

SCANFAX

November 1999

Volume 51, Issue 9



IEEE

Networking the World™

A publication of the
Institute of Electrical & Electronics Engineers
— Chicago Section —

Network Computing

***The demand for increased productivity, security
and streamlining functionality is enormous.***

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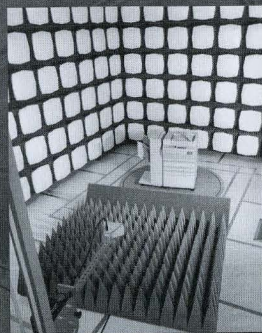
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Chairman's Message

Edward G. Bogus, PhD.
IEEE Chicago Section, Chairman

On August 21, 1999, the Illinois Engineering Council (IEC) held its annual awards and recognition banquet at the Hyatt Regency O'Hare to honor recipients of the 1999 Project of the Year Award. IEEE Chicago Section officers attending the affair included John Waters (PACE chairman), Bert Orszula (Government Activities chairman), Jack Sherman (CPMT, and CE/SP chapter chairman), and me.

The IEC is a council of 21 engineering societies with the IEEE Chicago Section being one of its members. Through these member societies, the IEC represents more than 20,000 engineers, surveyors and scientists throughout the state of Illinois as an advocate on matters of education, registration and public policy.

Each year the member societies are solicited for nominations for the Project of the Year Award. The projects must be completed in Illinois and demonstrate interdisciplinary engineering accomplishment, creativity and social benefit. Anyone wishing to submit a nomination should do so by March 15, 2000. (Send nomination to the attention of Andy Gremer at the IEC office, 51 W. Jackson Blvd., Suite 1730, Chicago, IL 60604.)

This year's winning projects were Motorola's Environmentally Sensitive Product Design Program, The Chicago Sun-Times Newspaper Production Plant, and Peoria's Riverfront Festival Park and Gateway Building.

Motorola's project of technology development for environmentally preferred products has been in existence for several years. The major areas of interest involve the reduction of hazardous materials, the reuse of materials, and the managing of the products environmental performance. Particular attention was given to the development of lead-free solders. Through this program, Motorola is helping to reduce lead concentration levels in leachate from municipal landfills. Leachate that escapes from landfills threatens the environment and public health by contaminating ground and surface waters.

The look of 28th and Ashland on the south side of Chicago is changing rapidly with the construction of the new Chicago Sun-Times Production Plant. This project involved engineering feats from dynamic compaction for site preparation to pouring concrete "super-flat" for robotic storage and retrieval requirements. When completed, the new facility will merge the entire Sun-Times printing, inserting, distribution

and fleet maintenance operations that are currently performed at three sites around the city. Additionally, the technological capabilities in a number of key areas have been upgraded to accommodate the papers expected growth.

Peoria's Riverfront Festival Park and Gateway Building represent a major civic investment in the newly expanding and developing riverfront area. This multi-discipline project involved the talents and expertise of architects, engineers (civil, structural, electrical, HVAC), landscape architects, community leaders and economic development personnel. An emergency phone system, a security surveillance system, and a video production facility are some of the technological advances that have been included in the park and Gateway building. This project demonstrates the city's belief in the riverfront and its ability to create functional and attractive public space.

On behalf of the IEEE Chicago Section members, I extend congratulations to all of the people that worked on these award winning projects.

CHICAGO SECTION EXECUTIVE COMMITTEE MEETING

Tuesday, November 9,
7:15 pm

DeVry, 1221 N. Swift
Rd., Addison, IL



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Network Computing

Network computing... a pretty ambiguous term, but as business dynamics change to include competing in a global economy, the demand for increased productivity, security and streamlining functionality is enormous.

By Terri Biloff

Network computing... a pretty ambiguous term, but as business dynamics change to include competing in a global economy, the demand for increased productivity, security and streamlining functionality is enormous.

With these demands, of course comes complexity. These complexities may include:

- Computer systems provided by more than one manufacturer
- Multiple system platforms that need to be strung together to form a seamless environment
- Security from internal as well as external sources
- Automating tasks that apply to the entire system, or individually without affecting others

Advances in technology have transformed the individual PC into a network of cohesive, cost effective networked systems and many IT pro-

fessionals are taking the challenge of tailoring their network to meet the needs of the individual user while maintaining continuity within the system.

