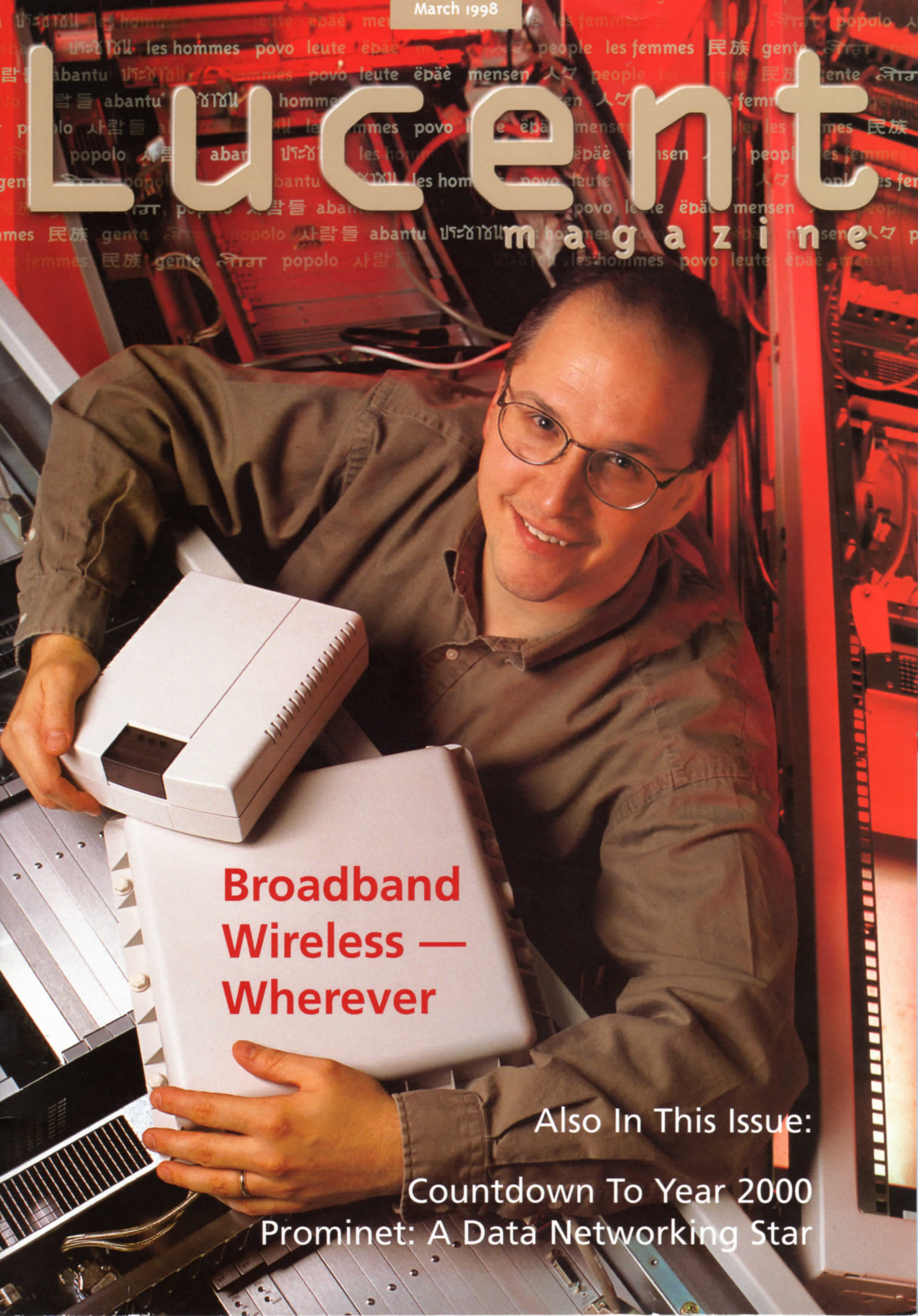


March 1998



# Lucent

magazine

**Broadband  
Wireless —  
Wherever**

Also In This Issue:

Countdown To Year 2000

Prominet: A Data Networking Star

### 'Silent Majority'

This issue (January/February) is super. It prompts the "silent majority" to respond. For a four-year retired employee, your new org. chart and business group profiles played an important part in understanding the new Lucent.

GEORGE SLAZYK  
Graham, N.C.

### Customer Connection

Lucent Magazine is very informative. I share it with my prominent customers in New Delhi.

RAJESH SINHA  
New Delhi, India

### Making a Difference

I enjoyed the back cover of the December 1997 issue ("How I Contribute to Lucent's Success in Data Networking"). Everyone I work with knows the difference each of us can make. It's nice to hear that other people around the world feel the same way.

BARB ZIGTERMAN  
Naperville, Ill.

### Write to Us

Please share your opinions about Lucent Magazine with us by sending letters to:  
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### Lucent Magazine Available on Tape

Lucent Magazine is available to visually impaired employees on a two-track cassette tape. If you wish to receive a tape, call 908-582-5075. Leave your name, address and telephone number.



### What Employees Need to Know

The operating unit profiles on Lucent's new businesses in the January/February 1998 issue are very informative. This is the kind of information employees need to know.

MARGARET PRYMUSZEWSKI  
Winston Salem, N.C.

### A Big Hit

Love that org. chart. Great! Keep an update posted this way.

MONTE RATHBUN  
Englewood, Co.



### The Pulse of Lucent

I have shared numerous articles with my entire management leadership team from the November 1997 and December 1997 issues. It is clear that the staff of Lucent Magazine has its finger on the pulse of Lucent. Their ability to articulate our vision and incorporate it into passionate and exciting language is exemplary. The November cover story on Lucent GROWS should be a new industry benchmark in strategic marketing literature.

MICHAEL SISTO  
Lisle, Ill.

### No More Happy News

Ever since the decision was made to sell the Huizen, The Netherlands, factory, I don't like to read happy Lucent news. The information in this magazine does not reflect real life.

OEDS KAMSTRA  
Huizen, Netherlands

### 18-Month Product Cycles

To achieve success in data networking, Lucent should get accustomed to 18-month product cycles and Moore's Law — the performance of silicon will double every 18 months with proportional decreases in cost.

GANESAN KRISHNAMURTHY  
Columbus, Ohio

### Let's Hear From Customers

I recently joined Lucent and find the magazine very interesting and unique. I like articles about customers the best because they are what matter. It would be nice to print letters from customers so employees can see what they really think of us. Customers are the key to our success.

EDWARD CRUZ  
Naperville, Ill.



