

May 2000

Lucent

magazine



NetworkCare Professional Services

SETS LUCENT APART

I N S I D E

New Day Dawning in China • Hail to Lucent's EH&S Heroes

60 Years and Still Going Strong

People said it couldn't be done, but Jack Keyser has never been one to give up. Keyser recently celebrated 60 years of service with the company — making him the longest working employee at Lucent. And he didn't waste any time setting his next goal.

"Reaching 60 years of service is a great feeling," said Keyser, manager of Customer Satisfaction for AMPS/PCS in the Service Provider Network's Wireless Group. "Having survived divestiture, trivestiture, spinoffs and several downsizings, I am very fortunate to have completed 60 years. I will now look forward to 65."

Keyser's co-workers think he has what it takes to make it to 65. "The word retirement is not in Jack's vocabulary," said Connie McKenna, one of Keyser's co-workers. "I do believe that with his love of the job, the people and Lucent, Jack will still be here to celebrate 65 years." Keyser's supervisor, Matthias Rode, set the bar a little higher. "I am lucky to have the pleasure of working with Jack, and I



"For He's a Jolly Good Fellow!" — Jack Keyser and his wife, Jeanette, recently celebrated his 60th Lucent anniversary at a banquet where friends, family and co-workers joined in the fun.

bet he will be here to celebrate his 70th anniversary." Congratulations, Jack, on this amazing achievement. Everyone at Lucent wishes you many more years of health, happiness and dedication!

— Rebecca Scott

READERS' LETTERS

Takes a Lickin'

A letter I received recently from a customer proved what Lucent employees have always known: we make excellent products. Lonnie Collins, supervisor for the Kansas City Power and Light Co., wrote to tell me that on Feb. 17, 1999, the company's Hawthorn Power Plant was destroyed by a natural gas explosion. Inside, Lucent fiber-optic cable kept working, despite the fact that its rigid steel conduit casing had been shattered in the explosion. The cable provided uninterrupted service to the company's corporate network for two months while demolition crews removed debris. Collins reported that when he was finally able to get inside the plant,



he was astounded by the destruction, and was amazed that the Lucent fiber-optic cable not only survived but worked flawlessly. He wanted the people of Lucent to know that when they made that cable, they made a fine product.

Ron Dyer
Lenexa, Kan.

Lucent Magazine ONLINE

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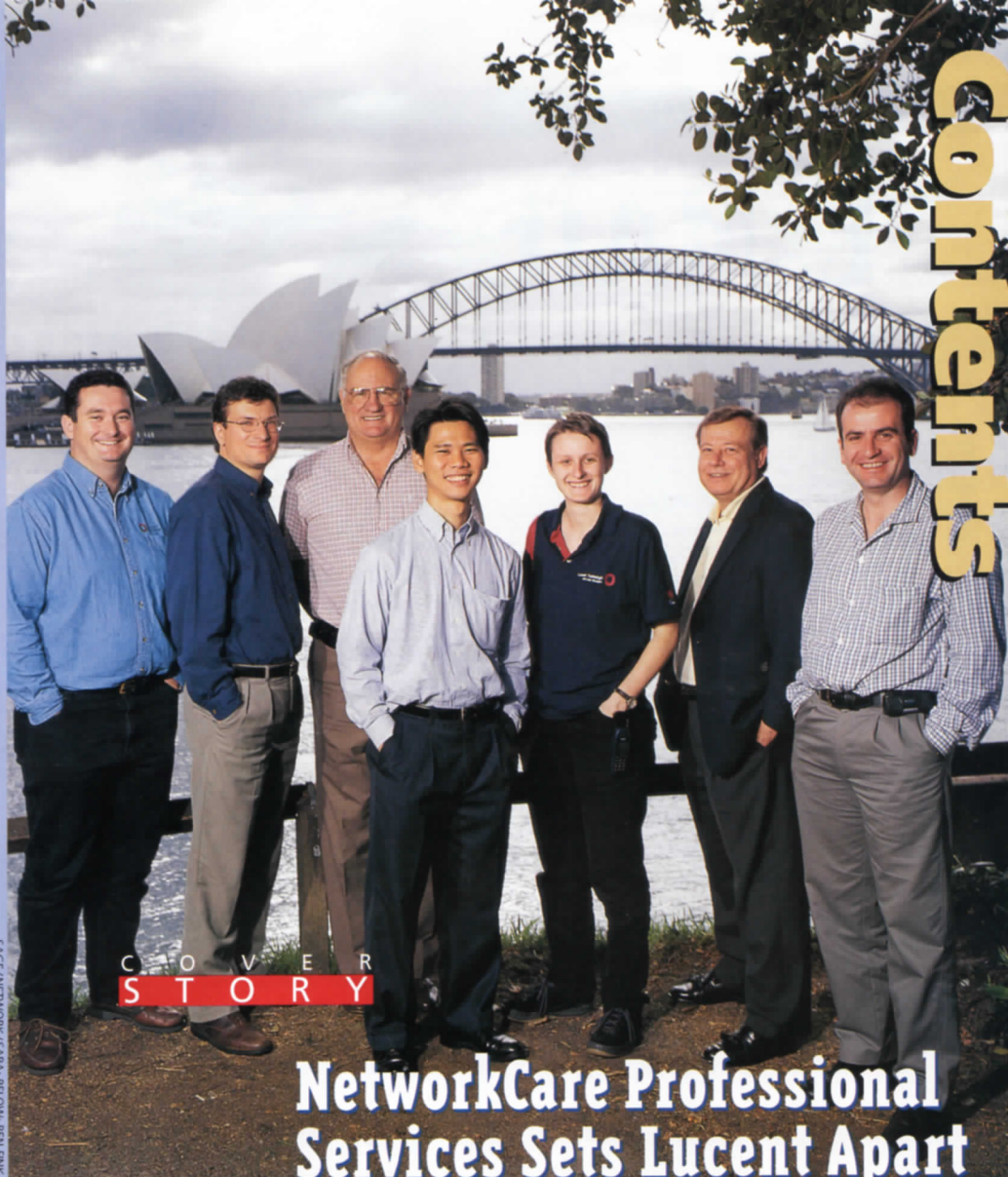
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SAGE / NETWORK / SABA, BELOW: BEN FINK

NetworkCare Professional Services Sets Lucent Apart

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LUCENT HONORS ITS
1999 EH&S Heroes



ADRIAN BRADSHAW

TOP Some members of the NetworkCare Asia/Pacific team in Sydney, Australia.
ON THE COVER Customers such as Mitchell Ashley (center), Vice President of Network Intergration at Jato Communications, rely on Lucent's NetworkCare Knowledge Center in Denver, where NetworkCare Professional Services' (NPS) engineers monitor Jato's networks and help develop business applications. Meeting with Ashley are Ken Campbell and Brenda Shaffer of Lucent NPS. **Cover photograph by Roger Tully.**

E-MAIL FROM THE REVOLUTION

Date: April 4, 2000
To: Lucent Magazine
From: Bell Labs / New Ventures



One for the Road

Date: April 3, 2000
To: Lucent Magazine
From: Microelectronics Group

Rising above Pennsylvania's Route 22 near Allentown, the Microelectronics (ME) Group's latest billboard is sending a timely message: "In the Lehigh Valley, we're always 3 hours ahead of Silicon Valley."

Grabbing the attention of travelers, the billboard casts a spotlight on the region's status as a hotbed of communications semiconductor expertise.

The design plays on ME's competitive edge as something more than simply a time zone advantage, and helps position ME as a technology leader and major presence in the community.

RICH CHARTLAND



Let There Be Light

Date: April 11, 2000
To: Lucent Magazine
From: Optical Networking Group

What do you call fiber optics without the fiber?

Answer: A venture between Lucent Technologies and TeraBeam Networks to develop and deploy TeraBeam's revolutionary fiberless optical networking system, which sends data through the air using invisible light.