Multi-user environments

Certainly the ability to share the same files and applications with multiple users is the biggest challenge when setting up any network. But if you're using windows NT Server 4.0, then "Terminal Server" may be your solution.

Terminal Server is a multi-user server that provides the ability to host multiple, simultaneous client sessions using Windows NT Server 4.0. Couple that with Citrix MetaFrame software which further extends the ability to deploy multiple business applications and you have a fully robust environment with security and functionality to boot!

If you are a Novell Network user,

then Zenworks for Novell Network 5 provides similar functionality by giving each workstation instantaneous access to any application, complete hardware/software inventory and memory/environmental information for a workstation through one workstation administrator.

With recent improvements, Zenworks also has "lights out" distribution, which lets you deliver software to desktops after hours while checking for successful installation.

If you're looking for a way to provide multiple users with the ability to share and view desktop applications from anywhere on the network, then Virtual Network Computing software is for you.

Multi-user internet access

Need multiple users to share internet access with multiple users while providing fully functional network

Continued on page 6.

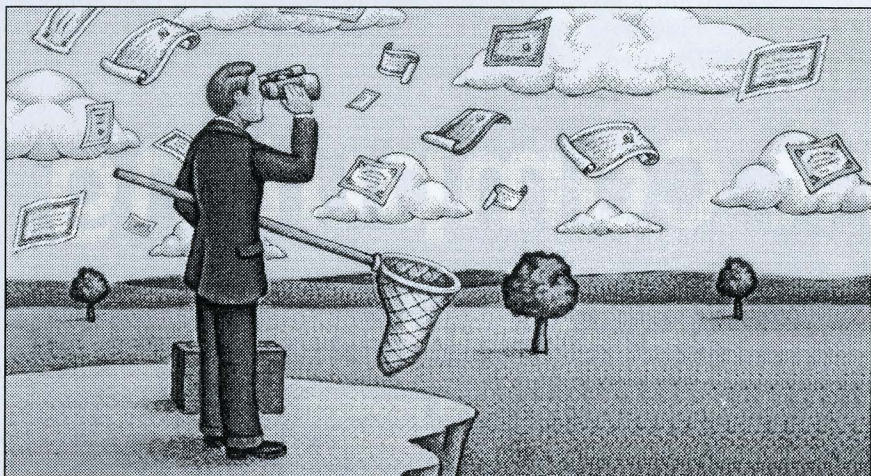
NETWORK COMPUTING

Continued from page 5

including security? Then @Home-BrowseGate may be right for you. Designed to offer on demand internet access for up to four networked PC's via one single PC/modem, this software supports FTP, SMTP, HTTP and has its own built in domain name server, plus it provides access to intranet based web sites, Net Nanny and reporting statistics that keep you in control of the Internet access across the network. RideWay PN is

great for companies with remote users or branch offices in different geographical locations. With RideWay PN two or more locations can share internet connections and can transfer files securely and quickly. It also serves as a firewall or internal proxy server.

Another utility to consider is Site Spy. If you're hosting your own web site on your network server, Site Spy utility is designed to alert the network administrator when the site becomes unavailable to their customers or visitors.



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Browser Configuration Management

A little known feature in Microsoft Internet Explorer called "auto configuration" can help solve the problem of making multiple browser configuration changes across a network. The Internet Explorer Administration Kit (IEAK) deploys a custom browser, which allows you to create an .ini file. This file can change configurations over the entire network of browsers.

It also allows configuration protection by producing a read only setting so no one can accidentally change the file, and the ability to change the file as many times as necessary (while making a backup to the original version).

Home Networking Advances

With more emphasis on telecommuting and increased home based business, network computing is making its way into the home as well as large corporate America.

Share Files Between Two PC's

So you have an office in the basement and the second floor but you want to have access to common files like databases from both PC's.

There are three technologies currently available to accomplish this:

1) Ethernet: requires you to run cable through your walls and ceiling to connect the system, but if you're not an electrician or handy with tools, this may not very realistic for you.

2) AC Powerline Network: easy to set up and lets you transfer files but is very slow.