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March 1998  
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S T O R Y

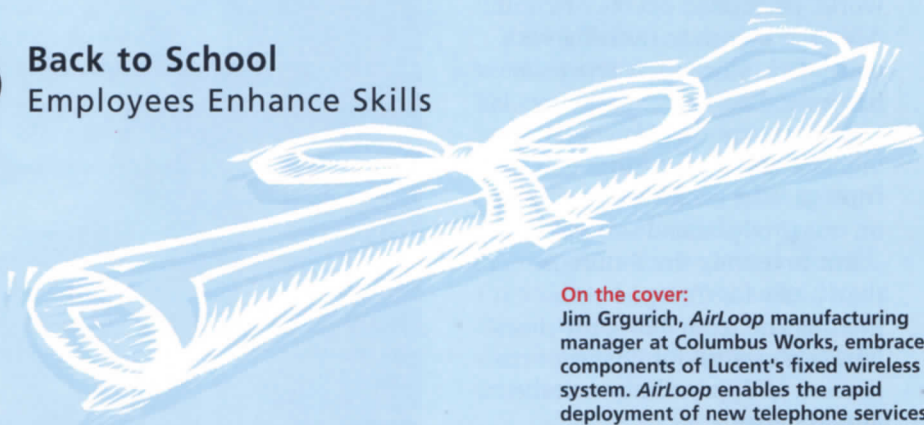
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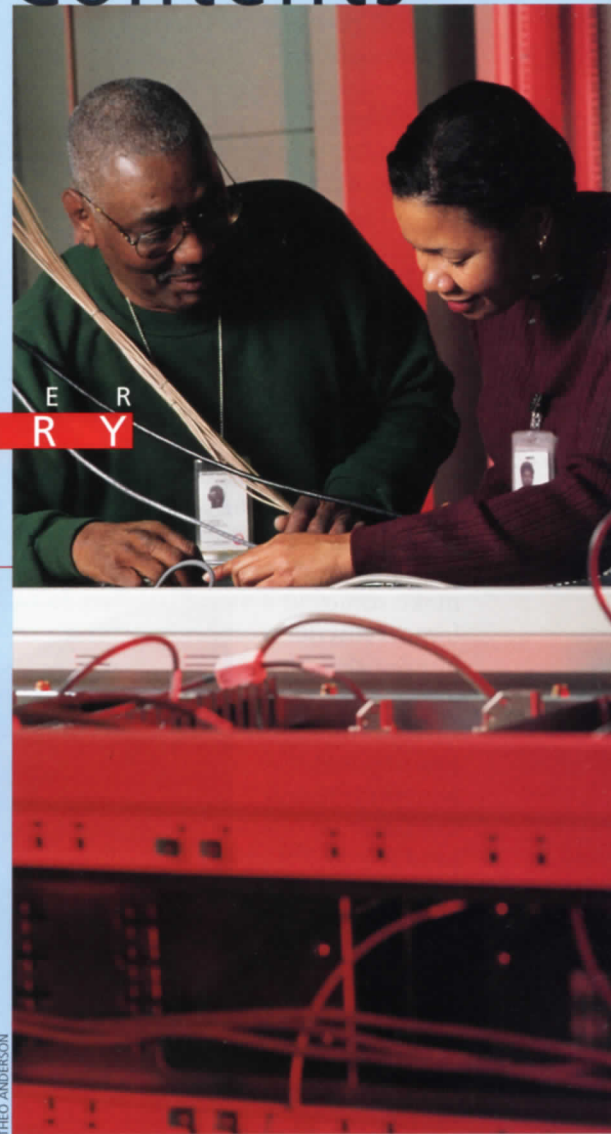
PETER VIDOR

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THEO ANDERSON

### On the cover:

Jim Grgurich, *AirLoop* manufacturing manager at Columbus Works, embraces components of Lucent's fixed wireless system. *AirLoop* enables the rapid deployment of new telephone services.



# Inventing The Future

**Twenty-four Lucent inventors** recently took a trip to Home Depot, a popular home improvement retailer. The inventors weren't from Bell Labs. And they didn't go to shop. They went to make some improvements, but not the domestic kind. Instead, their journey was bent on improving Lucent's products and customer service — with the assistance of customers.

The field trip was one of Business Communications Systems' (BCS) Audio Display Terminal (ADT) marketing group's "Inventing the Future" days. "It's a time to talk with customers, improve our products and invent ways to do things better," explained team leader Adelaide O'Brien.

A couple of years ago, the ADT team, which is responsible for more than 15 million business telephones and applications used by Lucent customers around the world, decided to devote one full day each month to meeting with customers. Since then, the team has hosted dozens of customers via conference calls, video conferencing, face-to-face meetings and field trips, gaining unfiltered feedback on our products and services.

But Inventing the Future is more than a day for dialogue each month. The team views the meetings as a catalyst for change — in process, in approach, in attitude and in name.

## Team Takes Fresh Look At Customer Service



### Change in Process

One invention arising from the monthly meetings is called zero lag-time, which addresses returned telephone sets. "In the past, we looked at charts months after the fact to determine trends in returned sets," said O'Brien. Now, each week, the group gets a list of customers who've returned sets, and each customer is contacted to discuss the problem. The result: Current customers are happier, and future customers will have better products.

The team also developed a more personable way to conduct product recalls. Instead of a letter in the mail, customers get personal phone calls about the product recall. When a software program didn't live up to expectations, for example, the team offered customers an upgrade at no charge.

"We called 200 customers and told them their upgrade was in the mail," said Bob Kaufman, innovative customer desktop solutions manager. One month later, the customers were called again to make

sure they were satisfied. "The customers were thrilled," Kaufman said. "When you call a customer, you win a friend every time."

### Change in Approach

The ADT team is also taking an innovative approach to research by taking advantage of opportunities to hear directly from the customer. "Traditionally, market research has meant focus groups," explained Mike Porter, who is responsible for ADT planning and strategy.

"Moderators asked customers questions, had them complete questionnaires and conducted a general discussion. It cost a lot of money for not a lot of detail."

Today, marketing and R&D representatives are doing the research. "We're going straight to customers and users, probing for their underlying needs," said Porter. "This way, when a customer says he or she wants more buttons, we find out why."

Mike Burkhard, coach of customer trust and enjoyment, is spearheading another research effort that's bringing R&D people closer to the customer. "I get the names of customers and assign them to our R&D people to call and survey," said Burkhard. "This gets them on the front-lines with the customer, instead of always using the product manager as a go-between."

### Change in Attitude

"Being customer-focused makes it more worthwhile working here," said Noel O'Flanagan, manager of innovative desktop solutions. "Three years ago, when CTI was pretty new, PaineWebber bought some of the first available *PassageWay* hardware," said O'Flanagan. Recently, PaineWebber was upgrading equipment, but the oldest *PassageWay* units weren't software upgradable.

**Inventing excellence in customer service is a team effort. In this meeting, Home Depot Interior Designer Petronilla Comune (rear on phone) and Assistant Manager Rob Jakium (in apron) confer with Adelaide O'Brien (left) and her Business Owner and Customer Advocate Team. The BCS team members include Noel O'Flanagan (bottom left), Mike Porter (top) and Bob Kaufman.**

"The formal answer was that they had to order new modules," he said, "but instead of arguing the fine print on the contract, we put ourselves in the customer's place and did what we felt was right." O'Flanagan and team upgraded the hardware at no cost to PaineWebber. "We provided a quick and innovative solution that meant a lot to our customer. This way of servicing customers will keep them satisfied for life."

### Change in Name

ADT Product Manager Burkhard never thought much about his formal job title — until he got the chance to choose a new one. "I asked myself, 'How do you want to introduce yourself? What do you want to be known for? Why do you come to work each day?'" he said. "If I was being true to my job, and myself, I'd want to be known as someone who can be trusted and enjoys his job."

Now Burkhard, the coach of customer trust and enjoyment, thinks about his job title all the time. It's become a goal. "It's a lot of pressure to have a job title like that. But it makes me live that commitment every day," he said. "And I use it as a basis to make business decisions. I ask myself, 'Is it going to improve trust? Is it going to improve my customer's enjoyment of the product?'"

Co-workers with innovative job titles of their own think seeing is believing. "Recently, we had a conference call with one of Mike's customer teams," said Porter, coach of unequaled user experience. "They actually said they 'enjoyed' his telephones. He thinks of himself differently, so he is different."