With gigabit-per-second speeds, this technology accelerates the path between local and wide area networks, breaking the "last mile" bottleneck in accessing the Internet or other high-speed communications.

"To fulfill the potential of today's Internet requires the ability to deliver the very high speeds carried by local area networks across a city, a country or across the world," said Dan Hesse, CEO of TeraBeam. "By tapping into Lucent's leadership in broadband networking, coupled with our breakthrough technology, TeraBeam is leading the charge in shattering the first-mile speed barrier."

As part of the deal, the two companies will create a business called TeraBeam Internet Systems, in which Lucent will own 30 percent.

Take On Character

Group

Some of your favorite cartoons will become almost human with new software developed at Bell Labs. A new venture from Lucent, **face2face**, is licensing the software, which is designed to give animated characters lifelike facial expressions. The **face2face** software will help animators reduce costs, and has caught Nickelodeon's attention. The leading producer of TV and Internet animation will be the first beta customer to use the **face2face** software.

"Internet applications for **face2face** software represent a great opportunity for Lucent to leverage the emerging Web animation market through Bell Labs technology," said Tom Uhlman, president of Lucent's New Ventures Group. "This is the right time to launch this business." Check it out at: <http://www.f2f-inc.com/index.html>.

Optics All the Way

Date: April 17, 2000
To: Lucent Magazine
From: Optical Networking Group



As Global Crossing sets out to build a next-generation global optical network that will connect more than 200 cities around the world, it's looking to Lucent for the light.

As part of a two-year, preferred supplier agreement, Global Crossing will be the first carrier to deploy Lucent's *WaveStar* LambdaRouter—the world's first commercially available, high-capacity, all-optical switch, which was designed by Bell Labs.

Global Crossing also will be the first carrier to test Lucent's new *WaveStar* OLS 800G—a 320-channel dense wavelength division multiplexing (DWDM) system. With a maximum capacity of 800 gigabits a second (Gb/s), this record-breaking product is capable of sending the equivalent of 400 feature-length films in one second. The new system will be offered as an upgrade to Lucent's flagship 80-channel system and will be commercially available in the first calendar quarter of 2001.

Taking Home the Shingo

Date: April 18, 2000
To: Lucent Magazine
From: Wireless Networks Group



The Wireless Networks Group's Product Realization Center (PRC) at Mount Olive, N.J., is taking home the Shingo Prize for its top-notch manufacturing processes—and top-notch results.

Named for Japan's Dr. Shigeo Shingo, who devised just-in-time manufacturing and other manufacturing improvement principles, the Shingo Prize is open to manufacturers in the United States, Canada and Mexico, and to researchers throughout the world.

The prize recognizes the Mount Olive PRC's relentless dedication to quality and the results that dedication has produced. Cycle times, inventory and quality at the PRC have become internal benchmarks. Production has risen fiftyfold. And the team has wrung out 58 percent of the cost of the flagship CDMA PCS minicell wireless base station in its first four years of production.

"We don't set out to hit the market window, but to create it and open it first," said Lynn Mercer, Manufacturing and Global Provisioning vice president for Wireless Networks. "That's why Lucent enjoys a majority market share in CDMA PCS technologies."

Service



Microsoft has teamed up with Lucent to roll out the software giant's *Windows 2000* operating system to clients, including the Seattle Mariners. Key players included (from left) Jim Ange, Lucent's Business Development director, Pacific Northwest; Dave Curry, network manager for the Mariners, and Thomas Koll, vice president, Network Solutions Group for Microsoft.

es

SET LUCENT APART

The Internet never sleeps. No one knows that better than Ted Crawford, whose company, Andover, Mass.-based NaviSite, is critical for hosting high-end Web applications for business customers. As director of product architecture for NaviSite, Crawford was faced with a double-edged sword: a rapidly growing network that required infrastructure and engineering to keep up with demand. The solution: Lucent's *NetworkCare Professional Services* (NPS), a cadre of network engineers and consultants stationed across six continents, who do it all—from planning and design to operations, management, maintenance and education.

For service providers and enterprise customers alike, time to market is shorter than ever and is often the difference between success and failure. With little room for error in their communications networks, some 10,000 customers—including over 75 percent of the Fortune 500—rely on Lucent's NPS (www.lucent.com/networkcare) to skillfully manage their networks and solve problems quickly. The remedy may come from Lucent's own expert monitoring systems and software or via field technicians located around the globe.

Marshaling the combined expertise of the former Ascend, International Network Services (INS) and Lucent NetCare organizations, NPS has more than 5,500 specialized consultants, engineers and managers who help clients develop, build and operate integrated, multivendor networks worldwide.

"We chose Lucent NPS because their engineers are skilled in the specific technologies we were interested in," said Crawford, who

relied on NPS engineers to help with the design of NaviSite's network infrastructure, strategic planning, client training and technical support. NaviSite uses networking equipment from a variety of vendors—a multivendor network that NPS is uniquely qualified to support.

Phenomenal Growth

NPS's uncommon expertise and steady stream of networking talent help explain the organization's market leadership and phenomenal growth: soaring in the 40 percent range in each of the last two quarters—as Lucent's major competitors scramble to establish network services operations of their own.

"It's a testament to our ability to

execute on the opportunity. As the Internet and other network-dependent initiatives are driving demand for network services, there's a dearth of talent in the marketplace," said John Drew, executive vice president and CEO of NPS. "We have the largest communications networking services business in the industry, with the ability to attract top-notch people by helping them continuously develop their skills at the pace of technology."

Coupling that with a 17 percent annual growth in the network services arena, Drew plans on growing Lucent's NPS business two to three times faster than the market. Working toward that goal, NPS has ushered in over 500 new employees in the first quarter alone, and constantly taps the marketplace

for fresh talent. Aggressive recruiting and retention is all part of

maintaining what Drew calls the best "intellectual capital," a philosophy he carried with him from his days as CEO of INS.

Since the merger, NPS has fostered a more collaborative culture that

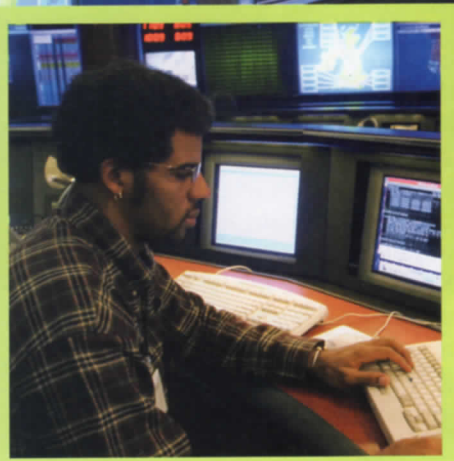
rewards knowledge: sharing what you know and continuous education. This enables its team to stay on top of the rapid changes in technology and remain relevant in its field, assuring customers the most reliable



John Drew
executive vice president
and CEO of NPS



Lucent's *NetworkCare* Knowledge Center (NKC) in Denver is one of five specialized facilities around the world that provide remote management and "round-the-clock support for service providers" voice, data, optical and wireless networks. NKC technician Gary Fox-Birdwell (inset) takes steps to ensure that these networks operate at peak performance.



DAVID CORNWALL

networking expertise at any time.

And now that the services business is taking off, Drew observed that the recent flurry of network buildouts is fueling demand among new and established carriers—with added revenue opportunity for Lucent. "Bundling services with technology used to be the way it was, but as more people rely on NPS to operate their networks, we need to sell these services for what they're worth."

Always-On Service

Under one umbrella, customers can pick and choose from a number of services and software that cover the full life cycle of multivendor networks, all delivered by worldwide engineers, field technicians and salespeople. The NPS team is organized into specialized solutions groups that tackle various network requirements.

The Maintenance and Management (M&M) team consists of 2,000 specialists and service executives who remotely monitor and manage more than 150 networks around the world and maintain

thousands of network devices—from hefty 5ESS switches down to the smallest modems.

