Spotlight on: T

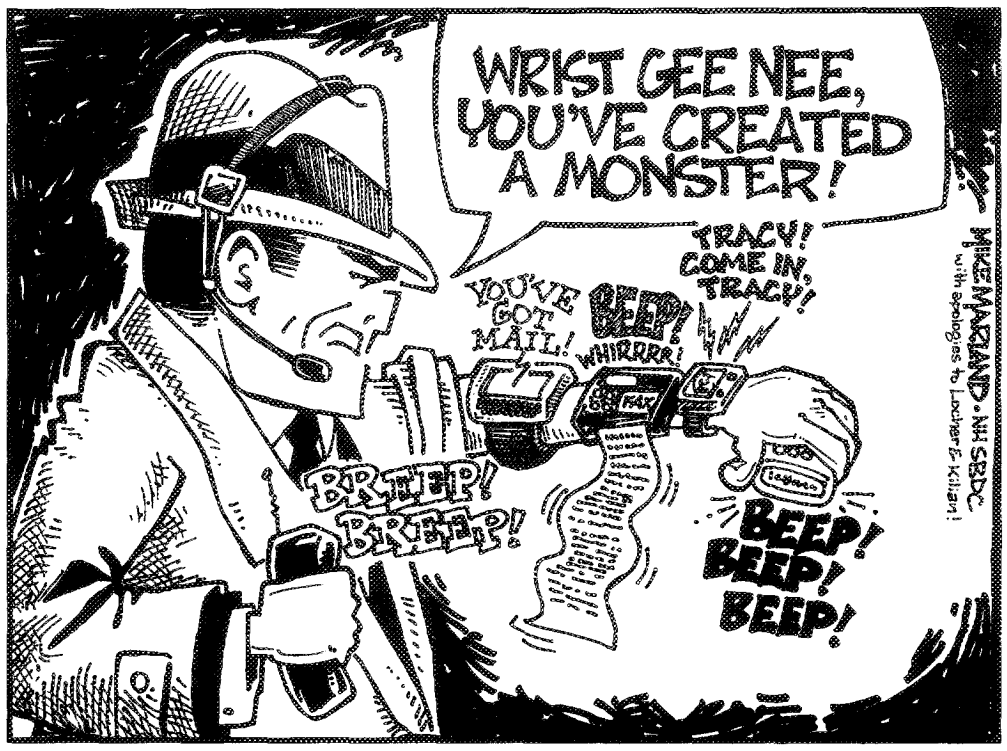
Telecommunications: what's new, what's now

People will continue to seek new ways to manage such an important aspect of doing business today

By Elizabeth Ward

Telecommunications services and products are going through the same kind of rapid change and development experienced in the PC industry a year or two ago. In large part, these changes are driven by the soaring popularity of the Internet and the increased capabilities of computers — a need for speed has forced the issue of upgraded telephone wires to the fore, and the popularity of e-mail and Web-based information have created a demand for connection options.

Some have claimed that we are approaching communication overload, but even if that is true — especially if it is true — businesses and individuals will continue to seek new ways to manage this very important aspect of doing business today.



Choosing a telephone service provider

The New Hampshire Public Utilities Commission Web site has a 14-page document listing the telephone companies authorized to provide service in New Hampshire. While many of these companies don't appear to be active in the state, almost everyone has received a mind-numbing array of offers, especially from some of the larger long-distance service providers.

How do you choose telephone service? The Federal Communications Commission Web site offers some good advice:

- Analyze your calling patterns. When and where you call will form the basis for a comparison between services. Plans are usually day/night/weekend or peak/off-peak. Understand how those are defined by various plans.
- Check for hidden costs. The price per minute often isn't the only fee. Some services charge monthly fees or surcharges. Minimum charges can be expensive, too, if you make a lot of short calls or leave messages frequently. Watch out for rates that escalate sharply after a certain number of minutes.
- Ask your present providers about promotions, deals or new services they may be offering. Unfortunately, a company's customers are often the last to know about special rates or calling plans.
- Check for restrictions. Some special rates and plans are limited to certain times of the day or days of the week. Do the deals apply to every call or just those you make in-state or out-of-state? When does the deal expire?
- Compare your options, using apples and apples as much as possible. Software is available; for example CallSense, $9.95, at www.callsense.com. Web sites with rate comparison calculators include www.ibell-tolls.com and www.trac.org.
- You should investigate your long-distance options at least once a year, more often if your business has high usage.

Should you cut the cord?

A growing number of people nationwide — about 5 percent of wireless customers — are using their cells phones exclusively. Mobile phones offer certain advantages, and the trend toward lower prices and plan variety has caused many to reach the point where convenience and affordability converge. One of the last barriers — being charged for incoming calls — may soon be addressed, as it has been in Europe.

