to teach the concepts of fields in 8.02.

Mailing List Information

To be kept informed about future forums, join the *crosstalk* mailing list on Athena. You can add yourself to the list using *blanche* or *listmaint* or by sending e-mail to <nschmidt@mit.edu>. ☺



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Adobe Photoshop 4.0 Is a Program of Many Layers

Oliver Thomas

Adobe Systems recently unveiled Photoshop 4.0, the latest incarnation of its digital imaging software. The new release introduces many features and even a few new technologies. Key additions include adjustment layers, an Actions palette, and enhanced Web support. However, the focus of this release is on streamlining and refining existing features. Adobe has greatly improved the handling of layers and updated the user interface with a Navigator palette, guides and grids, and a standardized toolbox.

Big Program, Big Appetite

Photoshop 4.0 is very demanding of system resources. In both Macintosh and Windows versions, it requires a minimum of 16MB of application RAM (32MB recommended) and 25MB of hard disk space for installation. An additional 20MB of hard disk space is required during operation to accommodate the scratch disk.

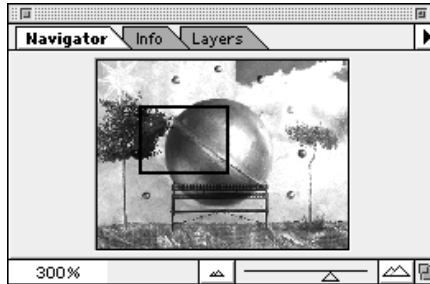
RAM requirements for opening large files have been reduced. However, for optimum performance you still need about three times as much RAM as the size of the image being edited to avoid hitting the scratch disk.

Layers upon Layers

Perhaps Photoshop 4.0's most noteworthy new feature is the implementation of adjustment layers. Accessible through the Layers palette, adjustment layers let you apply color and levels corrections without changing the underlying image data. This effectively adds unlimited undo capability with no image degradation. Adjustment layers can be moved up and down in the Layers stack, hidden, and discarded. You can apply adjustments to a set of layers, producing compound effects.

In general, Photoshop 4.0 relies much more heavily on the use of layers. Text, for example, is now automatically placed on a separate layer rather than inside a selection on the current layer. There is increased control over merging layers and drag-and-drop support for combining selections and images.

To help speed the redraw of high-resolution images in such operations as layering, compositing, and color adjustments, Photoshop 4.0 implements image caching technology. The program uses a low-resolution version of an image to update the screen display. Settings for tweaking the image cache can be found in the Preferences menu under the File menu.



The Navigator lets you move quickly to any location in a magnified image.

A New Look and Feel

Some of the most visible changes in Photoshop 4.0 are interface changes. The program now implements context-based menus – a feature familiar to users of Windows 95. A Control-Click (Macintosh) or Right-Click (Windows) opens a pop-up menu with items appropriate to the current location of the mouse pointer.

Many of the icons in the Toolbox have been consolidated into pop-out menus that allow access to related tools. For example, the crop tool has become part of the marquee selection tool set, and the Path tools have been moved from the Paths palette to the Toolbox. The crop tool now includes a rotate feature, so you can crop and rotate an image in a single step.

The new Navigator palette lets you move quickly to any part of an image, as well as change magnification by manipulating a thumbnail of the image. The zoom indicator in the lower left of the image window has been changed to an editable text box, so that you can type in an arbitrary magnification factor (0.2% – 1600%).

Many of the transformation tools have been combined into a Free Transform command that lets you move, scale, skew, rotate, and add perspective in one operation.

Guides and grids are another welcome addition. Selections can finally be snapped to a grid and aligned with user-positioned vertical and horizontal guides. You can adjust grid and guide settings through the Preferences menu.

Photoshop 4.0's redesigned interface offers a cleaner, standardized work environment. Adobe plans to implement this interface across all of its graphics applications.