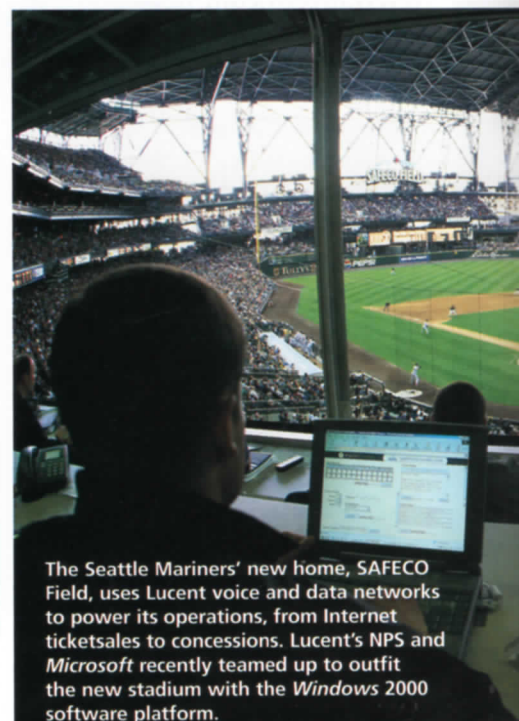
From its "always-on" *NetworkCare* Knowledge Centers located in the United States, Europe and Asia/Pacific, the M&M team keeps close tabs on these networks, flagging problems before they have a chance to escalate.

"In today's economy, nobody has the time or the resources to create and maintain a staff that will oversee their entire network," said Jeff Akers, NPS vice president of worldwide Maintenance and Management. "So it makes sense to out-task portions of this to a team like NPS, which fully understands multivendor networking. While our competitors choose to rely on other companies to provide this function, we have a direct services approach that provides the customer a single point of contact for stronger operations control and customer satisfaction. This is especially critical as customers expand into several different regions at one time." Akers added that for every top NPS account, there is a single M&M service manager handling all service issues.

Also in the trenches, the Field Operations team consists of about 2,200 engineers and consultants who handle the network planning,

design and installation projects for both service provider and enterprise clients. Whether it's helping Discount Auto Parts modernize its infrastructure or designing and deploying a global network for 3M's spinoff, Imation, the Field team is skilled in handling diverse projects.

When it comes to deploying large-scale service provider networks, NPS calls on its Complex Solutions Group. "This is a global SWAT team of engineers, project and bid directors specially trained to implement the end-to-end, fixed-price projects that bundle network equipment



The Seattle Mariners' new home, SAFECO Field, uses Lucent voice and data networks to power its operations, from Internet ticketsales to concessions. Lucent's NPS and Microsoft recently teamed up to outfit the new stadium with the Windows 2000 software platform.

with services," said Mark Quinlivan, vice president of Complex Solutions. "And it gives Lucent an edge as a one-stop supplier."

This team is now partnering with the Wireless Solutions business to provide a full range of services for One.Tel, the fourth largest wireless service operator in Australia. The Wireless Group is handling the acquisition and construction of cell sites, with NPS involved in the oper-

ation and eventual transfer to the client. The NPS and product deployment duo are developing the One.Tel project at three to four times the rate of any other network in Australia.

Paul Higgs, vice president for NPS in Asia/Pacific, pointed out that services played a starring role in Lucent's overall solution for One.Tel and sets the stage for Lucent's growth in Asia/Pacific. "By incorporating its world-class operations and

maintenance capabilities, professional services became an important differentiator in Lucent's solution for One.Tel. It will remain a key factor in expanding Lucent's services business across the region," he said.

To strengthen its position in Asia/Pacific, where deregulation is driving increased competition, global expansion and new service opportunities, NPS recently opened its *NetworkCare* Knowledge Center

A WINNING TEAM

Microsoft Partners with NetworkCare

At SAFECO Field, the Seattle Mariners' new baseball stadium, successful teamwork is not limited to the play-by-play on the field. Two off-the-field teammates, *Microsoft* and *Lucent*, joined forces to advance the ballclub into a high-tech league of its own.

The two companies outfitted the stadium with the new *Windows 2000* software platform in time for the 2000 baseball season. In addition, the modern stadium with its retractable roof uses Lucent's voice and data networks to power its operations, from Internet ticket sales to the concession stands.

Since 1998, Lucent—through the former International Network Services (INS)—has been working closely with *Microsoft* to deploy its software platforms to companies ranging from baseball franchises to the largest Fortune 500 corporations. Last year, INS was chosen to provide engineering support for *Microsoft's* internal rollout of *Windows 2000* beta—one of the largest rollouts of the system in the world.

This February, *Microsoft* tapped Lucent *NetworkCare* Professional Service (NPS) as a partner to provide network consulting services for *Windows 2000* to enterprises and service providers—including Nextlink Communications, Pfizer pharmaceutical and Discount Auto Parts, to name just a few. Over 600 NPS engineers are now certified as *Microsoft* systems engineers to deliver *Windows 2000* expertise, including

planning and preparation for the new system, security and remote network access.

According to Geoff Nyheim, general manager, Global Partners for *Microsoft*, Lucent's NPS is one of the few partners uniquely capable of launching this operating system and making it work smoothly with a customer's existing network. "The success of *Microsoft* and our customers depends on having a partner like Lucent NPS, with very

deep network knowledge and specialized skills in designing, and managing large-scale *Windows 2000* environments," said Nyheim.

During the launch, NPS cut its teeth on a critical piece of the *Windows 2000* operating environment known as the Active Directory, a central repository for all the directories within a company's network, including e-mail systems and intranets. Through its expertise in complex networking integration, NPS is helping customers evolve to the more centralized framework enabled by *Microsoft's* Active Directory.

The *Windows 2000* launch was a huge opportunity for both *Microsoft* and Lucent. Since its release earlier this year, *Windows 2000* is running in over 40,000 sites worldwide. Many analysts expect *Microsoft* to ship 2 million to 3 million servers this year alone for *Windows 2000* and NT systems.

Today, Lucent offers services around the globe to assess, evaluate, pilot, plan, design and implement *Windows 2000*. NPS engineers also have set up shop in *Microsoft's* new Partner Solutions Center in Redmond, Wash., working with network service providers to test networking equipment, while also showcasing Lucent's latest products and services.

In the case of the Mariners, migrating to *Windows 2000* meant speedier ticket sales and more efficiency in managing the day-to-day operations. Having Lucent go to bat with *Microsoft* meant that the Mariners could keep its eye on the ball instead of its communications network. "With my staff's focus on preparing for the upcoming season, Lucent has saved us time and money by walking in and running the project for us," said Larry Witherspoon, Information Systems director for the Mariners. "When it comes to *Windows 2000* networking expertise, Lucent's NPS is batting 1.000."

—Loren Talley



Teresa Yao, professional consultant, Complex Solutions for Lucent's NPS, works in *Microsoft's* new Partner Solutions Center in Redmond, Wash.



ROGER TILLY

ROGER TILLY

VitalSuite Takes the Guesswork Out of Network Management

To be successful in today's marketplace, it is critical for companies to have complete confidence in their networks. Lucent's *VitalSuite*, a family of break-through network and application management software solutions, is helping make that possible.

"As an enterprise network carrier, the network is absolutely critical to running our business," said John R. Evans, chairman and CEO, Convergent Communications. "We need a unified solution that enables us to monitor the performance of the entire enterprise. *VitalSuite* does that, allowing us to manage and report on everything from high-level business transactions to individual devices, all from an easy-to-use, single interface."

VitalSuite is the first software tool that identifies, monitors and troubleshoots network, application and business performance problems, taking the guesswork out of network maintenance. Through a series of detailed, graphical Web-based reports, the program pinpoints network difficulties quickly and accurately, allowing for speedy repairs.