Advantages of going wireless: If you already use wireless services, you are probably the best candidate to complete the transition. Many people find that they use their cellular phone at home; in fact, the percentage that do has doubled in the past two years, according to a study by The Yankee Group. Callers often will use your cell number because they assume that you are near your phone and it saves them having to call several numbers to find you. You also won't have to check multiple voice mails.

Wireless offers you the option of giving out only one telephone number. If expecting an important call, you are not tied to the house or office. Most packages come with voice mail, caller ID, call forwarding and call waiting, so you get the convenience of those services without extra fees. In order to save the most, make sure your service package gives you sufficient coverage and time.

Disadvantages of going wireless: Next to being charged for incoming calls, the most serious drawback of using wireless for your primary phone is that cell phone numbers are not listed in telephone directories. If you own a business, that could be a major problem. If you talk a lot, the cost could be prohibitive, too. Be sure the plan you choose meets your needs. And make sure that the phone works in all the places you are going to use it — like most of the rooms in your home. Reception can be poor in basements and in certain interior rooms, depending on construction. You will still need telephone service for a modem, too.

Unified messaging: one box for all your mail

You're out of town and you need to check your messages. What do you do? Call your office for voice mails, then log on to the Internet to check your e-mail, assuming you have access to a computer. You find out an important fax came in, and you have to figure out how to get it forwarded to you. Unified messaging is a service that uses new technology to address this situation. It lets you access voice mail, e-mail and faxes from a telephone and from a Web browser, all in one mailbox.

How it works: A unified messaging service, free to $50 per month, sets you up with a telephone number, either an 800 or a local number, which operates as your voice and fax number, and an e-mail address. You can call your account to retrieve voice, e-mail and faxes, or you can log on to the service provider's Web site to read e-mail and faxes and listen to voice mail. You also can reply by telephone to e-mails and faxes through speech-to-text software.

Services vary in the features they offer, but most offer call forwarding, so telephone calls can follow you, and e-mail forwarding, so your existing e-mail accounts can funnel into the unified account. A key feature for cell phone users is the ability to use voice commands rather than the keypad to navigate the mailbox. Some don't offer faxing, such as the free service just launched by Yahoo! Mail. A PC Magazine review (July 1999) rated Portico, Webley and Jfax.com as services worth checking into. Those are just three of dozens of independent services springing up.

Industry analysts believe that after a slow start, unified messaging is about to take off. Ovum, an independent research company, predicts that unified messaging mailboxes worldwide will grow from 850,000 in 1997 to 95 million in 2003. The International Engineering Consortium says that the service, now used mainly by companies with 500 to 3,000 employees, will sweep the small business and household segment by 2003. This market penetration will be driven by the increasing convergence of traditional and IP telephony, networks and applications.

The first unified messaging services were more the linking of separate platforms — voice and e-mail — rather than the true integration that is occurring now. Yahoo!'s entrance into the market signals the beginning of large-scale deployment of the technology. Look for offerings from dominant portals, Internet service▸

Telecommunications made easier: Web resource provides the key

By Deborah A. Osgood

New Hampshire is rich with a telecommunications infrastructure for all business sizes and needs. With the right telecommunication system, businesses can take full advantage of all kinds of productivity-enhancing telecommunication products and services. This includes cost-effective telephone systems, efficient access to the Internet and robust local area networks, just to name a few. The key for success in taking advantage of these technologies in the new economy is knowing what resources exist, how to choose between them and where to go to access them.

The Knowledge Institute unlocks the door to these otherwise overwhelming and often confusing choices. In collaboration with Verizon, business professionals can now make more informed decisions about their telecommunication needs at the Business Utility Zone Gateway (www.BUZGate.org.), an Internet-based resource community for small businesses. Upon entering the community, visitors may select from a variety of free and low-cost business assistance services. For telecommunications, click on the BUZ Experts button and then select telecom. This path will open up a Web page that presents information about what telecommunication infrastructures exist, where they are available and whom to contact for product and/or service delivery in the state of New Hampshire.

As a further self-learning tool, users may click on a telecom matrix option, which will open up a Web page that provides a breakdown of telecommunication options by type of service and technology, features and benefits, pros and cons and system requirements. Types of telecom services listed include phone lines, Internet access, Web hosting, phone systems and various types of networking options. Service options are further broken down to include such technologies as analogue or digital, ISDN or broadband, dial-up, DSL or cable/modem Internet access and local area networking or wide area networking.