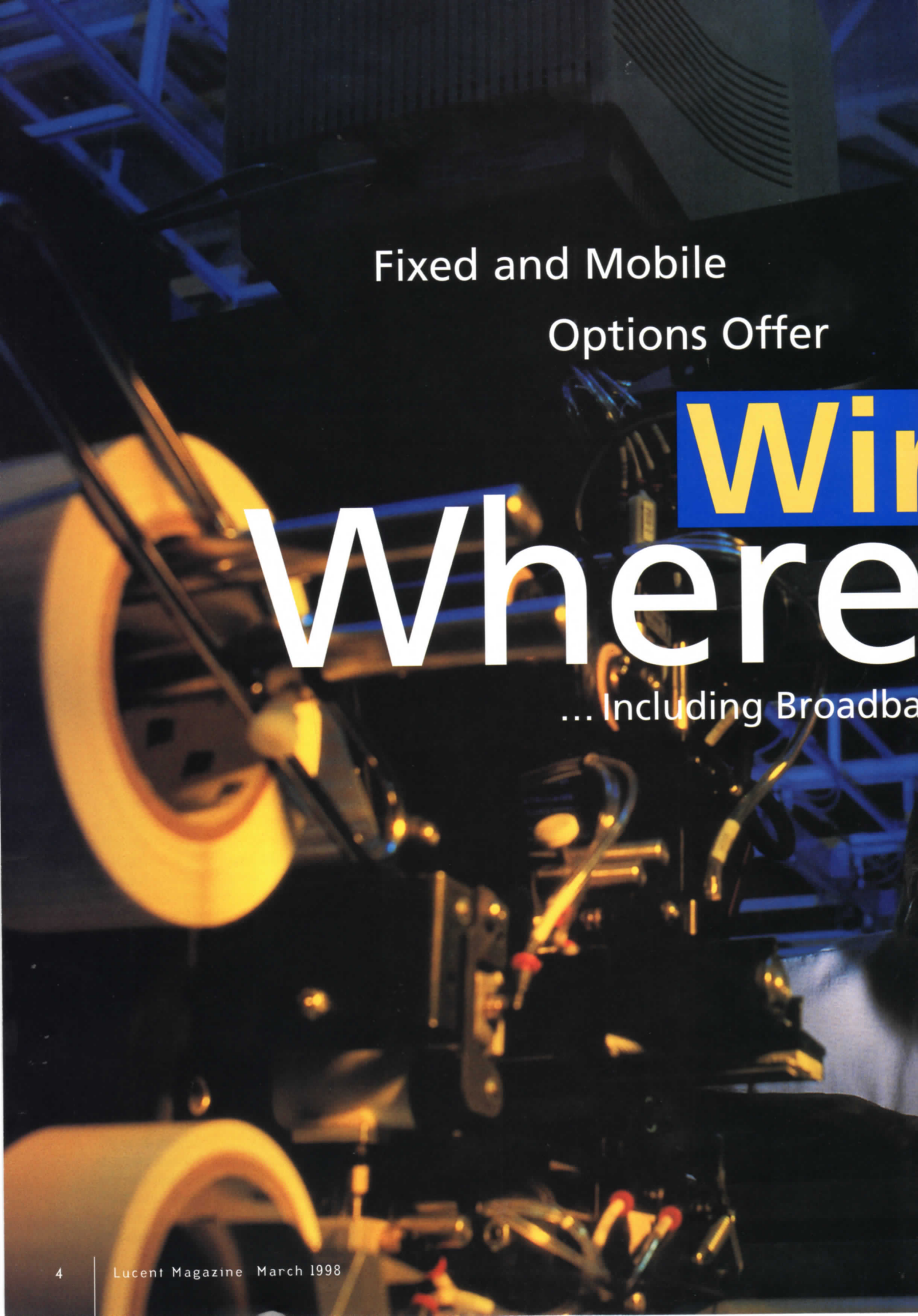
Karen Varnas, enterprise multimedia vice president for BCS, is a believer in the ADT team's innovative approach. "They're coming at their jobs from a customer perspective, breaking new ground and learning along the way."

Customers are believers as well. Commented Larry Schaefer, Home Depot store manager: "Lucent has the same philosophy we do. You put the customer first." ○

— Brooke Houston



TOM SOBOLIK



Fixed and Mobile

Options Offer

# Win Where

... Including Broadband

# Wireless Over and Access



## Attention wireless service providers:

Look to Lucent Technologies for the broadest infrastructure offer in your hotly growing market.

That's the message Lucent customers received on Feb. 17 when Lucent announced it will acquire the Hewlett-Packard Company's wireless broadband business unit in Silicon Valley. The acquisition will accelerate Lucent's development of wireless broadband access systems. These, together with Lucent's *AirLoop* and *Flexent* fixed wireless access systems, will enable service providers to deliver virtually any network service without wires.

By 2008, a billion people will regularly get network connections without wires. That's slightly more than today's global base of wired subscribers. And whereas today "wireless" still means "mobile," a decade from now, hundreds of millions of people will use a fixed wireless link from home, office or wherever — and often use the same link when on the move.

And they'll use wireless for everything that wired networks increasingly provide — calling features, high-speed data, full-motion images, you name it.

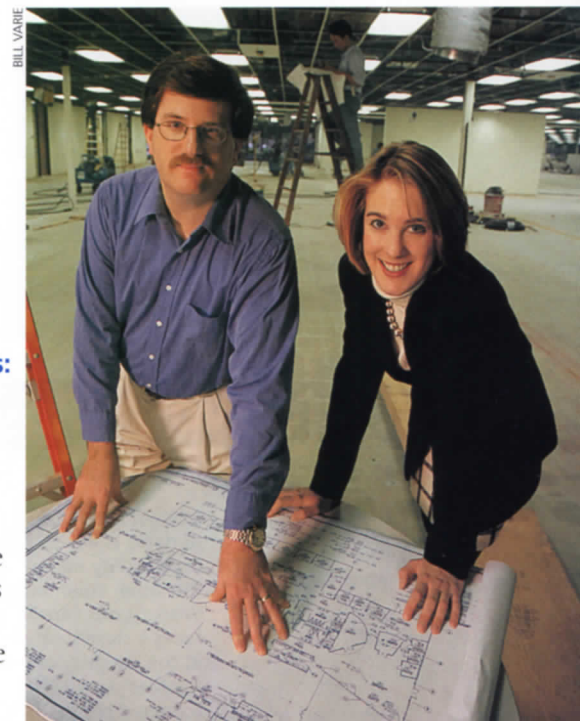
Already, Lucent has offers to hook the home, small office, or automobile to the network without wires. The value of the offers is in the glue — Lucent's comprehensive networking platform, comprising fiber, voice and data switching, and network management tools.

Now Lucent has acquired a wireless technology likely to assure not just a voice-sized or Internet-sized network connection, but high-capacity, broadband connections as well.

"Lucent will support the broadest array of fixed wireless options in the industry, including broadband access," said Jim Brewington, president of Lucent's Wireless Networks

(Left) Dave Hawkins, production associate, labels printed circuit boards used in wireless systems produced at Columbus Works.

(Above) Larry Schwerin, general manager, and Jennifer Lambird, director of marketing, survey building plans for Lucent's new Wireless Broadband Network division, in Milpitas, Calif.