"*VitalSuite* is taking off with a number of high-profile clients: General Electric; Banco Popular, Puerto Rico's largest financial institution; and *Microsoft*," said Dan Leary, vice president of Product Management at VitalSoft, the

software division of Lucent *NetworkCare* Professional Services. "The momentum of *VitalSuite* is based on its ease of use by executives, IT managers and end users,

as well as its comprehensiveness."

VitalSoft recently unveiled Version 7.1, which enables customers to support virtually any new network device on demand. "One of our customers' biggest frustrations is the inability to manage new devices as they are added to the network," said Leary. "With *VitalSuite* 7.1, we enable information technology professionals to support virtually any network, allowing customers to expand their networks with confidence."

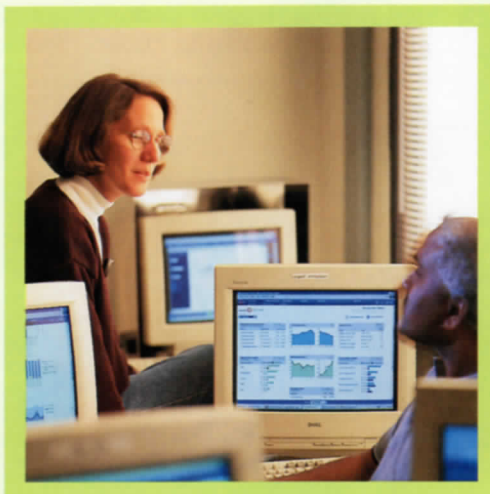
VitalSuite also pioneered the customizable portal, My Vital, which allows users to retrieve only the network performance information they need, when they need it. "We need a solution that allows individuals to extract only the data that is required

for them to do their jobs," said John Herrera, senior director of Global Networks and Operations for EMC Corp.

"*VitalSuite* provides that data."

For more information, visit the *VitalSuite* Web page at www.vitalsuite.com.

— Rebecca Scott



Donna Baily (left) and Thiagarajan "Hari" Hariharan are software engineers for *VitalSuite*, a comprehensive and easy to use network monitoring tool that's gaining momentum.

in Sydney, Australia. As the hub of network operations in the region, the Sydney center serves major clients, including Macquarie Corporate Telecommunications.

Contracting with Lucent for network services also can move customers into new markets at warp speed. Jato Communications, a fast-growing, high-speed Internet access and applications company in the United States, turned to Lucent's NPS for installation, network monitoring and evaluation to help launch broadband DSL services across the United States.

Time to market also is an imperative in Europe, as QS Communications AG (QSC) in Germany will attest. Lucent designed and built a Germanywide DSL network based on its Stinger platform, as NPS covered all network planning, installation, management and operations.

Lucent NPS specialists staff the Cologne-based network

operations center, providing 24-hour, seven-day network management and operation for QSC. This gives QSC the freedom to focus on its own business, with the security of knowing its network is "always on."

Beyond soup-to-nuts services, customers have the option of using Lucent's specialized software to monitor networks on their own. NPS *VitalSuite* is a family of network management software products that gives engineers, executives and end users the ability to see how any aspect of their information technology infrastructure is performing through an easy-to-use Web interface (See related story above).

The Knowledge Behind the Network

Regardless of the tools, Drew believes that it's the people and what they know that make NPS stand out in network services, which is why NPS represents itself as, "The

Knowledge Behind the Network."

"Our biggest resource is knowledge," said Drew. "What Lucent's NPS brings is a collective knowledge that is unprecedented in the industry."

And it's a mantra at NPS as it gets closer to Lucent sales teams to support the company's move into solutions-based selling. That collaboration also feeds into the product houses, where NPS teams support product rollouts and contribute to the solutions being offered to customers.

"To exploit the capabilities of our engineers—who are steeped in data, voice and software expertise—we are aligning ourselves with the product and sales teams

Engineers Alan Shipley (from left), Riz Bucio and John Greenwood are talking technology at the new Asia/Pacific *NetworkCare* Knowledge Center in Sydney, Australia, the hub of network operations in the region.

at the start of projects requiring large systems integration," said David Butze, vice president of Field Operations for NPS. "That's an advantage no one else has."

A previous INS operating principle, which held that sales consultants don't sell anything without engineering approval, influenced that alignment. Butze believes this builds a great collaborative model for selling solutions, rather than stand-alone services or boxes. It's also an imperative for shortening product introduction cycles and getting technologies into the marketplace in high volume, where both systems integration and engineering teams are required.

To keep NPS engineers in top form takes a knowledge machine. So NPS taps into an e-mail-based system called "KnowledgeNet"—a virtual thinktank for 3,000 engineers to swap ideas and best practices, and solve networking problems in real time.

If engineers are configuring

a customer's network and come across an unfamiliar network problem, they can use KnowledgeNet to broadcast an e-mail message to the NPS engineering community. Colleagues who have shared similar experiences can respond to the question then and there—offering solutions or pointers to files or Web sites with more information. A summary of the discussion with end results is then documented and archived for future reference. In fact, more than 11,000 networking solutions are documented in KnowledgeNet, making it the largest collection of network knowledge in the world.

"It's a free-flowing exchange of ideas that lets engineers collaborate in communities of interest. The premise that engineers share information to rapidly understand technology and to make us the best in the world is our secret sauce," said Butze.

In addition, NPS offers its KnowledgeQuest Training Program,

an informal university with more than 500 courses designed by NPS engineers to keep technical skills at their peak.

With practical training as part of the mix, NPS also encourages engineers to "float" by taking rotational assignments outside of their technology area and working with developers on product introductions.

Having a knowledge machine is just another differentiator for NPS and part of Drew's ongoing mission to attract and retain excellent people. "Our philosophy boils down to being the best at what we do, combining superior service with technology," said Drew. "No one else has that focus." ○

—Loren Talley

NPS at a Glance

What We Do

Lucent's *NetworkCare Professional Services (NPS)* is the world's leading network consulting and network services provider, helping service providers and enterprise companies succeed in a networked world. Visit www.lucent.com/networkcare.

Employees There are more than 5,500 worldwide, including consultants, engineers and technicians located in more than 40 countries.

Services Provided NPS covers all aspects of the network life cycle, helping clients plan, design, implement and operate their complex networks. Services range from business consulting to network engineering; remote and Web-based technical support; network management and end-user support. NPS also offers market-leading software through its *VitalSuite* performance monitoring tools.

Global Reach As the largest provider of professional services for multivendor networks, NPS has 26 *NetworkCare* Knowledge Centers around the globe, and serves several international markets and companies. Additionally, NPS has relationships with *VitalSuite* software resellers on all six continents.

Major Markets NPS provides its specialized services and software to service providers and enterprise customers—including those in financial services, health care, higher education, high technology, manufacturing, media and government.

—Loren Talley



BUILDING A

21st Century China



ADRIAN BRADSHAW

The sun rises, and soon the massive construction cranes that seem to loom around every city corner are adding floor upon floor to skyscrapers that cast their long shadows across the already teeming streets and bustling markets.

A new day is dawning in China.

In the country that is home to one-fifth of the world's population, a seemingly limitless future is being constructed, almost from the ground up. And Lucent is there to be an integral part of the earth-shaking success story that is unfolding.

"Two-thirds of our growth opportunity lies outside the United States," said Lucent Chairman and CEO Rich McGinn. "Lucent's success depends on our ability to lead in the global markets offering the greatest opportunities for long-term growth. Clearly, China is a critical piece of that strategy and our global vision.

"We've signed contracts for well over a quarter-billion dollars there in the past six months, and we've dedicated the resources and the people needed to keep winning."

A Massive Market

With a population of 1.2 billion and teledensity of about 10 percent, there is enormous room for telecommunications growth in China. In fact, China plans to invest about U.S.\$60 billion over the next five years in telecommunications equipment. It is anticipated that, by 2010, China will account for 20 percent of the global

communications systems market.