For those unfamiliar with some of the telecommunications terminology, drop-down menus are available to provide user-friendly definitions simply by clicking on a specific word. A final and important component in the matrix is direct access linkages to the various resource providers, either by e-mail or to a deep link within a resource provider's Web site to learn more about a specific product or service. Other communication venues provided for contacting resource providers include "snail mail" or by telephone.

In staying competitive in today's rapidly changing business environment, businesses must avail themselves of labor- and business-enhancing technologies. Unfortunately, all too often these technologies are confusingly complex and so extremely difficult to understand, evaluate and use. BUZGate helps to make it possible to achieve the essential benefits inherent in these products and services. ■

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TELECOMMUNICATIONS

providers, and telephone companies.

Can one gadget do it all? The mating of wireless devices and cell phones

How far can gadgets go in enabling the most mundane acts of daily life? Coca-Cola has just inked a deal to install modems in vending machines so consumers can "dial a Coke" with their cell phones. Coca-Cola and other companies are betting that cell phones are becoming standard equipment, and people will be willing to use them for more than making phone calls. Some believe the technology will leapfrog the debit-like smart card. IDC, a research group, predicts that cell phone subscribers worldwide will reach 500 million by 2002, and cell phone sales will exceed PC sales by 2004.

Checking e-mail and accessing the Web from anywhere has become indispensable for some people, and again companies are betting that this need will grow. Through unified messaging, a cell phone can check e-mail and get some Web content, but its tiny screen is inadequate for viewing much text. Personal digital assistants (PDAs) provide wireless access to the Internet, but thus far have often been slow, expensive and able to view only selected Web content. Attached modems can remedy some of this, but they have been bulky and expensive. Creators of wireless devices face several challenges: providing adequate display screens without adding too much bulk or weight; the mishmash of often incompatible and spotty wireless services; slow data transmission rates; and Web viewing protocols that are incompatible with HTML, the language used for most Web pages.

New devices and technologies that address these issues are forthcoming, from both cell phone and PDA equipment providers:

- The Sprint TP3000 cell phone can receive and display e-mail — on a decent-sized, clear screen — and has a calendar, address book and "to do" list built in. Icons and a stylus, like those on Palm Pilots, are used to navigate.
- Visor, by Handspring, is a PDA with an expansion slot to accommodate a wireless modem or a phone attachment, both of which attach nicely to the device.

Ricochet is a proprietary wireless system that can deliver up to 128-kbps. So far it is available only in select cities, as deployment involves hanging equipment from telephone poles. Ricochet modems are planned for the Visor.

- Bluetooth is short-range wireless technology. It allows information sharing between cell phones, PDAs and computers and replaces cable connections.

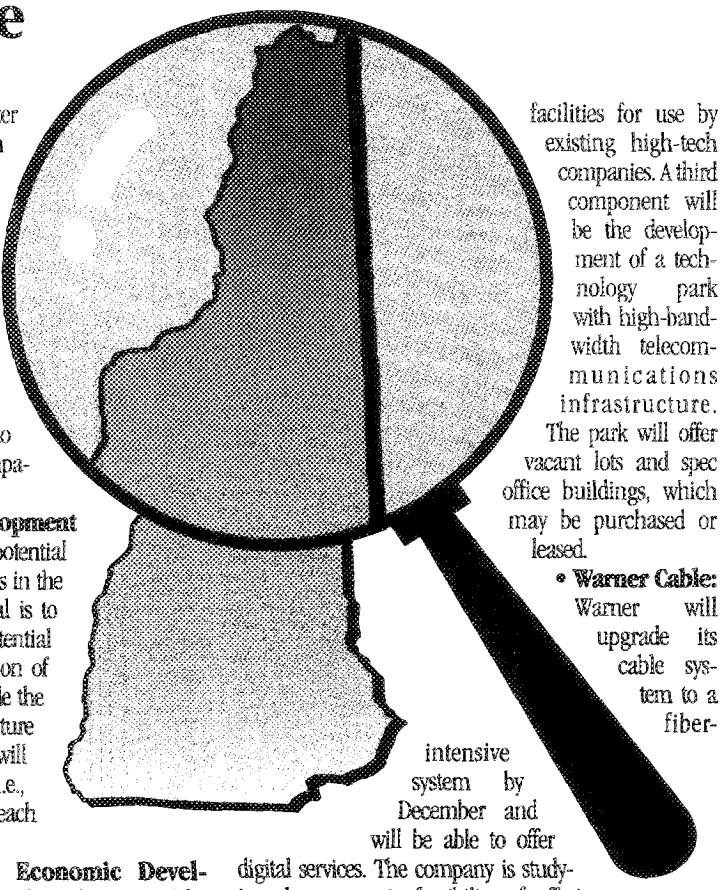
Optional services can make life easier

Telephone service has come a long way over the past few years as providers have developed an array of services to meet business needs. A look at Verizon's Web site reveals dozens of optional add-ons that can make managing business communications easier.