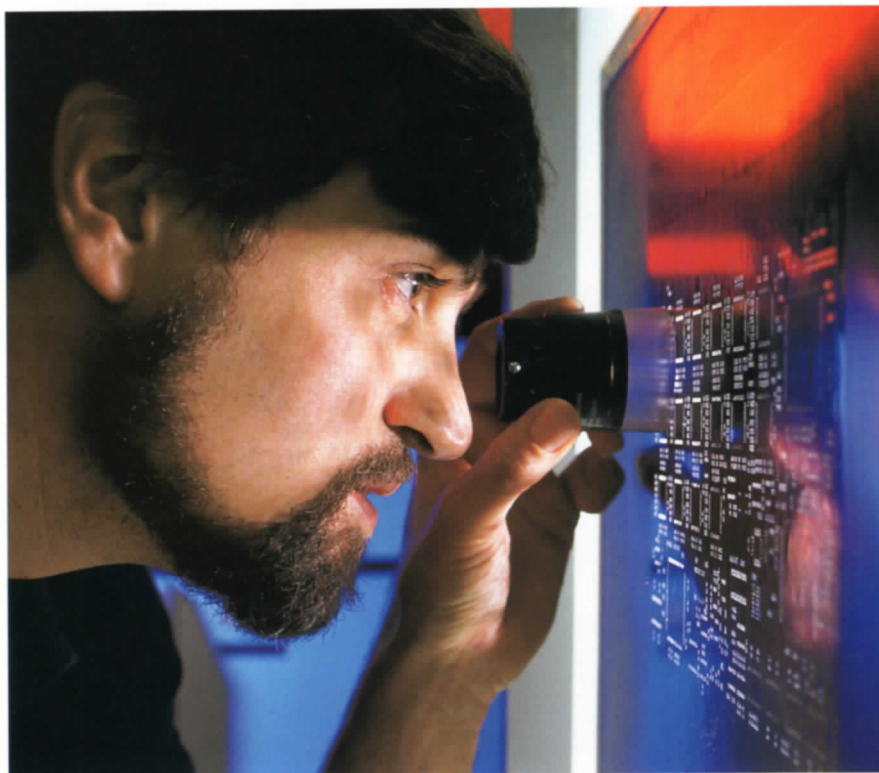
BILL VARRE



THEO ANDERSON

Ensuring the correct assembly of wireless components, like the STRU (Subscriber Transceiver Unit) shown here, is one facet of Delansa Tackett's work at Columbus Works.

(Below) Attention to detail is key to high-quality manufacturing. Columbus Works' Chris Fanelli takes a close look at the integrity of a solder stencil on a printed circuit board.



THEO ANDERSON

Group. "Our customers know we can tailor solutions and offer true solutions centered on the network, rather than just on radios you can hook to a switch."

February's hot news from Lucent's wireless business included the establishment of a new Wireless Broadband Networks division (WBN) in Silicon Valley. The wireless broadband team from Hewlett-Packard will move to a Lucent facility in Milpitas, Calif.

With Livingston and Octel in Silicon Valley, WBN further expands Lucent's presence in that important technology center. WBN will design, manufacture and deploy wireless broadband access networks that will enable service providers worldwide to offer high-speed data, voice and video services without the wires and cables used to connect buildings to the network.

"Lucent has a strong network-based offer that now supports a wide range of wireless solutions," said Larry Schwerin, general manager of WBN. "We have the networking technology, and we're integrating it with the most advanced wideband radio techniques."

In the hot wireless access market, Lucent will serve the full range of business plans that service providers are developing.

## Hot Wireless Access Market



These include:

- **Very high-speed microwave** connections able to give end customers bandwidth-intensive services like high-speed data or videoconferencing. No more need for stringing media on poles or underground.

- **Mobile networks** that do double duty, serving people at home and on the road as they take their phones with them wherever they go. A dual fixed and mobile network gives carriers new revenue opportunities by supporting users more flexibly.

- **Access for residences and small offices** enabling new service fast, at low cost. Lucent supplies this market in two ways — with the *AirLoop* system (in the CDMA technology that Lucent has helped make into a market success worldwide), and with a DECT (European standard) system offered by the TRT unit in France that Lucent acquired in 1996.

## Wireless Broadband Access

In the United States today, only a tenth of the nearly 1 million buildings where people work are served by optical fiber. Installing fiber takes at least a month and needs a business case to justify the investment. It's a lot easier to make the case for wireless facilities, which can be half, or less, the cost of wireline links. The trick is to make wireless capable of delivering broad channels of information.

Lucent plans to pull off that trick ahead of the pack. The WBN division includes development, engi-



In Sweden, the wireless service provider NetCom has deployed Lucent's AirLoop Wireless Loop System. Small antennas, like the one installed (upper left) on this cottage in the Swedish forest, connect NetCom customers to the global networks.

"Service providers we're talking to include names in competitive access that you see in the news all the time — companies with **big growth plans.**"

neering and test facilities across the street from Lucent's Octel location. It brings contact with the Silicon Valley business and academic communities. And it taps into a culture of nimble entrepreneurs. Brewington's wireless business unit put all that together, plus the technology acquisition, in just five months.

Now the Milpitas team is determined to turn wideband microwave into the kind of reliable network technology for which Lucent is known. Airwave frequencies of 28 and 31 gigahertz (billion cycles per second) are being auctioned by the U.S. government. The WBN will develop antennas and other techniques to punch high frequencies through the atmosphere.

"Our competitors expect to meet these challenges," said Schwerin. "We have to meet them first."

When wireless broadband systems go to market, competitive service providers will want to build them. On tall buildings, they'll put up antennas. The antennas will reach out wirelessly to customers' rooftop transceivers, connected to LAN or voice systems. On the network side, the service provider's antenna will connect by fiber to Lucent (or other) networking platforms.

Customers will enjoy network access at up to 45 megabits of data, with support for both North American standard rates and comparable international rates. This is

1,500 times the rate of today's PC modems, and 30 times that of the industry-standard T1 lines, which support many businesses. End customers will be able to buy either all of that 45 megabits or just enough to support their phone lines or a network of employee workstations. And within it they will fit a variety of applications in voice, video and data.

"Service providers we're talking to include some new names in competitive access and others that you see in the news all the time — companies with big growth plans," said Jim Goodman, who is responsible for sales of WBN. "What makes me proud is that our wireless broadband team in Lucent is showing these customers the same kind of entrepreneurship they practice and respect. This is a model for Lucent's future."

Outside North America, the early target market for wireless

"Soon, we'll forget  
about wires.  
We'll forget about  
wireless.

**We'll just connect."**

broadband includes countries where privatization has spread — South Korea, Taiwan, Japan, Germany and the United Kingdom.

#### **AirLoop Wireless Local Loop System**

Many service providers, including new operators, are targeting customers who don't need broadband but want voice and data services like ISDN. But they're in markets where wires will cost too much or go up too slowly. These are the markets — in developing countries and elsewhere — for Lucent's *AirLoop* Wireless Local Loop System. Brunei has *AirLoop* in operation, deployed by Lucent's team at the Kuala Lumpur, Malaysia, regional technical center. *AirLoop* has contracts or deployment in six countries and is in trial in several others.

*AirLoop* can be tailored to enable Lucent customers to rapidly provide wireless services — from basic calling to advanced data — for small businesses and residences.

NetCom Systems A.B. in Sweden is an *AirLoop* customer. NetCom plans to serve as an alternative to the major Swedish carrier, providing small and medium sized companies with voice and Internet connections. This expands NetCom's customer base and lets it reuse the towers supporting its existing cellular network. Customers can sign up



Curtis Washington (left) and Doncella Alexander test wireless components, including this CATU (Central Access and Transcoding Unit) being produced at Columbus Works.

