

Manager's Message

By *Evan Hass, GM*

Last weekend I curled up in front of the fireplace - TV remote in one hand and a *Telecomm* magazine in the other. It wasn't long before my head began to spin trying to sort out the 'alphabet soup' of networks and technologies.

You've seen the stories - experts debating the future of VOIP and LNP; MPLS and GigE; VoD and PPV; Next Gen SONET or MSPP; Is DWDM for me? ... and I could go on and on.

The evolution of the telecommunications network is a fascinating story. Some of us can still remember the open wire toll leads - poles with cross arms marching across the prairie holding high the wire secured to glass insulators.

As I look at this issue of *Business Connections* I think of how well positioned DCN is for evolving to the network of the future. The IP Services featured this month are the basis for creating a statewide IP network served on our redundant fiber rings connected to the Web at two gateways.

DCN isn't resting on our SONET rings - we're building for future network designs with our customers in mind.

Hope you're staying out of the cold - we'll keep the network warm and working.

DCN services in a continual transition mode

Way back in the early days of broadband telecommunications, the mid 90s, the member companies that created Dakota Carrier Network had to make a number of critical decisions regarding the system they wanted to build. They elected to build a fiber optic network consisting of two fiber optic rings (called SONET, which stands for Synchronous Optical Network) with Nortel OC-48 SONET equipment operating at 2.488 Gbps (gigabytes per second) used on the backbone network.

"When we turned up the SONET rings we were selling point-to-point high-speed broadband service to our customers," recalls Kevin Kaeding, sales manager for Dakota Carrier Network since 1998. "In response to a request for proposal from the State of North Dakota we added ATM (Asynchronous Transfer Mode) and frame relay packet services, which is another way to serve the needs of our state government customers and other business's Wide Area Networks (WANS)."

According to Kaeding, the ATM/frame relay technology provides the same speed as point-to-point circuits.

"Some organizations like the capabilities of point-to-point circuits for their networks, but many customers also prefer the scalability of the ATM/Frame Relay circuits for their network designs," Kaeding says. "Because of the size of our ATM backbone, our ATM/



Kevin Kaeding, DCN sales manager

frame relay customers don't run into speed restrictions that affect other providers of WAN services in our state."

The next major step for DCN was adding an Internet backbone on top of the fiber optic system for member companies, corporate customers and Internet Service Providers (ISPs) in 2003. The new service is now being marketed to organizations with great success ... and the future looks even more promising.

"We're evaluating vendors right now for our new migration path to DWDM (Digital Wave Division Multiplexing)," he says. "After completing this addition we will be able to provide bandwidth capabilities that equal as much as 128 OC-48 circuits, using the same frequency on the existing DCN network. This technology will enable DCN customers to utilize very large scale Ethernet capabilities.."

"Ultimately, customer needs and requests are driving us to ever-greater bandwidth offerings," he explains. "We are here for only one reason: to provide value for customers with just a single telephone call."

BCBSND and DCN: 100% connected

"We are very impressed with the design of their network and the 'home-style' service we receive. You call other carrier providers and often reach someone who has little or no idea of how your system is connected. With Dakota Carrier Network, we can talk to the same person every time. After our flood in 2000, we added space, moved offices and replaced contracts as we upgraded our internal systems. The installation went very smooth with DCN. To date we have not experienced any problems or errors on our DCN circuits. We are sold on the service, price and reliability of the network. The network availability is far better than the industry benchmark of 99.999%. Dakota Carrier Network is more reliable than any other carrier we use. We have put a lot of effort into disaster recovery the last few years because of the flood in 2000. DCN has helped us design a more fault tolerant, disaster resilient network. With this level of service support and system reliability, the majority of our North Dakota traffic is over DCN circuits."