3) Phone Link Network: if you need more speed and have phone jacks near your PC, this is a very viable option. A network card system is necessary, but it's a great way to be able to receive voice calls while still being productive on your network.

Share an internet connection between two or more PC's

If you have a phone line, wireless or AC power network, the ability to share an internet connection over your network is already built in. If you have an Ethernet network you'll have to buy a modem sharing software like WinGate.

This software allows three to six users to share one internet access.

Easy to configure, WinGate automatically configures your computer for you including assigning IP addresses to your client computer. Allowing automatic dialing, you can set WinGate to automatically dial up your Internet Service Provider the moment you log on!

Edit files poolside

It's 80 degrees, would you rather be inside your office, or outside in the sun doing work? Well you can with a notebook and a Radio Frequency Network (RF Network). Systems such as Proxim's Symphony for a PC card or Acer's Wireless PC Connection use wireless radio frequency transmission to connect computers and peripherals.

Your only limitation is the range, since you need to be within 450 feet of the transmitter.

Share a printer with multiple computers

Sharing output resources (like printers) are one of the best uses of home networks. You can print, fax or scan from any PC on a network using any type of home networking system.

An Ethernet network and network capable printer which connect to a network allows you to print across the network without being "powered on" all the time. If you want to share a scanner, you'll need a model that includes a network driver like Umax Astra.

Forming a home network with two or more different platform computers

You bought your daughter a MAC to do homework, but you and your wife have IBM PC's. Can you share printing peripherals and files? Sounds too good to be true but you can.

With Farallon's HomeLine cross platform phone line kit you can hook up Power MAC's to talk to PC's and share files in minutes. You'll need a simple Ethernet network environment and PCMacLAN software if you intend the MAC files to reside on a Windows network.

Other noteworthy home networking devices:

- Home PC Link Kit: connects your home PC, printers, scanners to each other and to the internet.
- Unimax Ethernet start kit: an easy

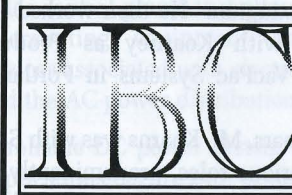
to use starter kit that helps you build a peer to peer network.

- PC buddy: lets you add a second monitor, keyboard and mouse to any PC so more than two people can share the same PC at the same time.

Network Performance

The question of the effects of network computing and how it impacts your network traffic have been on everyone's mind for quite some time. Like other networks you've run

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IEEE PES
CHICAGO CHAPTER

Innovations in
Distribution
Automation

Wednesday,
November 10, 1999

CHICAGO/ROCKFORD
IEEE
CONSULTANTS'
NETWORK

Electrical Workplace
Safety

Monday,
November 22, 1999

LUNCH MEETING

David Kearns, Director of Application Development, EnergyLine Systems

About the Speaker:

Mr. Kearns received his BSEE from the University of Kentucky. He spent 15 years with Kentucky Utilities in distribution engineering in Lexington. He then worked for three years with Kearney as Product Manager for VacPac Systems in Portland, Oregon.

For nine years, Mr. Kearns was with S&C Electric in various roles, predominantly in Distribution Automation Product Development & Marketing. Since 1997, he has been Regional Sales Manager at EnergyLine and most recently Director since acquisition by S&C.

About the topic:

The talk will discuss the use of Distributed Intelligence and Peer to Peer communication technologies now being

used by numerous utilities (including Commonwealth Edison) to increase system reliability and reduce the impact of distribution outages.

Location:

Chicago Bar Association, 321 South Plymouth Court (Near Jackson & Dearborn), Chicago, IL 60604.

Time: Social: 11:30 am.
Lunch: 12:00 pm.
Presentation: 12:15 pm.
Adjourn: 1:00 pm.

Reservations:

Lunch tickets can be purchased in the lobby bookstore (\$10.50). Please call the IEEE Business Office at (800) 898-IEEE to make your reservation.

