

Head/ **Forging Links to a Unified Europe**

Subhead/
**Networking contributes to one of the world's
largest and most dynamic regional economies**

Take a 200-mph express train across Western Europe and you'll no longer be asked for your passport at border crossings. The tickets and food are priced in Euros, the new common currency adopted by the European Union (EU).

But your train will still pass through a panoply of distinct linguistic, cultural, and political regions. You may be sitting next to a nurse from Pomerania whose native tongue is Polish, a dock worker from Marseilles who speaks Moroccan-accented French, or a London-based executive who grew up in Belgium and is fluent in several languages.

Unity emerging from diversity is the dynamic that pervades the New Europe. And it's fueling a powerful economic engine. With a population of 376 million, the 15 countries that comprise the EU together generated a gross domestic product (GDP) in 1998 that came close to equaling that of the U.S. (For a wealth of economic information about the EU, see the organization's Web site at <http://europa.eu.int/>.)

3Com Europe serves the continent with more than 3,500 employees located in 24 offices. This major presence, the largest of any U.S. networking company, reflects 3Com's commitment to networking as a key contributor to Europe's economic expansion in the next century. To give readers a flavor for how Europe is connecting with the future, *Net Age* talked to 3Com managers in several countries. Much of what follows is based on their insights and impressions.

The face of European networking

The Euro, which to date has been adopted by 11 of the 15 EU nations (dubbed the Eurozone), marks a watershed in European economic history. "The Euro represents a major change in the way European businesses will operate," declares Nigel Oakley, 3Com European marketing manager.

The Euro not only holds the potential for rivaling the dollar as the global currency standard, it also effectively lowers trade and investment barriers between countries. As just one example, a uniform currency will make it much easier for multinational companies to do business and individual investors to trade on the Web.

The expanding role of IT. If the Euro is emblematic of European economic unity, networking is one of its driving forces. The European Commission of the EU has taken a proactive role by sponsoring projects that range from researching basic technologies to laying the groundwork for industry-wide trading networks. (See www.ispo.cec.be/ for details.)

In that spirit, 3Com has joined with a number of other European companies and technology leaders to form the Alliance for the Internet in Europe (a4ie), an initiative aimed at smoothing the way for electronic business. The twin goals of the a4ie are to ameliorate financial obstacles such as tariffs and taxation, and to overcome Internet access problems by helping to create a common European Internet backbone. To this end, the alliance reaches across national boundaries to mobilize governments, regulators, and businesses under the common banner of open e-commerce.

As a result of an agreement reached at the World Trade Organization meeting in 1997, many EU members are moving to open their telecommunications markets to competition. In several countries deregulation is proceeding at a rapid pace. The new competitive environment has already affected tariffing within countries, and should soon have an impact on international calling as well.

Trends in technology use. Although beepers and pagers are still legion in the U.S., Europeans now favor cellular telephones. Mobile phone systems are well advanced in many parts of Europe based on the Europe-wide GSM digital standard. In Helsinki, for example, three out of four residents carry a cell phone, and Telecom Finland has introduced Internet telephony services for corporate networks.

Because of this prodigious voice traffic, high tariffs on international calls, and the proliferation of call centers in many enterprises, the convergence of voice and data over network infrastructures is a compelling prospect throughout Europe. This April 3Com's European User Conference, Networks3, focused on convergence with sessions devoted to such topics as how to build a convergence-ready infrastructure and how voice-over-IP is changing business.

Digital wireless connectivity isn't the only area of networking technology where European countries have outpaced the U.S. As a matter of fact, the user-friendly Web browser software that opened up the Internet to the average person was originally developed at CERN's European Laboratory for Particle Physics in Switzerland. Though the Internet is often regarded as chiefly an American phenomenon, connections are at least as widespread in several European countries. According to a November 1998 *Wired* magazine article comparing the penetration of computer technology around the world, "Throughout the Baltic nations and along the North Sea, there are more Internet hosts per person than almost anywhere on the planet....Monaco is the world's second smallest nation (less than one square mile) but arguably the most wired."

Parts of Western Europe also lead the U.S. in implementation of high-speed technologies like ISDN and xDSL to the home. This is especially important as telecommuting becomes ever more popular as a way to reduce time-consuming travel and mitigate the high cost of office space in urban areas. Electronically extended offices and workgroups are gaining a foothold throughout the region.

Doing business on a wired continent. In Europe small to mid-size enterprises (SMEs) employ 60 percent of the workforce and contribute 50 percent of the GDP. Like their larger corporate cohorts, SMEs are building new networks or upgrading existing systems to take advantage of the latest business applications and strategies. This is necessary to cope with a more competitive, multinational business environment. But it also puts local companies in a better position to reach customers and cultivate business relationships.