THEO ANDERSON

for about \$240 (U.S.) and be connected within 48 hours. A U.S. version of *AirLoop* is being readied for deployment in early 1999.

#### **cdmaOne Wireless System**

Lucent also has an offer for wireless networks that can let a service provider expand its mobile service to embrace stationary users. End customers can pay for fixed and mobile services on one bill, possibly at dif-



KEN SAKAMOTO

Lucent is showing its customers "the same kind of entrepreneurship that they practice and respect. This is a model for Lucent's future," said Jim Goodman.

ferent rates matched to the different value of each service. In many markets, a single carrier could meet all of a subscriber's needs.

And, after starting business as a fixed-service provider, a *cdmaOne*-equipped service provider could migrate to mobility — or vice versa. One network: mobile and fixed, voice and data. Carriers combine traffic from multiple sources to efficiently fill their core network facilities.

Lucent's *cdmaOne* customer, Centennial Telephone of Puerto Rico, is getting just that result (see Lucent magazine, Jan./Feb. 1998, page 11). Subscribers have a phone at home that acts like any other phone — but without wires. It works on the road as well — same number, same bill. The average Centennial customer buys twice as much calling as the basic subscription package spells out.

In late February, at the wireless industry's major North American trade show, the Lucent wireless business announced new technology for the combined fixed and mobile offer. "The *Flexent* offer builds on Lucent's *Autoplex* of the past," said Bob Sellinger, director of marketing and business development for AMPS/PCS. "It applies the power of today's *AnyMedia 5ESS* networking platform."

With *Flexent* a carrier can pull in traffic from subscribers over thinly populated territory. Even along the Yukon Highway in Canada, Lucent's customer, Clearnet, need not lose a single trucker's telephone traffic.

For callers worldwide, Lucent has a clear vision of a blurring distinction. Wired and wireless services will use evermore common network facilities. The fixed caller will become mobile not by changing phones but by stepping into a bus or car. Voice and data equipment will have increasingly common platforms to meet any immediate need.

Said Brewington, "From Lucent, customers can get what they want, better than anyone else can give it to them. Soon, we'll forget about wires. We'll forget about wireless. We'll just connect." ○

— Blanchard Hiatt

## COMPETITIVE SCAN

Last year's market for fixed wireless access was \$500 million. In 2001 that figure will grow to \$9 billion. About 50 companies compete in this market. Here's a brief look at a few of them.

### Ericsson (Radio Systems)

#### Corporate Background

Based in Stockholm, Sweden, Ericsson reported 1997 sales of 167.74 billion kronor (US\$20.93 billion). The company has 100,774 employees worldwide.

#### Key Fixed Wireless Access Products

RAS-1000, DRA-1900

#### Customers in Fixed Wireless

Globe Telecom (Philippines), and Smart Communications (Philippines).

### Motorola

#### Corporate Background

The Schaumburg, Ill., company has 139,000 employees worldwide and generated \$29.8 billion in sales in 1997.

#### Key Fixed Wireless Access Products

WiLL

#### Customers in Fixed Wireless

Bharti Telecom Ltd. (India), Matav (Hungary), Pilipino Telephone Corp. (Philippines), Telekomuni Kacja Polska SA (Poland).

### Nortel

#### Corporate Background

With headquarters in Toronto, Canada, Nortel had revenues of \$15.5 billion last year. The company employs 73,000 people worldwide.

#### Key Fixed Wireless Access Products

Proximity product family

#### Customers in Fixed Wireless

GUATEL (Guatemala), Ionica Group (United Kingdom), Telecom Finland, Teligent, Telstra (Australia).

### And More

Other competitors include smaller companies that do not offer complete systems but have decided to focus on wireless local loop: Diva Communications Inc., in Union City, Calif.; InterDigital Communications Corp. in King of Prussia, Pa.; and Tadiran Ltd. in Holon, Israel.

# Gaining In

## Lucent and Prominet: A Perfect Match

It took Prominet Corp., Lucent's latest addition to its data networking portfolio, less than two years to make the leap from start-up to star developer of local area network switching equipment. And that's just the kind of success — and speed — that attracted Lucent's interest in acquiring the company, which is now setting the pace for super-fast switches.

Based in Marlborough, Mass., Prominet gained prominence in the dynamic data networking market by developing best-in-class Gigabit Ethernet technology, which integrates switching and routing capabilities to break through bandwidth bottlenecks that result as users add increasingly sophisticated applications, such

Gigabit Ethernet switching products are the domain of Satvinder Dhami, who works at Prominet headquarters in Marlborough, Mass.

STEPHEN SHERMAN

## DRIVING **FAST** IN DATA NETWORKING

### April 1997

Lucent introduces NetCare Services to help business customers manage their increasingly complex communications networks.

### May 1997

Lucent extends NetCare Services to business customers in Europe, Asia, the Middle East and Africa.

### June 1997

Agile Networks unveils high-performance Ethernet switch.

### July 1997

KIH Online, a leading Internet service provider in Kentucky, offers statewide long-distance voice service via Lucent's Internet Telephony Server.

### August 1997

Kanematsu, one of Japan's major trading companies, trials Lucent's Internet Telephony Server for calls among its three major offices in Tokyo and Osaka, Japan, and in New York.

# Prominence Data Networking

as multimedia and Internet access. Introduced in the late '70s, Ethernet technology speeds data communications at 10 megabits per second. Gigabit Ethernet sends data 100 times faster at 1,000 megabits — or one Gigabit (one billion bits) — per second.

According to market researchers, Ethernet dominates most data networks around the world. More than 80 percent of all network connections rely on the technology, representing more than 120 million interconnected PCs, workstations and servers. Prominet's powerful P550 Cajun Switch, praised in product evaluations as "a switch with an attitude," offers two to three times the capacity of any other Gigabit switch. And the upcoming P550 with Integrated Routing will direct traffic 10 to 100 times faster than software-based routers and at much lower cost.

"The overall Gigabit Ethernet market is expected to reach \$1 billion in sales by the year 2000, and Lucent intends to grab that opportunity," said Bill O'Shea, Data Networking Systems group president. "Prominet hits the sweet spot of our data networking strategy and gives us a strong position in one of the hottest growth markets."

When Lucent introduced its data networking strategy in September, according to O'Shea, the company knew network managers would look to two technologies to deliver high-performance data connectivity — ATM and Ethernet. At the time, Lucent announced a portfolio of intelligent switches based on ATM technology. Through Prominet, the company adds the critical Ethernet component. "We're acquiring technology that's clearly next-generation in performance, yet compatible with what 80 percent of the networks users already have in place," O'Shea said.

Menachem Abraham, formerly Prominet president and CEO and now data networking systems president — Gigabit Ethernet Switching Products, and one of the company's five founding members, also believes strongly in the synergy between the two companies. "We're joining a Lucent data networking team on the move," he said. "Together, we'll set a new standard in data networking."


Industry observers are equally excited about the acquisition. "The deal gives Prominet the wings to compete at a higher level and in

a broader market, and provides Lucent with a fast-track entry into the Gigabit Ethernet market and a stronger competitive position moving forward," noted an analyst with Dataquest, an industry research firm.

What gives Prominet its edge? The answer, according to Doug Ruby, vice president-product marketing, lies in a sharp focus on developing the best products and a staff of savvy industry veterans intent on getting the job done. Prominet's 90-plus employees, most of whom will stay in their current jobs, are a seasoned team with in-depth experience in developing and managing data networks.