A Trove of New Filters

Photoshop 4.0 comes with 48 new effects filters, bringing the total to 90. One of them, the Digimarc filter, offers copyright protection by embedding digital watermarks in images. To use this filter, you must pay an annual fee. For more information, see

<http://www.digimarc.com/>

Actions Palette, Web Support

Photoshop 4.0 introduces limited scriptability through the new Actions palette. While not as powerful as a scripting language such as AppleScript or VisualBasic, the Actions palette lets you define simple macros that can be executed on a single image or applied to all of the images in a folder. Six Actions – including Drop Shadow and Vignette – are built into the palette.

Actions can be especially useful in preparing images for publication on Web pages. You can, for example, record a macro to scale an image to thumbnail size, sharpen it, reduce the number of colors, and save the result. This Action can then easily be applied to an entire folder of images.

Photoshop 4.0 also supports three additional file formats used on the Web: Portable Document Format (PDF); Progressive JPEG; and Portable Network Graphics (PNG).

Availability and Help

Macintosh and Windows versions of Photoshop 4.0 are available at the MIT Computer Connection (W20-021) for \$230. Photoshop 3 owners can upgrade to 4.0 at reduced cost by contacting Adobe directly at 1-800-492-3623.

Photoshop 4.0 comes with a user manual, tutorial CD, and online help. Adobe also provides a valuable collection of Photoshop material online at

<http://www.adobe.com/prodindex/photoshop/main.html>

Some Tips for Handling Unwanted Electronic Mail

Joanne Costello

If you use e-mail on a regular basis, your electronic doorstep has probably been littered with junk e-mail – in the form of advertisements, chain letters, or other unwanted messages. For many, junk e-mail has become a daily occurrence, much like its paper equivalent.

Spams are the most common form of junk e-mail. These bulk mailings are sent from a spamming site to many recipients. The spam may be an ad from a local deli or an online service: any offering that could benefit from wide exposure. This type of e-mail is generally characterized by the lack of usual bulk-mail controls: removal from mailing lists, access to humans at the site of origin, and so on.

While such mail is annoying and not in line with the purpose of MITnet, there is little that IS staff can do to prevent companies from advertising in this manner. Most attempts to intervene have been in vain. Either the mail has been returned with a “no such user” message or an automated response indicates that the message has been received. The bottom line is that as long as companies get some positive responses to their spams, they can choose to ignore all the negative ones.

What Can You Do?

If you receive a spam, you have a few courses of action. Many Internet service providers (ISPs) have anti-spamming rules, so reporting to the ISP directly may help. Generally, you do this by sending e-mail to <postmaster@ISP address>, where the ISP address is the part of the sender's e-mail address after the “@” sign.

Some ISPs don't try to ban spamming, but do enforce guidelines for bulk mail which include such things as removing users from mailing lists at their request and having a responsible individual associated with each account. Again, sending mail may help.

Another thing you can do is set up filters in your e-mail program so that it rejects any future mail from the offending party. For example, in Eudora you can use the Filters command under

the Windows menu to automatically put all mail from a specific sender into Eudora's Trash mailbox. For specifics, see Eudora's online help or contact the Computing Help Desk at x3-1104.

Of course, you can always just delete the unwanted message.

Bulk E-Mail at MIT

It is against the MITnet Rules of Use to send bulk e-mail. It is not appropriate to use e-mail as a way to broadcast information directly to a large number of people (e.g., an entire MIT class). This is true whether you include the recipient usernames individually or use a mailing list.

These guidelines are not based on etiquette alone: the mail system does not have the capacity to process a very large number of e-mail messages at once. When a user sends out an announcement to a huge list of recipients, the mail servers get overloaded, disks fill up, and staff intervention is required. The result is a degradation of service for all users. Chain mail is especially abusive of the system.

In matters of bulk-mailing it may be wise to follow the advice of the FidoNet bulletin board networks:

- Thou shalt not annoy.
- Thou shalt not be easily annoyed.

Harassing Mail

If you receive e-mail that is of a more disturbing or harassing nature than a spam, there are steps you can take. First, let the sender know that you do not wish to receive any more mail from him or her.

If you continue to receive mail, MIT offers several avenues to address the problem. One of these is to send e-mail to <stopit@mit.edu> with a clear explanation of the situation. This list is monitored frequently by a few senior administrators in IS and communication with the perpetrators is quick.