The future will be especially bright if the United States and China establish permanent normal trade relations when China enters the World Trade Organization (WTO). Once China is a member of the WTO, Chinese tariffs on imports will be reduced, and a number of regulations on foreign businesses will be eliminated.

"Fully integrating China in the global economy through permanent normal trade relations with the United States and membership in the WTO is important for Lucent and for China," said McGinn. "For Lucent, it will mean increased demand in a colossal market for the next-generation products built by Lucent people in the United States and China.

"Of broader significance, it will allow the global community and China to learn from each other how best to use the free market to improve the lives of all people while

reaping the economic and social promise of the future's fully networked world."

A Winning Spree

Lucent China's recent multi-million dollar winning spree

began in November 1999 and includes more than a dozen contracts that, together, underscore Lucent's ability to offer a complete range of solutions in optical, data, wireless and cable—the hottest areas of the world's hottest industry.

"We've started the new millennium on a very high note," said Mike Chan, chairman and president of Lucent China. "With these contract wins, we're building strong partnerships with our customers by delivering innovative solutions and further demonstrating our commitment to the Chinese market."

The largest contract is an U.S.\$80 million deal with China International Trust and Investment Corp. (CITIC) Pacific Ltd., through which Lucent will supply *WaveStar* optical and network management solutions for CITIC's nationwide network

project, an optical backbone 32,000 kilometers (20,000 miles) long.

As part of another expansive agreement—this one with Guang-dong Eastern FiberNet Co. (GEFC), the Guangdong province's newest service provider—Network Products Group will provide U.S.\$50 million of *TrueWave* fiber cable, the largest cable deal awarded in China.

Lucent will provide both CITIC and GEFC with *WaveStar* OLS 400G—an 80-channel dense wavelength division multiplexing system—and *WaveStar* TDM 10G—a synchronous digital hierarchy

(SDH) system capable of transmitting 10 billion bits of information a second across a single wavelength.

"Thanks to loyal customers who trust us as a high-quality partner," said Chan, "we've become the leader in China's optical networking and fiber cable industries."

Wireless Wins

Optical and cable aren't the only areas in which recent successes have been won.

Late last year, five leading Chinese telecommunications companies—including Beijing Telecommunications—getting into the

Beijing Center Bolsters Bell Labs' Basic Research

Bell Labs recently opened its first basic research laboratory outside the United States in Beijing. The new China facility will help Lucent stay ahead of the technology curve and better support customers in Asia/Pacific and around the globe.

"This facility will offer Bell Labs and leading scientists in China the opportunity to learn from each other and advance China's expanding telecommunications industry," said Bell Labs President Arun Netravali.

The new research facility is the latest in a series of steps demonstrating Lucent's strong commitment to China. Bell Labs had previously established branch facilities in Beijing and Shanghai focused on advanced technology and product development, and operates labs in partnership with Peking University and Shanghai Jiao Tong University.

"Our goal is to establish a network throughout the region, with the United States as the hub, where we have different locations stressing certain technology capabilities," said J. Carl Hsu, president of Bell Labs for Asia/Pacific and China. "The challenge is to leverage the strength of each, so we can better serve a particular local market. This new facility will help us reduce time to market and total costs in the region. Basic research is an important investment that allows us to focus on technologies or products that are more long range, and have the potential to change how communications takes place."

David Lee, who formerly served as head of Bell Labs' Networking Research Department, is director of the new research lab.

"The initial concentration in our new research lab will be on networking and software," said Lee, who recently completed a recruiting trip to staff the facility and has relocated to China with his family. "I made 12 offers to graduates from the top universities and 11 accepted," he said. "Our ongoing relationships with the schools and the Bell Labs reputation are enabling us to attract top talent."

Since Lucent's launch, Bell Labs has created a dozen new development labs—in Australia, Canada, Indonesia, India, Japan, China, Germany, France and the Netherlands, in addition to the Beijing facility. It's all part of bringing research and development—staffed with local talent—closer to the customer.

—Stephen J. Hudik

Helping lead Lucent China are (women, from left) Ivy Feng, Judy Zhu and Ning Ding and (men, from left) John He, Zhao Li, He Yuwei, Ma Zhigang, Steve Hsueh, Guo Hui and D.Q. Li, all of whom gathered at Beijing's Temple of Heaven.



Carl Hsu
president, Bell Labs
Asia/Pacific and China

manufacture of cellular phones selected the Microelectronics Group's specially tailored global system for mobile communications (GSM) cell-phone technology

Beijing Telecommunications Administration (BTA) to work on its Year 2000 Network Expansion Project—expected to double the capacity of

of 10G technology in China.

"We've worked hard to establish our brand and our reputation here, and that hard work is paying dividends," said Chan.

"Our relationship with BTA is indicative of our presence and standing in China. We've enjoyed broad cooperation with them since 1994, when we were the first to introduce SDH technology in China."

"Lucent's success depends on our ability to lead in the global markets offering the greatest opportunities for long-term growth."

Rich McGinn • chairman and CEO

platform to help them mass produce phones quickly.

More recently, Lucent's strength in wireless technology was showcased by a contract to supply 300 base stations, 10 sets of base station control systems and related switching systems for China Unicom Lianong's GSM Expansion Project. It's Lucent's first GSM network contract in China.

"Lucent is now in the leading position in wireless technology," said Gerry Butters, Lucent's chief strategist. "And we're actively seeking cooperation with China's Ministry of Information Industry in the field of 3G development, where China is making great contributions."

Lucent has won three other contracts with China Unicom, China's second largest service provider. Through one of the largest, Lucent will supply asynchronous transfer mode (ATM) and Internet protocol (IP) solutions and fiber cable for a broadband, multiservice national backbone network that will cover up to 100 cities and likely be China's leading integrated data/voice network for the next generation.

Another contract is for work on Phase II of Unicom's Toll Network Backbone Project, and the fourth deal will allow Lucent to enhance the data transmission capabilities for an existing 19-city SDH network.

Two Firsts and More

Lucent China scored another major win when Guangzhou Post and Telecom Bureau of China Telecom, China's largest service provider, became the first carrier to purchase a 7R/E solution. Another first will come from Lucent's deal with the

BTA's network. Lucent will supply its cutting-edge optical solutions, including WaveStar TDM 10G, the first deployment

Other contracts won recently by Lucent China include deals with:

- ◆ China's State Administration of Radio, Film and Television

Normalizing Trade with China

The year of the dragon may be an auspicious one for China, particularly if, as expected, its application to join the World Trade Organization (WTO) is approved. The WTO's objective is to help trade flow smoothly, freely, fairly and predictably among its 136 member nations. It administers trade agreements, acts as a forum for trade negotiations, and settles trade disputes.

China's application to join this international trade body was stalled for more than a decade because the country would not agree to market-opening economic reforms that meet the criteria for membership.

Now, however, it has consented to those reforms, and will likely be admitted to the WTO later this year. As a prelude, China concluded a far-reaching bilateral market access agreement with the United States in November 1999, and has concluded similar agreements with more than 30 other WTO member countries. Once China's accession is complete, its current protectionist barriers are expected to come down, and the benefits of membership in terms of a reinvigorated economy should quickly follow. Some forecast a doubling of China's exports by 2005, an extra percentage point of economic growth each year for the next decade, a doubling of foreign direct investment in the next five years, and a halving of the unemployment rate.

What will the rest of the world gain? A chance to do business in China with far fewer restrictions. Tariffs will go down. Multinationals operating inside its borders will be able to import and sell a full range of products—not just those manufactured in China by joint ventures. Import quotas on information technology products will be eliminated. Telecom services markets will be opened, including access to incumbents' networks.