Frances Cairncross of *The Economist* writes in her book *The Death of Distance* that the electronic marketplace has two seemingly contradictory effects: it tends to promote greater uniformity of brands, while at the same time allowing smaller companies to cater to local tastes. “Overall, advertisers will have many more choices of outlets for advertising — but the audiences in each outlet will be more specialized. Advertisers will have more potential for global branding — but markets will remain culturally distinct,” Cairncross predicts.

3Com’s Nigel Oakley concurs. “Brands are definitely one of the most important factors in marketing today,” he says. “With the Web, it’s easier to address audiences in their own language, using messages and symbols that resonate within their own cultural milieu.”

Oakley inventories a few other network-related issues that enterprises — including 3Com — must take into account when doing business in Europe:

- The multitude of languages makes network support more difficult and costly in Europe than elsewhere. Local partners are especially crucial in providing local assistance.
- Inconsistent standards can hinder product development and implementation, though international agreements are helping to ease this problem. Oakley observes that “we used to have to test a WAN product independently with every mainstream carrier in every country before we could sell it. There are now agreements that allow us to test a

product once and achieve standardization for a number of other regions at the same time.”

- Security requirements can also differ among countries. “Certain levels of encryption are allowed or restricted depending on which region we’re operating in,” says Oakley. Encryption and authentication are some of the many network concerns that the EU is currently addressing.
- Constant technological change is a dilemma for network business partners as well as customers. As Oakley puts it, “One of the most serious problems the IT industry faces is ensuring that everyone who is selling or reselling equipment is on the leading edge of understanding the solutions and what they can do. It’s a significant challenge for 3Com keeping our hundreds of partners up to speed.”

Technology training. One answer to the problem of making sure partners are current is regular training, exemplified by 3Com’s University for Partners program. An offshoot of the 3Com University technical training courses that the company offers employees, 3Com University for Partners is a two-day conclave that brings some 1,500 partners together from all over Europe to learn about new technologies and systems solutions. For the convenience of participants, parallel sessions are conducted in four languages.

3Com also offers certification to individual network professionals in Europe through the Master of Network Science (MNS) Credential Programme. The MNS course modules combine instructor-led and online training in preparation for assessment tests and, ultimately, a hands-on practical exam at 3Com labs in Hemel Hempstead, U.K. Available worldwide, MNS credentialing is described at www.3com.com/mns/.

Scandinavia: Banishing distance

The countries that make up 3Com Europe’s Nordic Region — Denmark, Finland, Iceland, Norway, and Sweden — have a total population of about 25 million. Apart from cultural and linguistic differences, what most of these nations have in common is the vast

distances that people must overcome to interact with their countrymen or, in the case of Iceland and those residing above the Arctic Circle, to communicate outside their local communities. Consider that if Sweden and Norway were pivoted around to the south, their upper borders would extend all the way to Italy.

Overcoming distance is probably a key reason why Scandinavians are among the most connected people in the world. Nokia in Finland and Ericsson in Sweden are only the most prominent exponents of telecommunications innovation in this region. Magnus Melander, a 3Com regional sales manager based in Stockholm, notes that high-speed networking for everyone, including home PC users, is a hot topic across the Nordic region. He describes what he considers the best way to provide high-bandwidth network connections to small businesses and consumers: focusing on services rather than products.

“Our customers don’t want to buy all this sophisticated networking equipment,” Melander explains. “The organizations in the best position to provide high-speed links are the telcos. In other words, the idea is to help the telcos nurture existing relationships by offering technologies like ISDN, ADSL, Gigabit Ethernet, and ATM to enterprises and individual consumers.”

A host of carriers vie for customers’ business in the Nordic countries, acting as systems integrators and ISPs as well as traditional telephone service providers. And this service can be quite personal. In Sweden, for example, many towns and villages have their own provider for local calls. “Right now, it’s about bandwidth to the home,” Melander says. “We’re very much involved in helping telcos provide high-speed networking to consumers. Currently, that includes ADSL and even Ethernet connections.”

At the enterprise backbone level, Melander sees a groundswell that is moving large enterprises to Gigabit Ethernet. This may presage a similar trend in other European countries, since Scandinavia has often been a technology bellwether. “Two to three years ago our larger projects were 50-percent ATM based,” he declares. “Now it’s 15 to 20

percent ATM, with Gigabit Ethernet making up the difference.” Melander ascribes the surge in Gigabit Ethernet installations to greater familiarity with Ethernet technology on the part of IS organizations as well as easier migration.

Germany: Unification in microcosm

The reunification of Germany following the collapse of communism in central Europe somewhat mirrors European unification on a smaller scale. Though the language remained the same, the cultures and economies had diverged on either side of the Wall. German political and monetary unification occurred in 1990, after which the economies of the East and West merged. Initially it was an unequal merger, however. The East received more than US\$1 trillion in public and private funds from the West between 1990 and 1995.