For a complete listing of resources, see *Dealing with Harassment at MIT*, which was sent recently to all faculty, staff, and students. You can access this document on the Web at

<http://web.mit.edu/communications/hg>

If you did not receive a paper copy and would like one, call Joan Farrell in the Personnel Office at x3-4286. ☺



This column presents news and tips from the consultants who staff the Computing Help Desk, x3-1104. Check out their Web home page at <http://computing-help.mit.edu/>

Q What are macro viruses and how are they different from other computer viruses? How can I protect my files from them?

A Macro viruses use an application's macro programming language for transmission. Unlike earlier viruses, they infect documents, not programs. They are also the first cross-platform viruses: they can be transmitted between PCs and Macintoshes. You can receive infected files via diskette, the Internet, or e-mail attachments.

Microsoft Word has been the target of roughly 180 macro viruses (there's also one well-known Excel virus). While early versions of these viruses have been relatively harmless, the newest strains can destroy data.

A well-known macro virus is the Concept virus, which changes an ordinary Microsoft Word 6 file to a template file that you can no longer alter. The virus then infects new Word documents as they are saved. It also infects existing documents if you save them with the Save As command.

To protect against viruses, including macro viruses, install the latest version of Dr. Solomon's Anti-Virus Toolkit. This site-licensed software is available to all MIT faculty, staff, and students via the Web. You can download the Toolkit for your platform from the MIT Information Security Office home page at

<http://web.mit.edu/security/www/>

Be sure to bookmark this Web page. To protect against new viruses, you'll need to download Toolkit updates at least once a quarter.

For more in-depth information on Word macro viruses, go to

<http://www.drsolomon.com/vircen/macrovir.html>

For a list of antivirus resources on the Web, see page 8.

If you have questions about viruses or think you have a virus on your machine, contact the Computing Help Desk at x3-1104. ☺



Apple Makes Video Editing Easy with Avid Cinema

Ginny Williams

Apple Computer recently introduced Avid Cinema, an easy-to-use digital video editing package. This integrated package consists of a video card and software that features storyboard templates and a tab-driven interface.

Basic Steps

There are four basic steps to making videos with Avid Cinema.

1. *Plan the video.* The software provides more than 20 storyboard templates with suggested camera shots and sequences. These templates are fully customizable.
2. *Film and import the video.* Use a camcorder to shoot your video. Then, within the Avid Cinema software, locate the video source (such as a camcorder or VCR), name the project, and click on the Record button.



The Avid Cinema interface when in Edit Movie mode.

3. *Edit the video.* Use Avid Cinema's editing features to combine video clips, QuickTime movies, and tracks from audio CDs. You can drag and drop shots to rearrange them, add titles and credits, create transition effects, and record voice-overs.
4. *Publish the finished video to videotape or digital formats.* You can save videos on VHS tape or in several QuickTime formats. These formats are optimized for different end uses,

depending on whether you plan to incorporate the video into presentation software, send it across the Internet, add it to a Web site, or publish it on a CD-ROM.

More on the Hardware

Avid Cinema runs on Performa and Power Macintosh systems with a PCI expansion slot and built-in composite or S-video input. Minimum system requirements are MacOS version 7.5.3 or later, 24MB of RAM, and a 1GB hard drive.

The 7-inch video card supports the leading video standards (NTSC and PAL) and has Motion JPEG compression/decompression on board.

Availability and Pricing

The MIT Computer Connection sells the Avid Cinema package as part of a Video Editing bundle (part no. M5609). This bundle, priced at \$2195, includes a Macintosh Performa 6400/200 with 32MB of RAM and a 2.4GB hard drive. The Avid Cinema video card and software will be available as a stand-alone product in the near future. For more information, contact the MCC at x3-7686 or <mcc@mit.edu>.

Reorganized Help Desk Has New Numbers and E-Mail Addresses

Mary Ziegler

The Computing Help Desk has established new phone numbers and e-mail addresses (see chart below) as part of an effort to improve its services. Roughly 20 months ago, the Help Desk Redesign Team worked out a plan that included providing the MIT community with clear points of contact for computing support. Over the past nine months, the team has taken several steps to implement this plan. IS has merged the staff from four separately run help lines – Microcomputing, Network Services, Operations and Systems Client Services, and UNIX/VMS – and located them together in Building 11.