For more information, please visit the Chicago Chapter IEEE PES web site: www.ece.iit.edu/~flueck/chicago_pes/

DINNER AND MEETING

Ben Miller, President of B. Miller Engineering

About the Speaker:

Ben Miller is an electrical engineering consultant who specialized in commercial and industrial automation, controls and power. He has been President of B. Miller Engineering since 1995. Before that, he spent 22 years in engineering management in the commercial appliance industry. He is a member of IEEE, IEEE Rockford/Chicago Consultants Network, and the American Society of Mechanical Engineers, and is a correspondent with the National Academy of Forensic Engineers. He is a licensed Professional Engineer in Illinois, and active in the Illinois Society of Professional Engineers. He is also on the adjunct faculty of Oakton Community College in Des Plaines, where he teaches beginning and advanced courses in Programmable Logic Controllers and automation.

Ben has significant experience working with electrical safety, at the product design level as well as in the workplace, including the investigation of electrical accidents.

About the topic:

Every year, hundreds of workers are electrocuted while on the job. Ben will present an overview of the current statistics regarding electrical accidents and deaths in the workplace, including the jobs most at risk and major causal factors. He will suggest action that employers should take to help prevent electrical injuries to their employees, and identify opportunities for consultants in the electrical field to offer their services in this effort.

Location:

Dinner: Bakers Square, 270 E. Northwest Highway and North Court, just south of the Library. Reservations are not required.

Meeting: Palatine Public Library, 700 North Court, Palatine, IL, 847-358-1216.

Time: Dinner: 6:15 pm.
Presentation: 7:30 pm.

Information about members of the network can be found at <http://www.drblank.com/coareas.htm>

News items can be found at <http://www.drblank.com/coaction.htm>

The Network can be reached at: g.l.blank@ieee.org



IAS/IES JOINT
MEETING WITH
THE NORTHWEST
SUBSECTION

Battery and
DC System
Presentation

Wednesday,
Nov. 17, 1999

IAS/IES DINNER PRESENTATION

Kurt W. Uhler, Battery and DC System Technical Expert - ComEd

About the topic: Stationary batteries play an important and vital role in electrical switchgear used in utility and industrial applications. The stationary battery, battery charger and the DC distribution system provides control power that allows operation of interrupting equipment and protective devices associated with electrical switchgear and the AC power distribution system.

A reliable DC power system for switchgear applications begins with proper sizing of the stationary battery. This presentation will address sizing and selection of a stationary battery and will cover the recommendations of the IEEE standards concerning this subject. The presentation will also cover voltage considerations, loads and the duty cycle as they relate to battery sizing. Different storage battery technologies will be examined for their use in switchgear applications.

About the speaker: Kurt Uhler is the battery and DC auxiliary power system technical expert for Commonwealth Edison. He is responsible for stationary battery and DC system design, installation, maintenance and testing for transmission and distribution substations, nuclear generating stations, and fossil generating stations. Kurt received a Bachelor of Science degree in electrical engineering and technology from Southern Illinois University, Carbondale in 1981.

Kurt has authored and presented several papers on stationary batteries. He is currently a member of the IEEE Standards

Coordinating Committee 29 and the Battery Protection Working Group (IEEE Standard 1375). He is a past member of the IEEE CD Auxiliary Power Task Force (IEEE Standard 946). Kurt also serves as an advisor for the Illinois Institute of Technology, Department of Chemical and Environmental Engineering - Inter-Professional Projects, Distributed Independent Power Generation Systems.

Location:

Como Inn, 564 N. Milwaukee Ave, Chicago, IL.

Directions: The Como Inn is located on Milwaukee Avenue just off the Kennedy Expressway (I-90/94) near Grand Ave. and Halsted St.

Time: Social: 5:30pm.
Dinner: 6:00pm.
Presentation: 7:00pm.

For reservations:

Cost: \$25 includes the presentation and your choice of a chicken or pasta four course dinner. Please call the IEEE Business Office at (800) 898-IEEE or (630) 724-0200 with your entree preference on or before October 15.

NOTE: For P.E. licenses that require continuing education for renewal, attendance at IEEE Technical Meetings is acceptable as one Professional Development Hour (PDH) per meeting.

The upcoming 1999-2000 IEEE - IAS meeting dates are: January 19, February 19, March 15 and April 12.