But in a complex relationship such as that between the United States and China, there are many non-trade issues to be addressed. Some people are concerned about China's human rights record. Others worry about the effects of trade liberalization on the U.S. economy. These issues will be debated soon in the U.S. Congress, where a vote is expected on granting China permanent normal trade relations (PNTR).

Extending PNTR is critical for the United States, since WTO members must "grant each other any advantage, favor, privilege or immunity provided to other countries immediately and unconditionally." If Congress does not approve PNTR for China—a status accorded to every other WTO member—then China does not have to extend its market-opening economic reforms to the United States, and we lose the benefits negotiated in the November agreement. In that case, competitors around the world could rush to secure a foothold in the Chinese market, locking out U.S. companies.

"Integrating China into the global economy through permanent normal trade relations with the United States and membership in the WTO is important for Lucent," said Chairman and CEO Rich McGinn. "We'll have the opportunity to participate fully, without restrictive trade barriers, in the world's largest market."

—Suzanne Sidhu

Lucent Readies for Rapid Growth in China

Each day seems to bring startling new evidence of China's insatiable hunger for the things that make communications work, but one fact remains constant: The market potential there is as vast as China's population, long history and nearly endless landscape.

Which means that Lucent China's presence must be great. And it is, with seven regional offices and 3,500 employees, more than 95 percent of them Chinese nationals.

The number of employees is expected to grow significantly this year. The Optical Networking Group is expanding its research and development operations in Beijing, Shanghai and Shenzhen; the Microelectronics Group recently opened a new center of excellence in Bell Labs' Shanghai facilities; Network Products Group will expand its facilities in China to more than double its fiber and cable production there; and Bell Labs opened its newest research and development facility in Beijing (see related story, page 11) in March.

There are eight Lucent joint ventures in China, manufacturing fiber optics, optical networking equipment, fiber cable, digital access equipment, communications software and switchboard cable. In fact, Lucent Technologies Qingdao Telecommunications Equipment Co. Ltd. is Lucent's largest switch manufacturing center outside the United States.

Lucent Qingdao also manufactures global system for mobile (GSM) communications wireless products. And Lucent China is in the final stage of obtaining Chinese government approval to manufacture code division multiple access (CDMA) products through a joint venture.

There also are three wholly owned Lucent companies in China:

- ◆ Lucent Technologies Qingdao Power Systems Co. Ltd., making power systems components.
- ◆ Lucent Technologies Shanghai International Enterprises Co., Ltd., a trading agent.

- ◆ Lucent Technologies (Shenzhen) Co. Ltd., an optical networking R&D company.

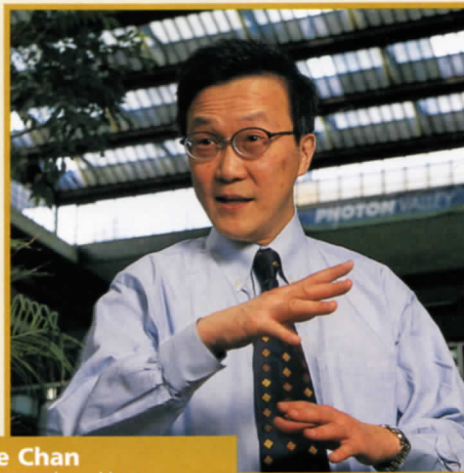
Huge Potential, Great Results

China's communications infrastructure is growing annually by about 20 million lines — roughly equal to adding a new U.S.-sized regional Bell operating company — every year. About 1 million new mobile phone users are being added each month.

For 2000, Lucent China estimates its total addressable market to be more than US\$11.8 billion, including \$5.5 billion in wireless, \$1.5 billion in switching, \$900 million in optical, \$336 million in data networking and \$750 million in professional services.

Small wonder that the growth target for Lucent China in 2000 is more than double its fiscal 1999 growth of 56 percent, a figure that was nearly three times that of Lucent's overall growth last year.

"We're growing by delivering innovative solutions to our customers as we build stronger and stronger partnerships with them," said Mike Chan, chairman and president



Mike Chan
chairman and president,
Lucent China

of Lucent China. "These solutions involve a wide array of products — optical gear, asynchronous transfer mode, frame relay, *SESS* switching, digital video, *7R/E*, wireless gear and more."

China's entry into the World Trade Organization, and passage of U.S. congressional legislation permanently normalizing trade relations between the United States and China, will offer even greater business opportunities there. And Lucent China — with its large presence and growing reputation for customer service, Bell Labs' innovation, and a profound knowledge and understanding of Chinese market needs and culture — is especially well-positioned to make the most of those opportunities.

In short, the excited hum of commerce that is growing in China may turn into a roar heard around the world on the 21st century networks and services Lucent will provide.

—David Fine

to provide SDH and Digital Video System equipment for the first phase of the administration's Backbone Network Project.

- ◆ China Network Communications (CNC) for optical networking and cable equipment to help CNC build its first backbone network.
- ◆ Yunnan Telecom for Lucent's market-leading GX 550 smart

core ATM switches that will enable enterprises to have e-commerce applications, commercial IP services, virtual private networks, voice over IP, frame relay and ATM services.

- ◆ Cable & Wireless HKT for Lucent's Orinoco home networking product RG 1000; it will allow the Hong Kong carrier to offer wireless Inter-

net access services to residential and small office customers.

"We've got a great Lucent China team and the innovative, end-to-end networking solutions China needs to take complete advantage of the telecommunications revolution," said McGinn. "That's proving to be an unbeatable combination." ○

—David Fine

Lucent Honors Its

Environmental, Health & Safety Heroes

Q What does a three-year record of zero lost workday cases in Shanghai, China, have in common with an environmental education program for visually impaired children in Oklahoma?

A They're both outstanding examples of projects in which Lucent employees are successfully addressing environmental, health and safety issues at work and in their communities. And they're part of a larger group of 24 projects that earned Lucent Environmental, Health and Safety (EH&S) Heroes Awards this year.

"The Heroes Award Program has been very successful in raising employee awareness of the benefits of being involved with sound environmental, health and safety programs," said John Pittman, vice president, chief quality, environment, health and safety officer. "This not only benefits the immediate location or community where the programs are found, but it also proves to be a business advantage for Lucent."



Program Effectiveness

★ **A Safety Success** This new safety program was created to eliminate accidents at the Lucent facility in Matamoros, Mexico. Its success rate is remarkable: Accidents decreased from .51 to .06 for every 100 employees; 2,450 employees were recognized for having no accidents in 1999. Mexican officials declared the facility a safe workplace.

★ **Less Waste, More Savings** A separate effort at the Matamoros facility optimized the space available for waste management and implemented a "just-in-time" collection schedule that reduces disposal costs, identifies specific waste recycling vendors, and increases the amount of recycled waste instead of landfill. The reclamation of solid and hazardous waste will save more than \$80,000 a year.

★ **Let the Sunshine In** In Santa Lucia, Venezuela, the near-equator sunlight is now being used to improve visibility and reduce overall energy consumption at Lucent. Installation of

1999 EH&S Heroes Award Winners **PROGRAM EFFECTIVENESS:** **A Safety Success** — Angeles Montantes, Norma Gutierrez, Marco Valdez, Silvestre Arellano, Sonia Arrazolo • **Less Waste, More Savings** — Efrain Alvarado, Luis Mejia, Zohe Rodriguez, Marco Valdez, Silvestre Arellano, Efrain Alvarado • **Let the Sunshine In** — Jordi Morellon, Jose Felix Azocar, Manuel Tovar, Arturo Sosa • **Water, Water Everywhere** — Michael Kaszyski, Steve Silic, Ken Fulford, Joe Fruhman, Dave Sodl, Ilse Stoll, Byron Davis, Joe Laudemberger, Deb Wenger, David Dickinson • **The Air We Breathe** — Lisa Green, Sharad Shah, Sherrie Walker, John Harrison, Elwood Anderson, Terry Tincer • **Savings in Thailand** — Pisith Bhuthathorn, Sucheep Kantanon, Sutee Testosaporn, Suphot Meesawad, Komol Cherdpanich, Bandit Boontham • **See the Light** — John Serrone • **Safety and Savings** — Zhang Jian Rong, Liang Jun, Feng Li, Li Fuyu, Li Wei, Lu Shuyi, Yu Huixin,



Exploring the natural wonder of a spider web along the Braille Trail, an environmental learning experience for visually impaired children at the Oklahoma City Camp Fire Boys and Girls Club, are Blake Adams (front left), Camp Counselor Shannon Finley, and Megan McKinsey. Looking on are Oklahoma City Pioneers President Rodney Cross and Judy Seikel, Lucent Human Resources manager.

novel translucent roof sheets improves floor luminosity by 50 percent, saves 20 megawatt hours each month in energy, cuts expenses more than \$15,000 a year and reduces the total emission of greenhouse gases to the environment.