"Prominet has attracted some of the top talent in data networking," said Ruby. "We have people working here who were very successful at companies like Bay Networks, Cabletron, Chipcom, Cisco and 3Com, among others. They know what it takes to win in this incredibly competitive market. And now that we're part of Lucent, only the logo has changed. We're still on the same mission: to develop and deliver the kinds of products that will make Lucent a recognized force in data networking." 

— Maureen Dvorak



## September 1997

Lucent announces its strategy to dramatically improve data networking performance and introduces several key products.




## October 1997

Lucent acquires Livingston Enterprises, a leading provider of remote access networking solutions, based in Pleasanton, Calif. Also, Lucent reorganizes into 11 "hot" businesses, including Data Networking Systems.



## November 1997

Sync Research, a leading developer of access and management solutions for frame relay and other network services, selects NetCare Services to provide support.



## December 1997

Lucent announces the acquisition of Prominet Corp., a Marlborough, Mass., start-up that is a leader in the Gigabit Ethernet market. Also, Lucent's Internet Firewall is announced.



## March 1998

Data Networking Systems announces Virtual Telephone, which enables employees in remote locations to send and receive calls via the Internet.



PETER VIDOR

Counting down to Year 2000, a specially designed digital clock reminds Lucent's Year 2000 program team of precisely how many seconds remain in this millennium.

# Digital Dilemma: Year 2000

"Two missing digits now  
have the potential to touch  
*every facet and dimension*  
of Lucent's business operations..."

A digital clock stands like a billboard — a constant reminder — on a corner of his desk. It's almost 3 p.m. on Feb. 4, 1998, and the clock quietly flashes a signal, a silent countdown — 60 million seconds left. Each passing day will erase another 86,400 seconds. For John Pittman, vice president and chief quality, environment, health and safety officer, each one of those seconds counts. Each passing second could be a lost second, an unproductive second, as time itself propels the world toward the new millennium, toward Year 2000.

For major corporations like Lucent, the impending arrival of Year 2000 represents major challenges and opportunities.

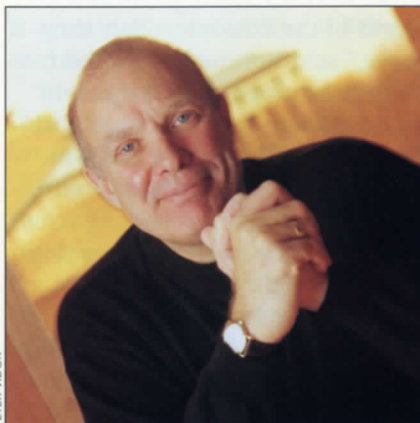
#### Avoiding Chaos

Many media headlines have already painted an ominous picture. Newsweek said Year 2000 could be "The Day the World Shuts Down." Another magazine called it the "Countdown to Chaos." What's all the fuss about?

A "clever idea" devised more than 30 years ago to save precious bytes of computer space has created a problem with potentially widespread ramifications. When the year 1999 runs out, some computers around the globe won't recognize the Year 2000 that follows. That's because long ago they were programmed to drop the first two digits of the year — 1952, for example, was simply abbreviated to "52." As a result, the Year 2000 is represented as "00," making calculations using that date potentially incorrect — it may be interpreted as 1900.

"These missing digits now have the potential to touch every facet and dimension of Lucent's business operations and our own personal

lives, from the clocks and computers we use to the elevators we step into. Potentially serious issues could surface if our products and information systems aren't capable of recognizing the new millennium and the years beyond," said Pittman, who was recently appointed to lead Lucent's Year 2000 Program Office. His team's charge is to assess and communicate the risk



PETER VIDOR

Every second in the countdown to Year 2000 is important to John Pittman, who leads Lucent's Year 2000 Program Office.

and status associated with the millennium date change, and ensure, working with accountable managers, that Lucent will be "Year 2000 ready" across the enterprise.

#### An Enterprisewide Effort

What started out as a mere technical solution to a computer capacity issue years ago has now grown into a digital dilemma for companies large and small. A key question for most companies is simply, "How big is the problem for us?" While different parts of Lucent have already answered this question, the Year 2000 Program Office has been charged with assembling this information on an enterprise-wide basis.

Companies — including Lucent — can't just stop when they have

an internal fix in hand. "Even if a company brings all its products and information systems into compliance," added Pittman, "it still must work with its suppliers to ensure that they are effectively addressing their own Year 2000 issues."

"Year 2000 provides us not only with challenges, but with unique opportunities," added Walt Gibbons, program management vice president who is heading the Program Office activities on a day-to-day basis. "By preparing our customers for Year 2000, by offering the best possible solutions and creating a positive experience, we can distinguish ourselves from our competitors."

That point alone becomes a trigger for action. Added Pittman: "Our objective at Lucent is to move into the new millennium without impacts of any significance on our business, and to seize any opportunity to transform our solutions into competitive advantages for ourselves and our customers."

"Lucent's business groups and corporate centers are at different stages in their Year 2000 compliance efforts. Our task is to capture a broad understanding of the current state and to serve as a catalyst to ensure that we effectively focus our resources on those things that need the most attention and highest priority."

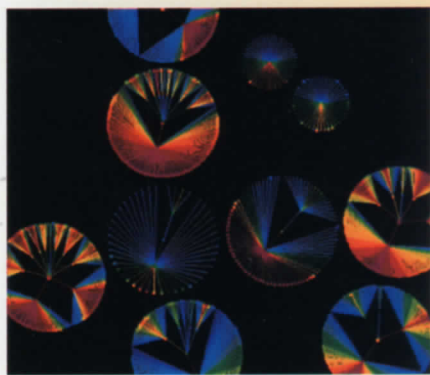
Pittman's team is working with groups across the company to ensure that the Year 2000 work is being done as close to the issue as possible. "We want to keep the work where we have the accountability, resources and decision-making capabilities. We have centers of excellence across the business with a lot of great work under way. As an enterprise, we need to leverage that good work to ensure that all of our Year 2000

## Visual Insights

One of Lucent Technologies' newest business ventures — wholly owned Visual Insights, headquartered in Naperville, Ill. — has done more than just study Year 2000 problems. It now offers an interactive data visualization application to Year 2000 software tool providers.

When combined with a Year 2000 analysis tool, Visual Insights Software for Year 2000 Analysis will help companies sift through mountains of potentially defective code. The goal? To isolate date-sensitive lines of code ripe for conversion so that companies can handle the millennium date change.

The venture's first commercially available application, Visual Insights Software for Year 2000 Analysis, is based on Bell Labs technology and helps corporate managers assess, understand and communicate the Year 2000 impact on corporate code. "Understanding the extent of the impact, scope and cost of this type of project is key to a successful conversion," said Daniel Fyock, director of Visual Insights product management.



Spokes in the wheels of the image above represent the software programs used to manage the operations of a large company. Red lines provide an instant visual image of the programs that need to be revised to achieve Year 2000 compliance.

**"Year 2000 compliance has to be in every product that's developed, and every process and interface that involve a customer."**

programs are successful. "High on the list of Year 2000 projects is upgrading communications software used by Lucent's customers to operate and manage voice and data networks worldwide.

### Helping Customers Manage

"Our biggest thrust is to make sure that our customers' networks continue to run reliably to meet the needs of the customers that they serve," said Ronnie Lee Bennett, Year 2000 program management vice president for Lucent's Global Service Provider Business (GSP). "We are working with our entire customer base to resolve any issues our customers have with our products that might stem from Year 2000 date problems," said Bennett.