Calendar of Events

DATE	EVENT
Nov. 9, 1999	IEEE Chicago Section EXECUTIVE COMMITTEE MEETING
Nov. 10, 1999	PES INNOVATIONS IN DISTRIBUTION AUTOMATION
Nov. 17, 1999	IAS/IES Joint Meeting with the Northwest Subsection BATTERY AND DC SYSTEM PRESENTATION
Nov. 22, 1999	Chicago/Rockford IEEE Consultants' Network ELECTRICAL WORKPLACE SAFETY

ATTENTION

IEEE Chicago Section Chapter Chairmen:

Increase the attendance at your chapter meetings
by including a meeting notice in SCANFAX.



INSTRUCTIONS

MEETING NOTICES, SCHEDULES

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- Step 2 Fax a confirming hardcopy of the notice to: 608-222-0262.

If e-mail is not an option, contact Nancy Lee or Julie Redders at Slack Attack Advertising, 608-222-7630.

LET US HEAR FROM YOU

SCANFAX also welcomes existing articles and papers. If you have authored material of interest to SCANFAX readers, please consider submitting your work for publication.

- ☐ I would like to submit an article or paper for publication.

SCANFAX 2000 EDITORIAL SCHEDULE*

We have established a tentative editorial schedule for 2000 (see below). If you are knowledgeable in this area and would be open to the *Scanfax* feature writer contacting you for information and opinions, please let us know. We like to include input from IEEE Chicago Section members as much as possible in our feature stories.

It's a great way for you to get recognition!

January Issue

EDITORIAL FOCUS: ISO Certifications

February Issue

EDITORIAL FOCUS: Robotics and Automation

March Issue

EDITORIAL FOCUS: Electrical Insulation

April Issue

EDITORIAL FOCUS: Y2K - Are We Surviving?

May Issue

EDITORIAL FOCUS: Magnetism

DEADLINES

January Issue	November 25
February Issue	December 25
March Issue	January 25
April Issue	February 25
May Issue	March 25
June Issue	April 25
September Issue	July 25
October Issue	August 25
November Issue	September 25
December Issue	October 25

Topic: _____
Name: _____
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The *Scanfax* feature writer may contact me for the _____ story scheduled for _____, 2000.

Name: _____
Business: _____
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June Issue

EDITORIAL FOCUS: Education/Universities

September Issue

EDITORIAL FOCUS: Nuclear and Plasma Sciences

October Issue

EDITORIAL FOCUS: Social Implications of Technology

November Issue

EDITORIAL FOCUS: Antennas and Propagation/
Microwave Theory and Techniques

December Issue

EDITORIAL FOCUS: Consumer Electronics

*Features subject to change without notice

NETWORK COMPUTING

Continued from page 7

before, network computing traffic performance largely depends upon how the applications are run and distributed across the network to the network client.

The most efficient networks run the applications off the server and partition functions into modules that are delivered over the network only as they are needed by the user. This type of set up leverages multi-user to

keep network traffic related to application execution down to a manageable level.

Some considerations for designing your network with traffic in mind:

- 1) **Server** - the number of processors installed, processing speed and amount of memory should be considered
- 2) **Client** - processor speed and graphics control
- 3) **Network** - available bandwidth and network speed

The initial planning, configuring and setup are just as important to the

network performance as the efficient distribution of applications.

Speed and performance from your desktop should be considered first, followed by the speed and performance of your network.

Inadequate PC equipment with a top of the line network will still cause processing time, but newer PC's with large memory blocks and fast processors will affect the speed and performance of even the most basic network server. ■

IEEE OFFICERS AND CHAIRMEN

Over the past few months, officer elections were held in each of the section entities. These entities include the Section, the two subsections (Fox Valley and Northwest), and 16 chapters. The elected officers and committee chairmen for the Section are listed below:

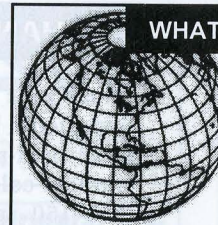
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Visit our Website at <http://www.uic.edu/depts/enga/> for information on UIC programs.

* Some restrictions apply.



Spring Semester 2000: January 1 - May 5, 2000

Off-campus course offerings:

CEMM 494	Traffic Engineering Fundamentals
ME 594	C++ Programming for Mechanical Engineers
EECS 559	Neural Networks
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For more information, contact the Coordinator, Off-Campus Engineering Programs (MC 160), 851 South Morgan Street, Room 808, Chicago, Illinois 60607-7050.

