

# Thinking fat pays off

Bulk up your business's network for faster technology. **By William Beldham**

**N**o, it's not another fad diet. Thinking fat is about making your network run faster and more effectively, gaining a competitive advantage in the process. Fatter networks run faster.

Because the technologies and cost models historically have been very different, LAN, WAN and telecommunications networks have evolved along different paths. Having a separate network for voice, data and video had its advantages. Interference was not a problem.

On the other hand, manually correlating data, voice and video has held back business applications. Merging voice and data networks lets you know every detail about customers and suppliers no matter who picks up the call. You can put your face in front of a group meeting in a conference room while traveling to a remote office by merging voice and video.

Combined technology lets you roll out new competitive information to the mobile sales force by creating a conference call on in-house equipment and ringing every cell phone simultaneously.

Typically, convergence has happened by implementing expensive, proprietary gateway devices to make networks talk to each other. But today, it is not just about building standards-based gateways but managing a new network. This new network has demands, priorities and goals that only resemble the original LAN, WAN and telecommunication networks they sprang from. The new goals can be summed up in the phrase "quality of service" (QoS).

## What is fast?

When local area networks began to grow and proliferate, routers, bridges and switches were added to manage collision domains because collisions slow down traffic. You don't have to travel Pittsburgh's Parkway East during morning rush to figure that out. The number of collisions an LAN could tolerate was simply measured in latency.

If it took several seconds to download that spreadsheet from the network drive, it was time to isolate the traffic. As network devices got faster, we tolerated more congestion because the latency issue did not



rear its ugly head. Data was reassembled at the destination without notice.

WAN traffic was managed differently. The bandwidth was expensive, so technology did its best to pre-emptively avoid data collisions by making WAN traffic travel in the time domain. All data, whether telephone calls or computer data, marched across the time domain multiplexed (TDM) WAN, arriving in order and secure.

The number of simultaneous voice conversations across a WAN connection was a simple mathematical calculation. Each voice conversation would occupy 56 Kbps of TDM bandwidth.

Today, the addition of time-sensitive data, such as voice and video, in a converged network means the retransmitting and reassembling (buffering) of data packets in an LAN must be minimized by reducing or eliminating network congestion.

By prioritizing time-sensitive traffic on the network, we can hear and see the quality that we have come to expect from dedicated voice and video networks. Setting the quality levels for specific types of network traffic is done by managing QoS.

The addition of QoS-compliant devices into the LAN and WAN make our networks behave as if the bandwidth needed for time sensitive-services has been added to the network. The bandwidth appears to be fatter.

## What is important?

QoS is becoming more important as

more mission-critical applications depend on network performance. Business phone systems that prompt users with customer background when they call in, security cameras from remote locations and conference calls with mobile sales forces all depend on the quality of service delivered by the converged communications network.

Build, expand and upgrade networks with devices that intelligently manage traffic, reducing congestion by eliminating collisions. Add QoS management with software that allows network managers to set levels of priority and view problems in real time and historically. Train network managers to manage converged communication networks. You will find a fatter network delivering greater performance.

With a little fat, your business gains a competitive edge through customer relationship management, supplier management, security and field communications. If your network is not fat enough to deliver performance for critical applications, your competitors will beat you to the punch. Bulk up for your own good.

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