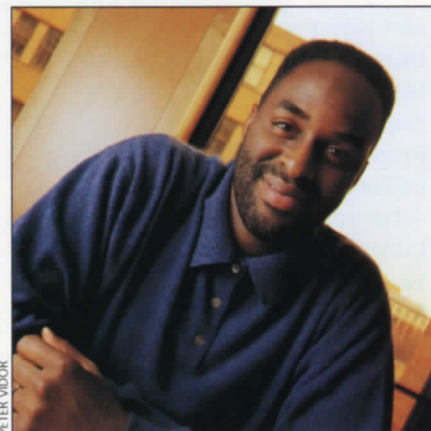
Lucent's Microelectronics Group recently cleared one of its major Year 2000 hurdles when its Chief Information Officer (CIO) organization remediated 8 million lines of Cobol code, which supports Microelectronics' primary manufacturing and planning system.

"Dec. 31, 1997, was our first Year 2000," said Debbie Close, Microelectronics' director of global operations. "Our core manufacturing and planning legacy system — CLASS-A — was custom-developed in 1985. Back then, it was a premier application. Today, it still supports our business globally. But the system used a two-year forecast horizon that would not recognize any dates after Year 2000. That forecast horizon served as our catalyst to fix our CLASS-A system two years before the actual millennium."

In December 1996, Microelectronics launched a program to make the system compliant with Year 2000 specifications. "We went to IBM, which was already main-

taining our code, and said we thought we had a golden opportunity to leverage our existing outsourcing relationship to address the Year 2000 problem," said Close.

IBM agreed to provide a solution from start to finish. On Dec. 31, 1997, the code was reintroduced into production without a glitch.



Along with challenges, the Year 2000 change brings opportunities. Walt Gibbons, believes helping customers prepare for the Year 2000 gives Lucent a competitive edge.

"We now have to continue to assess the risk and size of the Year 2000 problem for the rest of our business," said Close. "We're fortunate that many of these applications and systems are newer and the problem isn't as pervasive."

Lucent's Business Communications Systems' (BCS) unit also has a Year 2000 program up and running.

"We've tried to incorporate awareness and concern about Year 2000 in everything we do in BCS," says Ed Dyl, district manager, product line planning. "Year 2000 compliance has to be in every product that's developed, and every process and interface that involve a customer."

Since September 1996, Dyl, Linda Thomson and Marge Rance have all worked together to assess

the impact of the Year 2000 date change on BCS' entire product line. According to Dyl, a majority of BCS products already are Year 2000-compliant. "We now have offers out to move customers into compliance," added Dyl.

"One of the biggest issues, from a customer perspective, is for us to actually demonstrate that a product is compliant and will work in a Year 2000 business environment," said Dyl. "Customers want to be in business on day one of Year 2000. They want a product that they know will work. And they want to see it work now."

BCS uses its systems and integration laboratory in Middletown, N.J., to demonstrate to customers that BCS products will function in the new millennium. "While we can't test every customer's configuration, every customer benefits from our compliance test work because we are compiling a successful test record for our products and the applications that customers use," said Dyl.

"While identifying all the work under way across Lucent is important, ensuring that all the remedies that are implemented work together is just as crucial," said Gibbons.

And that's a priority echoed by Pittman. "Making sure that all the fixes we implement work end-to-end in any given process, system or operation is the true measure of the challenge ahead, as well as a leading indicator of our successful transition to the new millennium," said Pittman.

As more and more activities move through the phases of

achieving Year 2000 compliance, a major task for Pittman's Program Office is to ensure that gaps do not emerge in Lucent's overall solution. "Most organizations have already scoped out what they believe to be their piece of the pie," said Pittman. "Part of our value-added activities is to help surface and resolve any gaps in scope and accountability, and to ensure that all the pieces add up to the whole pie."

#### Ask the Right Questions

Grassroots awareness of the Year 2000 issue needs to emerge in every corner of Lucent. "If we're all looking at this issue in our areas of responsibility and asking the right questions, we'll ensure that everything is included in our Year 2000 scope and that someone is accountable for getting it fixed," said Pittman.

"If no one has voiced any concern about Year 2000 issues in your work group, then you have the opportunity to take the initiative and ask, 'Is there anything in my area of responsibility that could be affected by the Year 2000 problem? Am I ready?'"

Pittman also is quick to point out that in this "ball game" there can be no personal winners or losers. "No individual player on the Year 2000 field can be successful unless Lucent is successful.

This is a game in which we all have to focus on enterprise success and share accountability for achieving our Year 2000 compliance objectives." ○

— John Brooks

**"No individual player  
on the Year 2000 field  
can be successful unless**

*Lucent is successful."*

**Identifying potential Year 2000 pitfalls is an essential task. Here are some**

## *guidelines:*

- **Talk to your manager** — right now — about any concerns you have regarding products or internal systems. Make sure potential problems have been identified and are being effectively resolved.
- **Check with your organization's legal team** before you agree to any warranty suggested by a customer or supplier.
- **Learn who to contact** to address questions from customers and suppliers through information posted at the Lucent Year 2000 web site: <http://home.lucent.com/lucent2000>. Don't offer personal views about Lucent's Year 2000 readiness or the contractual rights of a customer, vendor or partner. Media inquiries should be referred to Lucent's Public Relations department.
- **Don't agree to test or certify** any products for a customer without getting approval from your business management and legal teams.
- **If you're working on a Year 2000 project team**, follow the document retention guidelines posted at the Year 2000 web site: <http://home.lucent.com/lucent2000>.

# EMPLOYEES HEAD BACK TO SCHOOL

**Training and education** courses offered in partnership between Lucent and its unions have given thousands of U.S.-based employees an opportunity to acquire new skills and even advance their careers.

One example is Rick Wanner, a Microelectronics Group composite master technician at the Reading Pa. facility. Wanner participated in the Enhanced Training Opportunities Program (ETOP) for four years and has seen not only his knowledge increase as a result, but also his job responsibilities.

Wanda Biggs Reeves, a correspondence and reports assistant with the Global Service Provider Business in Nashville, Tenn., is another exam-

ple. She made history in October by becoming the first graduate of The Alliance/College Program — a distance-learning degree program for Alliance participants.

With Lucent's support, ETOP and The Alliance are reaching out to union-represented employees throughout the company. They offer a variety of programs that help people gain new skills, earn high school and college degrees and increase their confidence and job competitiveness.

## ETOP Training

"I got involved with ETOP because I wanted to be more competitive in the workplace,"

said Wanner, a tool and die-maker by trade. "I wanted to take courses on the computerized machinery used in our tool room, and ETOP had what I needed."

A partnership between Lucent and the International Brotherhood of Electrical Workers (IBEW), ETOP is open to employees represented by IBEW's EM-3 Council (manufacturing).

With the help of ETOP, Wanner's responsibilities at Reading have broadened. He is now the designated trainer in his work group, teaching others how to use the latest computerized equipment.

Since its inception 12 years ago, ETOP has funded more than

## Enhancing Skills Through Training and Education



Proud graduates of Lucent's special programs for training and education include Wanda Biggs Reeves (left), Rick Wanner and Rita Martinez.

100,000 classes and programs for its IBEW members. More than 40 percent of those members participate in ETOP training programs throughout the year.

"Our heritage is defined by dedication, courage, innovation and triumph," said Bill Dussling, ETOP co-executive director. "Union and management work together to support employees in furthering their education, enhancing their skills and training them for the types of jobs that will be here in the future."

Local ETOP committees at Lucent manufacturing locations help administer ETOP. Consisting of an equal number of union and management participants, the committees are responsible for evaluating training needs, applying for necessary funds and overseeing the effectiveness of training programs at their locations.