The Redesign Team considered how to categorize a new set of contact points (phone numbers and e-mail addresses), so that customers could be put directly in touch with a consultant with the right expertise. Under the new plan, customers contact the Help Desk

based on the platform they use on their desktop (Macintosh, PC, UNIX/VMS). There is also an extension for other queries that don't fit neatly into a platform-based category.

Although for the time being you can still reach IS consultants using the old points of contact (from the four separately run help lines), the new phone numbers and e-mail addresses are fully operational. The 1996-97 MIT Directory lists the new numbers and e-mail addresses.

Automatic Call Distribution

The rollout of new Computing Help Desk phone numbers has been

synchronized with the setup of an automatic call distribution (ACD) system. The system connects callers to a consultant on the line they dialed; if no consultant with that expertise is available, the call is forwarded to the first free Help Desk consultant. If all consultants are busy, the ACD system gives callers the option of waiting in a queue or leaving a voice mail message.

The ACD system also provides the Help Desk with key data, such as total call attempts, abandon rates, and waiting times. This data will be used to optimize staffing levels.

PLATFORM	EXTENSION	E-MAIL ADDRESS
Macintosh computers	3-1101	mac-help@mit.edu
PC computers	3-1102	pc-help@mit.edu
UNIX/VMS computers (by subscription only)	3-1103	unix-vms-help@mit.edu
Other	3-1104	computing-help@mit.edu



Case Study of a Web Redesign: The Top-Level MIT Pages

Robyn Fizz

On January 1, in the spirit of the new year, a redesign of the top-level MIT home pages was launched at <http://web.mit.edu/>

The rollout marked the culmination of four months of work, from initial brainstorming through design and testing.

Key members of the redesign group were Suzana Lisanti, leader of the Campus Wide Information Systems (CWIS) team, and consultants Matthew Wall and Julie Yang from the Department of Mechanical Engineering. Other contributors were Bruce Bernstein, Director of the Publishing Services Bureau; Laurie Cohn, a multimedia consultant; Graham Ramsay, a photographer; and Debi Fuchs of the CWIS team.

Brainstorming

To start, the redesign group held several brainstorming sessions where they discussed a variety of visual ideas. They played with treatments of the MIT dome and *Mens et Manus* logo before stepping back and deciding that they first needed to define the identity of the site. They came up with three elements of MIT culture that the Web pages should convey:

- Excellence in education and research
- A passion for inventing the future
- A communal tradition of humor, embodied by hacks such as placing the police car on top of the dome.

Based on these traits, the team decided on an uncluttered look that would show logic in organization and facilitate access to information. Excellence in research and academics would be evident in the information provided, and achievements highlighted through a *spotlight* link. As a way to focus on invention and humor, the top of the first page was targeted as a location of change and surprise.

Site Structure

Another piece of the redesign was to reconsider the information structure of the MIT site. The team worked to achieve dual access – making it possible to locate information by an official name (for example, by looking up

Benefits Office under *administration*) or by the resource provided (employee services under *resources*). The *groups* link offers yet a third way to get at information: it emphasizes the communities and societies that make up MIT.

The team also identified first-level topics from the original home page that had grown in volume and become unwieldy. These were split into more manageable topics (for example, the single page *Administration and Services* was split into two distinct categories, *Administration* and *Resources*).

One major addition to the infrastructure of the MIT home pages is a campus map, available through the *map* link on the top-level page or by clicking on the compass icon at the top right of second-level pages. In addition to helping people physically navigate around MIT, the campus map provides yet another mode of access to information at MIT.



Design Principles

Having defined a site identity and information structure, the team nailed down a set of design principles. Here's a summary of these principles and how they were implemented.