★ **Water, Water Everywhere**

The semiconductor facility in Allentown, Pa., is the Microelectronics Group's largest water user. Lucent heroes there implemented high-tech purification and recycling processes that reduce water use by more than 1.7 million gallons a day and eliminate the discharge of 13,000 pounds a day of total dissolved solids to the Lehigh River. New processes also help deliver ultrapure water to the facility's

clean rooms, critical to the production of integrated circuits.

★ **The Air We Breathe** A new air emission system at the Atlanta Works replaced more than 140 individual, high-maintenance scrubbers, improving air quality and recovering additional material for recycling. The system eliminates downtime from scrubber maintenance, improves the hygiene of the clean room, and provides a 99.9 percent submicron particle reduction with an annual cost saving of about \$2 million.

★ **Savings in Thailand** For five years, facilities managers at the Microelectronics plant in Thailand have succeeded in increasingly conserving water

and energy. The team has redirected, recycled and limited the overflow of wastewater, and now uses flow meters to monitor water waste and regulate fan speeds to enhance cooling and optimize water tower capacity. Total cost saving: \$75,000 per month.

★ **See the Light** Microelectronics' John Serrone brightened his team's office workspace in Berkeley Heights, N.J., with new light diffusers, timers and motion sensors. The results have been a safer workspace, fewer ergonomic problems, lower energy consumption and a lot of cheerier people. The building's owners liked Serrone's approach so much they incorporated his design philosophy into the rest of the building.

Wu Huifang, Yu Jinxiang, Yu Ling, Zhang Weilin, Zhou Fan **MANAGEMENT PRACTICES: Changing Attitudes** — Elena Nikolaevna Zabavnova, Tatjana Gromova, Elena Ilioukova, Leonid Kravchenko, Natalya Koriakovtseva • **Freeing Up Time** — Chen Chung Wu, Meei Tseng, Scocher Wei, Steven Huang, Dennis Tan • **An ISO First** — Mark Jacobs, Jose Alvarez, Irwin Asher, Ed Barabas, Larry Bernson, Terri Boehm, Robert Caporaso, John Clai, Rich Clauss, Phil Costello, Warren Davis, David Dickinson, Ray Dinsmore, Gary Fisher, Linda Floyd, John Galasso, Thomas Giacco, Jim Giordano, Mike Glowatz, Ed Goldston, Bill Havel, Scott Houthuysen, Anna Jackson, Rose Knox, Eric Kutter, Chris Lombardo, Diane Ludewig, Pamela Kay Lyles, Bob Markow, Dane Martindell, Dave McCleary, Dennis Mog, Alex Moore-Staub, John Mosovsky, Ed Nowak, Tom Okrasinski, Angela Pascucci, Ron Pluto, Bill Schaeffer, Bill Schleck, John Signorello, Ralph Taylor-Smith, Ron Stow, Jorge Valdes • **Breaking New Ground** —

★ **Safety and Savings** The Lucent Shanghai fiber-optics facility has had a perfect safety record—no lost workday cases—for the past three years. In addition, energy conservation has cut costs by more than \$130,000 a year. The project team instilled a strong

structure for hazardous waste disposal, the team addressed disposal issues relating to mercury relays and batteries.

★ **Freeing Up Time** A team of employees from Switching Solutions Group and EH&S in

joined together to implement the first EH&S management system to receive ISO14001 (global environmental standard) certification for a stand-alone R&D organization in the United States. During 1999, 30 environmental objectives were accomplished, resulting in \$875,000 in total cost avoidance.

★ **Breaking New Ground** A team from Lucent in Brunei overcame start-up challenges to implement a fully integrated Quality, Environmental, Health and Safety (QEHS) management system. In just eight months, the program received third-party integrated QEHS certification in ISO9002 (quality standard), ISO14001 and OHSAS18001 (health and safety standard).

★ **More Training, Less Problems**

In Tianjin, China, a team of employees implemented a ISO14001 and OHSAS18001 management program that not only boosted the company's image in the locale, but also improved employees' attitudes and increased participation in EH&S training opportunities. The program helped reduce from 21 to seven the number of non-conformance items in the corporate compliance audit.

★ **A Star is Born** The Lisle/Naperville Voluntary Protection Program (VPP) went above and beyond the OSHA compliance standards and received "star" status—the highest level of recognition—for its efforts. The VPP team implemented self-inspection, accident investigation and safety recognition programs, and focused on increasing employee awareness and involvement in safety activities.

Taiwan collaborated on developing a database system that ensures EH&S data is current and electronically available. Since the database system is integrated with other information technology systems, it also becomes critical to the business decision-making process. The system has reduced overall paper consumption and saved more than 250 administrative hours in the first year.

★ **An ISO First** A team composed of Bell Labs, EH&S, Real Estate, Advanced Technologies and Microelectronics employees

EH&S consciousness throughout the plant by providing training and considering EH&S objectives as part of the annual employee appraisal process.

Management Practices

★ **Changing Attitudes** In just 10 months, a team from Lucent's Global Provisioning Center in St. Petersburg, Russia, effectively implemented a complete EH&S management system both during the start-up and in the operation of its new facility. Despite the lack of a local infra-

Jiang Wei Jun (center), deputy general manager, and Liang Jun (right), an EH&S engineer, emphasize environmental awareness, health and safety at the Lucent Shanghai fiber optics facility. There have been zero lost workday cases at the facility over the past three years.

Chen Chung Yee, Rodney Tang Chin Leong, Tommy Chin Tin Lung, Shim Kim Eng, Lu Bee Li, Laura Wong Sing Chai, Irene Teo Bee Cheng, Azlina Bte Ahmad, Omar bin Hj Alitdin, Omar Khayyam Ansari • **More Training, Less Problems** — Zhou Qing Bo, Pei Fucai, Liu Jia, Yao Yanping, Li Li, Wang Tiecheng, Wang Huilai, Guo Yongshan, Zhang Ying, Hu Fengming, Ze, Liu Jinmei, Wang Ying, Wang Baoqio, Zhang Fengyu, Yang Wensheng, Hu Peiwen, Ma Xijie, Gong Weidong, Lin Yue, Yan Zhanying, Ning Peiying, Su Quingdong • **A Star is Born** — Steve Eagels, Barry Jaeger, Beth Johnson, Bill Jacobson, Carolyn Rock, Debra Dittmer, Dianne Mikrut, Fran Fitzhenry, Heidi Castelluccio, John Clai, John Lukasik, Lou Gagliano, Marilyn Mason, Mike Tang, Red Korn, Richard Babic, Rick Coleman, Robert Harringer, Roger Henry, Ron Zarn, Rosa Banks, SamHarrold, Sam Richmond, Tony Tuttle **PLANNING FOR THE FUTURE: We're Here to Help** — Barry Dambach, Iris van de Graaf, Arjen Saleminck,

Planning for the Future

★ **We're Here to Help** Helping Lucent business units to meet customer and legal requirements and sell their products globally, the Design for Environment (DFE) core team provided support to implement DFE programs within product design, quality management and environmental management systems and processes. One example: The Wireless Group developed a product with a 75 percent reduction in packaging weight, a 33 percent cut in energy consumption, an 85 percent drop in lead use and a reduction of 2.5 tons a year in manufacturing waste.