To satisfy the growing demand for computer skills, ETOP established on-site computer training centers at eight manufacturing sites. More than 28,000 employees have taken courses at these centers.

ETOP also operates Enhanced Learning Centers at nine locations — helping many members earn their GED (general equivalency diploma). ETOP uses Enhanced Learning Centers to partner with local higher learning institutions that offer such educational programs as basic skills training, occupational skills training, secondary school skills enhancement and undergraduate courses.

#### At The Alliance

Wanda Biggs Reeves wanted to return to school to enhance her career opportunities. With family responsibilities, church activities and work commitments, however, she wasn't able to attend regular college classes.

Through The Alliance, a training partnership between Lucent, the Communications Workers of America (CWA) and IBEW, Reeves received her associate degree in science/mathematics/technology.

"The Alliance/College Program was the answer for me," said Reeves. "The Alliance provided the

#### Where To Go For Training Info

- ETOP: visit [www.etop.org](http://www.etop.org) or contact your local ETOP committee.
- The Alliance: visit [www.employeegrowth.com](http://www.employeegrowth.com) or call 1 800 323-3436.
- Learning and Performance Center: visit [www.lpc.lucent.com](http://www.lpc.lucent.com).
- Occupational TAP: contact the Lucent Tuition Assistance Coordinator at 1 800 785-6585, or visit [www.lpc.lucent.com](http://www.lpc.lucent.com) (click on: lpchome, university)



program, Lucent provided the funding, and I was able to fit studies into my full schedule."

Reeves now plans to work on a bachelor's degree. "I appreciate the distance-learning program and the financial assistance that made my associate degree possible," she said.

Since its inception 12 years ago, The Alliance has served more than 40,000 Lucent participants, with more than 175,000 course enrollments. Its more than 200 joint labor/management local committees have been the model for identifying and delivering the majority of these programs.

"We fulfill our mission one person at a time — by meeting members' learning needs with programs that stimulate, educate and build self-fulfillment," said Jack Stephens, The Alliance co-executive director. "The growing availability of computers and Internet technology creates exciting possibilities for meeting individual learning needs in new, cost-effective ways."

Programs are continuing to be developed and offered via the Internet or on CD-ROM. The Alliance also is expanding programs that grant academic credit for previous work or training experience.

Another innovation is The Alliance Skills Inventory (ASI), used at Lucent's Business Commu-

nications Systems facility in Denver to merge company and CWA workforce goals for targeted training. "The Alliance knows training programs must prepare employees for the jobs of the future," said Stephens. "We expect to work more closely with supervisors, as well as union officials, to identify skill gaps and deliver programs that prepare participants for emerging opportunities."

#### What's on TAP?

"Lucent's Tuition Assistance Plan (TAP) has helped me immensely," said Rita Martinez, photolithography process analyst, Microelectronics Group, Orlando, Fla. "Not only did I gain a great education, but I also gained self-confidence. I attribute my recent promotion to TAP."

In addition to ETOP and The Alliance, Lucent supports academic excellence and employee development through its Learning and Performance Center's Occupational Tuition Assistance Plan. TAP helps employees earn undergraduate and graduate degrees or certificates. In the past decade, some 20,000 occupational employees took part in this program at more than 550 universities throughout the United States. In 1997 alone, Occupational TAP sponsored more than 6,500 courses. TAP has been benchmarked against and is aligned with tuition reimbursement plans at such companies as Cisco, Siemens and Nortel.

"Through TAP, Lucent provides another avenue for many of our occupational employees to gain the skills they need to succeed in their careers, and to help Lucent succeed in a highly competitive global marketplace," said Bill Harrod, Lucent's Learning and Performance Center vice president.

Besides TAP, the Learning and Performance Center (Lucent's corporate college) delivers strategically focused courses in Piscataway, N.J., and throughout the United States. In 1997, the Learning and Performance Center delivered 175,000 student days of courses — 15 percent of the courses were taken by occupational employees. ○

— Noëlle Lusardi

# How Are You Results-Focused?



DAVID MCINTYRE

**David Wang,**  
financial supervisor, Global  
Service Provider business,  
Beijing, China

"If we can't collect from the customer, we can't make a profit. In 1996, it took 290 days from issuing an invoice to collecting payment. In 1997, we reduced that to 160 days. Every member of the China team and the U.S. asset management team is focused on results and contributing to this progress."

**Suggestion:** Know what you must do every month and every day to meet your long-term objectives.



DAVID TOERGE

**Rose Robinson,**  
division manager,  
BCS Octel Messaging System,  
Milpitas, Calif.

"It's easy for me to stay results-focused. My group maintains a hotline to answer questions from sales people, and one of our objectives is to respond to all calls within two hours. Every individual in our organization has written group and individual objectives. My job is to make sure people are meeting their objectives."

**Suggestion:** Establish your priorities, have clear communications with your boss and get feedback from your customers.



RICK FRIEDMAN

**Louise Hairston,**  
production associate,  
Optical Networking Group,  
North Andover, Mass.

"I think of the person who follows me on the production line as my customer, and I want my customer to be satisfied. Getting it right the first time is a matter of pride. And the bottom line is money. When we have to redo work, it costs Lucent money. We have to work better than competitors."

**Suggestion:** Don't let pride get in the way. Ask for help.



ROBIN NELSON

**Vernon Terrell,**  
GCM asset manager, Global  
Service Provider business,  
Atlanta, Ga.

"Being results-focused means being a bit of a rebel. You can't just do the same-old, same-old. Through Global Commercial Markets' 'Quest for the Best' idea program, asset management team leaders are saving \$1 million a year. We came up with an electronic library of folders to replace paper folders. This saves time, allows remote access and reduces the cost."

**Suggestion:** Results don't come from complacency. Try something different.

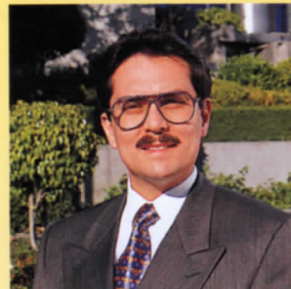


STEVE MUREZ

**Hassan Safer,**  
sales manager, BCS,  
Le Plessis, France

"Being results-focused is a way of being, not a process to implement. Before investing myself in a project, I weigh the risks versus pay-offs. And each day I make sure every action I take brings me closer to my goals."

**Suggestion:** Self-assess every day. Think in the short-, mid- and long-term.



HECTOR AMEZQUITA

**Miguel Angel Lopez,**  
provisioning manager, BCS,  
Mexico City, Mexico

"For us, focusing on results means finding call center solutions that make sense for our customers. Questioning customers closely in the beginning and during the process — and listening carefully to what they say — is one way we assure outstanding results. Sometimes we learn that customers originally ask for something different than what they really need. Taking the extra time to understand their business pays off for us and for them."

**Suggestion:** Let the customer in on the details of the work. If a problem crops up, always share it.



MARTIN SASSE

**Silke Armbrust,**  
regional manager,  
northern region, BCS,  
Hamburg, Germany

"Our team is strongly focused on results, which for us means sales of call centers. Since Lucent is still a relatively new market entrant, we sometimes have to do a tough job in educating our customers about our company before we can even start to talk about products. Once we convince them about Lucent's leading-edge technologies powered by Bell Labs innovations, the real sales job begins. But we have made inroads with that approach, which proved very successful in 1997. We closed three huge deals with local companies."

**Suggestion:** Leverage Lucent's 125-year track record when you talk to your customers.