- *Accessibility.* The MIT site serves a broad spectrum of users: from high school students and their parents to corporations and alumni. The team recognized that the site would be accessed by many different Web browsers. To maximize accessibility, they chose Netscape Navigator 2.0, which includes tables support, as the standard browser for which they would design. They also decided that all of the pages (with the exception of the campus map) had to be readable by a text browser such as lynx.
- *Speed.* The top-level pages serve as a gateway, passing people through to the information they seek. Target information is provided by MIT's schools, labs, programs, and offices. To ensure quick pass-throughs, graphic-intensive pages at the top level were ruled out.

- *Clearly defined visual elements.* The team felt that MIT has such strong name recognition that the three letters, used as a graphic, should be central to the site. The banner on the second-level pages is a watermark of the MIT letters. This banner works as a navigational device: you can select menu items overlaid on the watermark to move around the site. A smaller version serves as the "return to the top page" icon.
- *Color scheme.* With the MIT banner as the key visual element, the team opted to use the MIT colors throughout the pages. On a background of warm off-white, hyperlinks are displayed in burgundy and viewed links in gray (Netscape defaults are blue and purple). Discrete colors were selected in order not to conflict with the designs of other MIT sites.
- *Development of a "family" of items.* Commonly used interface elements can enhance a visitor's sense of a unified Web environment. For example, in the MIT home pages, the compass icon always indicates a link to the campus map. A starter set of these elements – which can be used on other Web pages at MIT – is available at

<http://web.mit.edu/interface/>

Testing

Once the pages were developed, representative members of the MIT community were asked for feedback. The team also presented the pages to Professor Ed Barrett's class "Communicating in Cyberspace" (21W785), and received comments from MIT students who are studying analysis and authoring of cybertexts. Many of the suggestions from both groups have been incorporated in the redesign.

Back to the Beginning

Having gone through a full cycle of redesign, the team has some advice for starting out. Don't skip initial brainstorming sessions, no matter how well you think you know your subject. It's important to determine the identity of the site before going forward with graphic design. Once you've defined an identity, it's much easier to choose images and evaluate suggestions, because you have a vision against which to compare them. ☺



Phone Scams, 900 Numbers, and International Dialing Plans

Valerie Hartt and Lee Ridgway

Talk isn't always cheap. Phone scams are costing the unwary a lot of money. In the last several months a scam involving the 809 area code has become rampant, and this scam has recently expanded to other area codes (268 and 664). The best way to avoid being victimized is to know about the scam and how it works – in all its permutations. This article gives the lowdown on the 809 phone scam. It also covers MIT's policy concerning 900 phone numbers and changes in international dialing.

Messages from Unknown Callers

The phone scam starts when you receive an "urgent" message: it may be left on your answering machine or in your voice mailbox or be sent via e-mail. (If you have a pager, you may get a request to call to an unfamiliar-looking number.)

The message urges you to call a number in the 809 area code, for any of a variety of reasons: a threat of legal action on an overdue account; a family emergency such as illness, death, or arrest; or an appeal to claim a prize. Once you dial the number, you get a long recorded message or end up speaking to someone who responds in broken English. The name of the game is to keep you on the phone as long as possible. Charges run \$25 or more per minute, but you won't discover this until you receive your phone bill.

Yet another angle is to advertise in newspaper and Internet ads for overseas job opportunities or "mystery shoppers" who can earn money by checking on store quality. Typically these ads list a local number to call, which in turn refers callers to an 809 number.

The Perpetrators

When you dial an 809 number, you are calling somewhere in the Caribbean and thus making an international long-distance call. In addition, the 809 area code can be used as a "pay-per-call" number, similar to 900 numbers in the United States. Since the 809 area code is not covered by U.S. regulations that control the use of 900 numbers, there

is no legal requirement to inform the caller about any rates, fees, or charges connected with the call.

Trying to fight the charges after the fact can be difficult. Local U.S. phone companies and long-distance carriers have been reluctant to become involved, since they are simply providing the billing for the overseas phone company. And the overseas phone company will claim to have done nothing wrong. In fact, both scam artists and overseas phone companies profit from these calls.

Urgent?



...or a Scam?

Unfortunately, the scam may continue to broaden. The 809 area code used to cover the entire Caribbean, but in the last year many Caribbean countries have changed to new area codes (see below). Some of these have already been implicated in new scams.