Danny Mastre,
Project Leader – Technical
Support (Mainframe and
Voice/data networks)
Employed by BCBSND
for 19 years



*Danny Mastre, Project Leader – Technical Support
(Mainframe and Voice/data networks)*

Case Study: Blue Cross Blue Shield of North Dakota

Headquarters: Fargo, ND
Blue Cross Blue Shield of North Dakota (BCBSND) began over 60 years ago as two separate pre-paid health care plans for hospital and physician services. The two companies merged in 1986 and converted to a nonprofit mutual insurance company in 1998, with the official corporate name becoming Noridian Mutual Insurance Company. The company still does business in North Dakota as Blue Cross Blue Shield of North Dakota, with over 440,000 people receiving health care coverage based on a managed care concept.

Senior Manager:

Michael Unhjem, President & CEO
Other major facility locations:
BCBSND has sales and service offices in nine North Dakota cities, all connected through the Dakota Carrier Network system. The company has offices in North Dakota, Colorado,

Iowa, Minnesota, Washington, Oregon, Arizona and Hawaii through its subsidiary, Noridian Administration Services LLC (NAS). NAS is a regional claims contractor for the federal government's Medicare program, processing Medicare claims for North Dakota, Minnesota, South Dakota, Iowa, Wyoming, Colorado, Alaska, Oregon, Washington, Nevada, Arizona and Hawaii.

Number of employees: 2,000 (app.) as of December 1, 2003

History with DCN: Noridian established a business relationship with DCN in December, 2000.

DCN Services: Numerous T1 (10+) circuits for voice and data.

Network Applications: The DCN network connects BCBSND service centers, marketing offices and NAS Medicare offices to the mainframe computer and file storage systems in Fargo.

Gateway to the World Wide Web

With more businesses and organizations using the World Wide Web for critical communications, the question often arises: How can we use our Wide Area Network in conjunction with the Internet?

Seth Arndorfer, sales representative for DCN offers an explanation.

"If your organization has a frame relay or ATM network with multiple points coming in to a common server, you could bring in a separate T1 line or just use the DCN network to carry the traffic," he says.

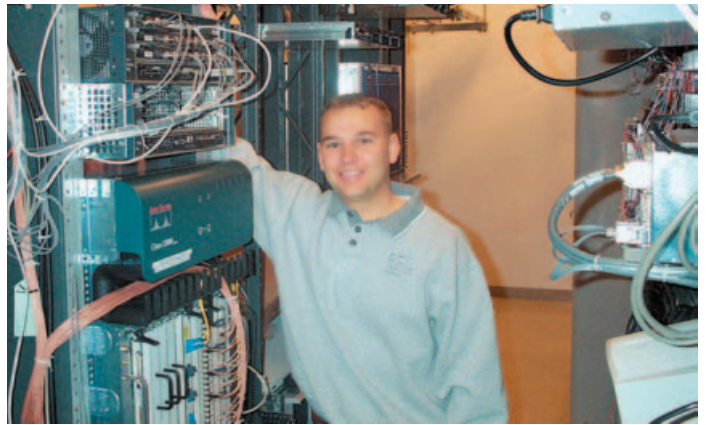
Arndorfer notes there are security issues that need to be addressed in keeping the WAN separate from the Internet.

"With DCN technology you can essentially run two separate networks over the same connections with a new router and technology that includes firewalls behind the router," he says.

The customer can maintain the same level of security as they would with a separate T1 to the Internet, but at significant savings.

Compared to a DSL modem or cable modem, Arndorfer says consistency of speed and 24/7 network monitoring are major advantages.

"Our commercial customers are learning about this service and getting connected."



Jesse Heck, NOC technician, Bismarck

Internet connection adds value

So, how does an organization like Dakota Carrier Network install and bring on line a valuable service like a high-speed Internet gateway? Well, first you conduct lots of research and then invest in hardware and software that would sell at retail prices approaching \$750,000 ... and that's just the beginning.

"It has to meet customer requirements for reliability and 24/7 service on demand for Internet-based business connections," asserts Jesse Heck, Network Operations Center (NOC) technician in Bismarck.