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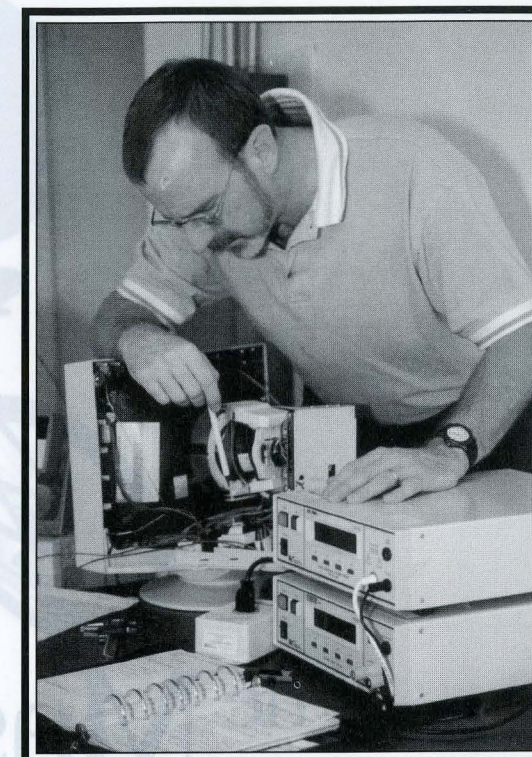
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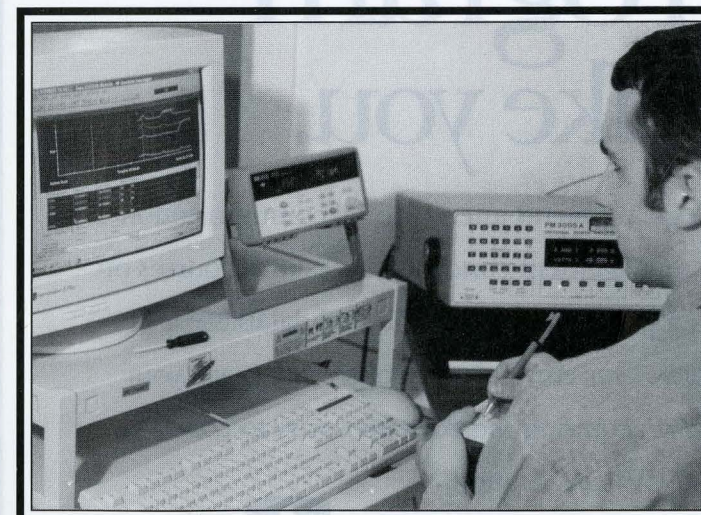


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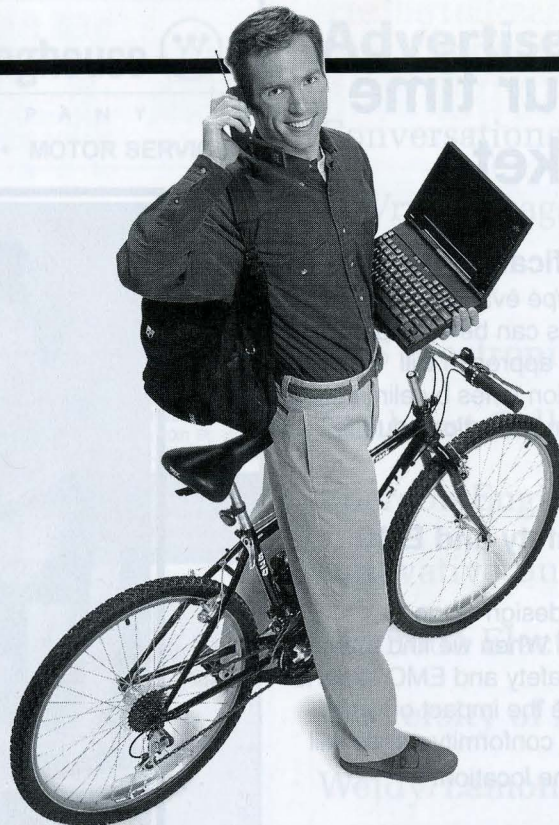
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