Your best bet is awareness and caution. If you are asked to call a number with an 809 area code (or other area code that you don't recognize), investigate further or disregard the message.

Area Codes to Watch Out For

Country	Code
Bahamas	242
Barbados	246
Antigua	268
Cayman Islands	345
Montserrat	664
St. Lucia	758
Puerto Rico	787
St. Kitts/Nevis	869
Jamaica	876
Bermuda	441

Policy Change re 900 Numbers

MIT's policy has been to block all access to 900 numbers from campus phones, because most such numbers were not related to MIT business. (These "pay-per-call" numbers have typically been entertainment-oriented.) However, more companies have begun to use 900 numbers for business purposes, such as product support and check verification. With 900 numbers moving into the mainstream, MIT Telecommunications has revised its policy to allow removal of the block for individual phones.

To remove a 900 block, a department's Administrative Officer or other authorized person must send a written request to the Telecommunications Customer Service Center in E19-741 with the following information:

- Name of the staff or faculty member requiring access to 900 numbers
- MIT phone number to be unblocked
- Acknowledgment of responsibility for charges associated with 900 calls.

The unblocked phone should be secured from unauthorized access.

Changes in International Calling

The world is running out of phone numbers! Changes in North American area codes are under way, including the possibility of new codes in Massachusetts. Changes in international calling are also coming, with the prospect of 15-digit numbers on the horizon.

For international calls, most 12-digit country and city codes remain valid. What the new international dialing plan makes possible is the assignment of numbers of 13, 14, or 15 digits. Deutsche Telecom has already assigned longer numbers in Frankfurt and the same will soon happen in Tokyo. Other cities with the prospect of longer numbers include Amsterdam, London, Munich, Osaka, and Rome.

Because new number assignments are under the control of each country's Postal, Telephone and Telegraph authority, AT&T may not always be notified of changes in advance. If you have trouble placing a call, check with an international operator (dial 9 + 00) or MIT operator to verify the country's number format.

Questions? Call the Telecommunications Customer Service Center at x3-3690. ☐



Getting Help

If you don't know where to get help for your computer, network, or telephone problems, dial one of the help lines listed to the right.

If you prefer to use e-mail, you can send your questions to the corresponding addresses on the far right. (When logged into Athena, you can also use the `o1c` command to send questions to Athena's online consultants.)

For a complete list of services offered by Information Systems, see the Web page at

<http://web.mit.edu/is/>

For help with...	Dial...	Or send a message to...
Athena Computing Environment	3-4435	olc@mit.edu
Athena hardware repairs	3-1410	hotline@athena.mit.edu
Computer and printer repairs	3-0815	pcservice@mit.edu
Computer sales	3-7686	mcc@mit.edu
Disabilities and computing	3-7808	atic@mit.edu
IS mainframe (VM server)	3-1104	mithelp@mit.edu
Macintosh computers	3-1101	mac-help@mit.edu
Networks/Other	3-1104	computing-help@mit.edu
PC computers	3-1102	pc-help@mit.edu
Telephone repairs	3-4357	5help@mit.edu
UNIX/VMS (by subscription)	3-1103	unix-vms-help@mit.edu
Voice mail	3-3677	vmail@mit.edu



Antivirus Resources on the World Wide Web

Many strains of computer viruses are making the rounds – especially macro viruses (see Computer Corner on page 4). To protect your machine and its contents against these intruders, it's important to install antivirus software. MIT has a site license for Dr Solomon's Anti-Virus Toolkit, which you can get from

<http://web.mit.edu/security/www/>

To keep up with the latest news about virus threats, hoaxes, and resources, check out the Web pages listed to the right.

Antivirus.com

<http://www.antivirus.com/>

Antivirus online

<http://www.av.ibm.com/current/FrontPage/>

Antivirus Resources

<http://www.hitchhikers.net/av.shtml>

Computer Virus Myths

<http://www.kumite.com/myths/>

Dr Solomon's Home Page

<http://www.drsolomon.com/>

National Computer Security Association Virus Help

<http://www.ncsa.com/avpdl.html>