“In Germany business success depends very much on your name and reputation,” observes Regional Sales Manager Thomas Peters. “It’s important to be close to the customer. That’s why we maintain offices in Duesseldorf, Berlin, Wiesbaden, Hamburg, and Stuttgart in addition to our main office in Munich.”

With this emphasis on close relationships, it’s not surprising that 3Com business partner Siemens AG also became one of 3Com’s largest German customers. Siemens Business Services chose 3Com Germany to be project manager and supplier for a major Ethernet-to-switched Ethernet migration involving four locations and 50,000 users. Technology migrations are rampant among other major 3Com enterprise customers in Germany as well, with banking firm Quelle and pharmaceutical company Knoll AG moving from their legacy mainframe and Token Ring LAN environments to Gigabit Ethernet and ATM/Ethernet infrastructures, respectively. (See the sidebar about Knoll on page xx.)

Peters remarks that in contrast to enterprise data networks, telecommunications providers and carriers in Germany “live with a lot of local standards. That’s why it has been very important for us to provide ISDN products that support Euro ISDN and the X.75 protocol. Broadband cable modems also use a different standard in Europe than in the

U.S. But with the new DOCSYS standard, we have an opportunity to offer modems that adhere to a universal standard.”

France: From Minitel to the Internet

France was one of the first countries to embrace digital communications in the 1980s with the development of the Minitel system. But for a time the country resisted the Internet. Now France Telecom is offering ISP services — and realizing six times the revenues that Minitel contributed. Many other companies have also entered the French market with Internet, cable, and long distance voice services.

“France has caught up and now we’re accelerating very fast,” says 3Com regional sales manager Jehan Coquebert de Neuville. “The government ministries are now talking about the Internet not only as a way to communication, but also as a means of social integration.

“The government has been encouraging privatization,” Coquebert de Neuville adds. “Now capital gains are taxed at a higher rate. So when a company has money in its coffers, it is pushed to invest, which ultimately spurs entrepreneurship.”

Coquebert de Neuville expects e-commerce to fuel a business boom in companies of all sizes, but particularly in the SME and consumer sectors. In addition, large enterprises are leveraging their networking capabilities to support global activities. For instance, 3Com customer Michelin uses its network to oversee operations in 87 countries. And French retail stores have begun to enter markets in Latin America.

Concerning overall networking strategy, “we believe that, more and more, the power needs to start at the edge of the network and proceed to the backbone and the core, and not the reverse, Coquebert de Neuville says. “From-the-core-out as a strategy is really like the old mainframe approach. But a from-the-edge-in infrastructure respects the individual user and allows the enterprise to more easily adopt the architecture to users’ needs.”

United Kingdom: The rise of the telecottage

The U.K. is comparatively advanced with regard to deregulation of telecommunications carriers and the variety of options in the marketplace. Dominant carriers British Telecom and Cable & Wireless have been joined by a number of competitors. Britain's approach to deregulation, applied by the Oftel telephone regulator, is to impose additional obligations on the larger carriers rather than to split them up, as has been done in the U.S.

Telecommuting — often referred to as teleworking in the U.K. — is a strong trend in the British Isles as well as continent-wide. The U.K. began to embrace telecommuting as far back as the late 1980s, when the Confederation of British Industry organized a large conference in London devoted to teleworking as “an ideas whose time has come.”

Networking technology makes it possible for employees to turn their homes into “telecottages” linked to decentralized offices and workgroups. This helps relieve traffic congestion and gives the teleworkers more time with their families. Business travel costs are also reduced by networked applications like videoconferencing and document sharing.

Because effective telecommuting is contingent on high-speed links to the home, the broad availability of ISDN and other high-bandwidth services in the U.K. is a distinct advantage. What's more, mobile telephones based on the digital GSM standard means that business travelers can make connections to corporate networks from virtually anywhere in Europe.

A parallel trend is the growing popularity of handheld computing. Nigel Oakley, who is based near London, observes that “wherever I go and whomever I talk to, it seems they have a PalmPilot or Palm III organizer in hand.”

The New Europe

Economic expansion and the search for new markets in Europe and on other continents continues to motivated European enterprises to extend operations beyond their traditional turf. And they're aggressively leveraging network technology to make it happen.

Of course, much remains to be done in forging the links to a unified Europe. On the subject of a common Internet infrastructure, Vice-president of 3Com Europe Steve Rowley has warned: "The issues we face in Europe are so large and complex that a single company cannot solve them. The complexities of the geographical constraints make the task even harder in Europe than in the U.S., and the pace of technological change means that the legislators are always lagging behind."

But the Old Europe of closed borders and cloistered markets is clearly a thing of the past. The New Europe will most assuredly be a highly networked Europe.