- Centrex: This "out-of-house" switchboard system resides in the company's central office, so it has a lot of built-in flexibility. Centrex transforms several separate lines into a managed group of lines that can be individually customized. Features include automatic callback, hunting, call forwarding, call hold and park, intercom and conferencing, hot line service and music on hold. It can be combined with ISDN (integrated services digital network) services. Several packages are available.
- Business call answering: Answering machines can lose power, get filled up or go on the fritz. Business call answering provides a voice mailbox within the Verizon system. You get automatic message recording when your phone is busy or not answered, up to 40 two-minute messages, security code protection and remote access.
- Broadcast fax: Anyone who faxes to a long list of recipients can use this service. Broadcast fax sends a document simultaneously to as many as 10,000 locations. Lists are created and edited through a touch-tone phone.
- Enhanced fax mailbox: This service gives you a mailbox for receiving, storing and broadcasting faxes.
- Fax on demand: Provides 24-hour access to selected documents with fax on demand service.
- Call forwarding and Ultra Forward® service: Do you ever tie up your only line while you're on the Internet? Have your calls forwarded to your mobile phone with call forwarding. Or if you're on the move, have your calls follow you from location to location.
- Distinctive ring: Not quite ready for that second line? With distinctive ring, you can have another number on the same line. It works well for fax machines — the distinctive ring warns you that a fax is coming in and your machine can be set to pick it up immediately. It's also handy if you have two businesses or need to separate calls somehow. ■

Telecommunications infrastructure development in northern New Hampshire

By Mark Koprowski
SBDC/USDA-Rural Development



Many consider telecommunications infrastructure development to be similar and as important to the economy as the development of the interstate highway system was in the 1950s. The difference is that the federal government was the main player in creating interstate highways, and profit and demand was not a consideration. Telecommunications development relies on consumer demand. The development will not happen if there is not a corresponding demand that creates enough revenue to justify the private sector investment.

This scenario does not bode well for rural markets, due to its higher infrastructure cost per user. In order to overcome this barrier and facilitate telecommunication infrastructure development in the North Country, several groups and businesses have become involved with the following projects:

- **Adelphia Cable:** Adelphia will be upgrading its northern New Hampshire cable system to a fiber-intensive system over the next 12 to 24 months. This will allow the company to expand the services it offers. Planned services are: 150-channel digital television and cable modem Internet access. The cable modem system will have the potential of providing full time 1.5 megabits/second Internet access. The Internet cost will be 39.95/month. There will be a connection fee, and computers will need a network interface card. Adelphia currently offers long-distance telephone service at 8 cents/minute, with no monthly fee. In the future, it plans to offer local telephone service.
- **Business Enterprise Development Council:** BEDCO is studying the feasibility of developing an Information Technology Training and Outsourcing Center. The center would provide high-bandwidth telecommunications capabilities and worker training. The project will identify out-of-the-area companies with employee needs who have products or services that could be produced in an off-site location via telecommuting. Training for North Country workers would be provided to ensure that the needs of the companies are being met.
- **Coos Economic Development Council:** CEDC is studying the potential demand for telecommunications in the North Country. The project goal is to develop a map of users and potential users to facilitate the aggregation of demand, which will then provide the economic catalyst for infrastructure development. The study also will determine what form of access (i.e., wireless, cable) is best suited for each region.
- **Mount Washington Economic Development Council:** MWEDC is studying the potential for the development of a high-technology business park. The project has three components, each being reliant on the other. One component is the building of a 12,500-square-foot resource center and incubator. This facility will offer high-bandwidth telecommunication capabilities, low-cost office space and shared staffing, when practical. Another component is to build a 12,500-square-foot learning center. This facility will house a coalition of educational providers who will train workers to match company needs. The center also will provide conference facilities for use by existing high-tech companies. A third component will be the development of a technology park with high-bandwidth telecommunications infrastructure. The park will offer vacant lots and spec office buildings, which may be purchased or leased.
- **Warner Cable:** Warner will upgrade its cable system to a fiber-intensive system by December and will be able to offer digital services. The company is studying the economic feasibility of offering high-speed data transfer services.

Telecommunications infrastructure development in northern New Hampshire can be compared to a running race. Currently, the providers are warming up and developing their strategy as they wait for the audience to arrive. Once the audience arrives, it will be an exciting competition, as the providers vie for market share in television, phone, Internet and very possibly radio services. ■

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