"We have a connection to a Tier 1 provider at Bismarck and another Tier 1 connection at Fargo ... both of them connecting to the world. It's sort of a triangle. If one Tier 1 provider fails, the other Tier 1 provider will pick up the additional load. Both of our 12012 GSR Cisco routers contain the full Internet routing table for redundancy. They bring in and aggregate most of the bandwidth for North Dakota."

This redundancy is backed up by emergency power built into the routers (as well as a backup diesel generator at the NOC). Heck observes that the line cards in the routers are also capable of passing traffic independent of each other, which includes redundancy even if a processor card fails.

After three years with Dakota Carrier Network and a previous career with an Internet-based company in Bismarck,

Heck has been involved with many aspects of assembling the hardware and software associated with the Internet gateway. He, as much as any DCN technician, fully appreciates the potential value of the system for organizations.

"We're working on peering arrangements with Montana right now," he says. "The equipment for peering with SDN in South Dakota is already installed, as well as hardware for Montana. We're sharing routes with BTI in Bismarck, which enables us to keep the traffic within the state to preserve the speeds, as well as bandwidth going out to the Internet. The goal was to aggregate all of North Dakota's bandwidth either alone or with peering arrangements. It adds another dimension to the network and ties in our ATM network for full integration.

For the technically inclined, Heck explains that the Internet gateway includes an OC3 connection between the two GSR routers, over DCN's ATM network. Then, a 7200 series Cisco router in Bismarck connects two DS3 lines to Fargo and Bismarck as an aggregation router.

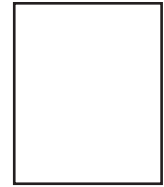
"Our customers are learning about this service and getting connected," he says. "Part of our job is to make certain that our upgrades don't negatively impact our customers' service. We want to make certain they get real value from the new service."



Dakota Carrier Network

Connecting Business ... Creating Value

112 Roberts Street
Fargo, ND 58103
800.814.3333
www.dakotacarrier.com



Gaining the DCN advantage & value

Dakota Carrier Network is pleased to welcome the following new customers and those who are renewing their service agreements with DCN:

NEW CUSTOMERS

- Cass Clay Creamery, Inc.
- Vision Systems
- SEI - IT
- Gate City Bank
- RDO Equipment
- Wiest Truckline
- Napoleon Future Fund, Inc.
- Citizens Community Credit Union
- Farm Credit Services - Mandan
- SMP Health Systems

RENEWING CUSTOMERS

- American Crystal Sugar Co.
- Dynamics Marketing

Seth Arndorfer serves the West



Seth Arndorfer, DCN marketing specialist

There is one common denominator among the sales and technical staff at Dakota Carrier Network: an exceptional depth and breadth of technology skills and understanding.

Seth Arndorfer, marketing specialist for western North Dakota, exemplifies this unique and valuable asset, with several years of experience at Dickinson's Consolidated Telephone before joining DCN in 2002. What Arndorfer learned about local phone service, business data services over Wide Area Networks (WANs) and the unique aspects of Local Area Networks (LANs), he has skillfully applied to his position in the Bismarck office of Dakota Carrier Network.

"The services we provide and the needs of our customers have changed so much in the last three years," says

Arndorfer, a native of Hettinger (ND). "Traffic over our broadband network has evolved dramatically, from about 95 percent data to about 70 percent data ... the rest is becoming voice and video."

Arndorfer is well-versed on the intricate technologies being applied to business applications, including the needs for reliability and service, which is "priority number one for DCN," he says.

"Links to other states are also becoming more important all the time," Arndorfer explains. "Organizations with headquarters in the Twin Cities or somewhere else can connect at high speed with North Dakota branches and our financial institutions can link directly to snowbirds in the south over our network."

He is particularly proud of the DCN ability to essentially permit clients to run two separate networks over the same connections, like a WAN and the Internet, with a new router and current technology that runs firewalls behind the router: "That allows them to maintain the same security level as they could achieve with a separate T-1 to the Internet, but at a significant savings."

The flexibility of DCN services gives Arndorfer a lot to offer his clients.