★ **Lightening the Load** Terry Rankle introduced a new type of shipping container at the Merri-mack Valley Product and Export Center that replaces standard equipment on heavy wooden pallets. The new lightweight plastic design reduces the pallets from 65 pounds to 19 pounds and allows workers to load the containers through different access areas. The new design also was introduced at the Kansas City Global Provisioning Center and can be used at most of Lucent's facilities to pack and ship a variety of product lines.

★ **Peer Pressure** The use of simple tools and a peer-to-peer approach to change work habits proved highly effective for the ergonomics team in Little Rock, Ark. Composed mostly of general operators, the team used risk reduction training and self-evaluation to address the issue of cumulative trauma and musculoskeletal disorder injuries. So far, the results have exceeded the goals as nearly 80 percent of the high-risk factors have been eliminated, saving \$62,000 in workers compensation and 2,000 production hours.

★ **On-Site Savings** The Site Material Simplification and Standardization team in Hsinchu, Taiwan, identified areas of installation waste materials and introduced a development engineering handbook to guide new engineering rules. The project reduced the use and subsequent waste of material by more than 30 percent and cut expenses by more than \$1 million from 1998 to 1999.

Social Responsibility

★ **Stopping the Violence** Vickie Jackson, an account executive in Miami, Fla., and her family founded the Domestic Violence Education and Prevention Project (DVEPP). The nonprofit organization educates individuals, social, civic and religious groups and businesses on domestic violence and how to prevent it. Over the past six years, DVEPP has informed thousands and has helped save countless lives.

★ **The Greening of Blue** A team of concerned employees at the Microelectronics facility in Reading, Pa., partnered with local authorities to promote resource conservation and environmental remediation at the Blue Marsh Lake, a source of drinking water and recreational facility for 1.2 million visitors a year. As a result, Berks County received \$21 million to address water quality issues at the lake and various environmental projects in the area.

★ **Rocky Mountain High** As a member of the James P. Beckworth Mountain Club in Denver, Hilliard Moore helped form the club's Outdoor Education Center for inner-city youth environmental education. The center increases the aware-

ness of minority youth of the need to preserve, enhance and manage the wilderness environment and urban ecosystem and their own communities.

★ **Living in Harmony** Branchburg, N.J., is rapidly changing from a rural to a suburban community. The Branchburg Environmental Commission, headed by Tom Okrasinski, put in place a plan to integrate environmental concerns within the community's lifestyle functions. The project included watershed improvements, open space acquisition, a contamination assessment program, critical area development restrictions and environmental education.

★ **Cleaning Up the Past** The EH&S team in Bydgoszcz, Poland, designed a comprehensive remediation strategy that prevented the spread of and eventually eliminated soil and groundwater contamination caused by a previous owner of the facility. The strategy's success was confirmed when it received the highest score at the region's EH&S conference ratings and \$20 million in tax credits for Lucent.

★ **The Braille Trail** A group of employees at the Oklahoma City facility helped support the creation of the Braille Trail project at the local Camp Fire Boys and Girls Camp. The trail provides an environmental learning experience for visually impaired children to enjoy the outdoors by guiding them through stations along a nature path with tape players and headsets. The Braille Trail is a teaching tool for both the visually impaired and an awareness tool for sighted individuals to experience the daily challenges faced by others. ○

—Pete Busichio

Henk Groeneboer, David Dickinson, Ethel Hopkins, Werner Glantschnig, John Mosovsky, Menno Nagel • **Lightening the Load** — Terry Rankle • **Peer Pressure** — Cathy Webb, Carole Ahart, Cherry Beets, Estella Brown, Shirley Carlisle, Morris Chin, Rita Curlie, Keith Hall, Jayne James, Bob Lloyd, Donna Mattingly, Tona Nordengren, Sharon Pittman, Denard Stewart, Denise Thomson • **On-site Savings** — Rickey Kang, Dennis Yang, Tom Chen, Rohani Wang, Patrick Chen, K.T. Yeh, Neicar Chang, F.C. Hsu, Mano Lo • **SOCIAL RESPONSIBILITY: Stopping the Violence** — Vickie Jackson • **The Greening of Blue** — Nancy Sharp, Chuck Russo, Bill Hess, Kevin Gratz, Chris Stewart, Jack Molets, Rachel Roland, Dave Baldinger, Sr. • **Rocky Mountain High** — Hilliard Moore • **Living in Harmony** — Thomas Okrasinski • **Cleaning Up the Past** — Nicholas Capuano, Pawel Knecht, Jan Kwiatkowski, Robert Nolan, Jan Wilma, Tomasz Kiec, Jerzy Szarafinski • **The Braille Trail** — Judy Seikel, Rodney Cross, Margie Storey

What can Lucent do to strengthen its global competitiveness?

D. CHAMBERLIN



We need to move from being market-driven to a market-driving company. Lucent can differentiate itself through service. We need to exceed what we promise customers by cooperating internationally and across organizational lines. Teaming up with our colleagues on specific projects has to be done quickly. In this Internet era, opportunities are won or lost minute by minute, globally.

Anna Dora

services sales support manager, NetworkCare Network Services, Service Provider Networks, Warsaw, Poland

LARRY EVANS



You've heard the saying: location, location, location. For accelerated growth, Lucent's spin on it should be: research, research, research. We need to create a research team that will develop us into a global competitive unit unique to Lucent and its customers. As a communications leader, Lucent can learn from companies that have a long-term global success story.

Tim Howard

expediter, NetworkCare Network Services, Service Provider Networks, Downers Grove, Ill.

RICK FRIEDMAN



In this fast-paced industry, which focuses on product cycles, continuous innovation and competition, customer relationship management is essential. For Lucent to strengthen its global competitiveness and growth, we need to make it a priority to identify, attract and retain valuable customers.

Miriam Flores-Leon

material management analyst, Optical Networking Group, Service Provider Networks, North Andover, Mass.

DAVID LEVENSOM



We have to become market leaders in third-generation wireless and hyper-local area networks, and embrace the concept of seamless services. Lucent needs to focus on speed to market backed by good business applications. For this to happen, we need to have a strong local presence in key countries.

John Frieslaar

senior manager, Sales Support and Contract, Service Provider Networks, Swindon, England

R. OBERHAUSER



Lucent's goal should be to find the right mix of delivering the best quality in a cost-effective, innovative, speedy and customer-focused way, while focusing on the most important factor for being globally competitive: teamwork.

Elke Diederich

sales assistant, Customer Focus Team, Service Provider Networks, Bonn, Germany

DENNIS CHAMBERLIN



In Europe, Lucent is often perceived as U.S.-centric. It's important that we change this mindset by continuing to deliver our solutions for international customers with the same speed and quality as we do U.S. customers. If we recognize the synergy with our international teams through languages, cultures and backgrounds, then Lucent will truly be a global company.

Darek Bakula

manager, Product Marketing, Switching Solutions Group, Service Provider Networks, Warsaw, Poland

USA QUINONES



Lucent will enjoy greater competitive advantage if it not only builds great technology, but also makes the technology usable. This means that our products should be easy to learn, efficient to use, consistent and robust to errors. By doing this, we will increase customer satisfaction and loyalty, and reduce support costs.

Cindy Lu

member of technical staff, Communications Software Group, Service Provider Networks, Warren, N.J.



Lucent needs to expand the good working relationships instilled in local teams to the global account teams. The world is now a big village, and we in Lucent are villagers working an e-mail or phone call away. The better we work together, the more satisfied our customers will be.

Ricardo Lanfranco

general manager, Lucent Technologies del Peru, Service Provider Networks, Lima, Peru

