

Special Report

# The Desktop Agenda:

The Essential Guide to Networking  
for Small and Midsize Businesses

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*Small and midsize businesses need to be smart about technology—if used wisely, IT can create competitive advantages that can boost the company into the big leagues. Nowhere is this more important than the network that allows employees to share information and serve customers.*

*In this Special Report, we take a look at the unique set of challenges—from cost to performance and support—that face small to midsize businesses when it comes time to building or expanding a corporate network.*

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**W**hen it comes to business use of technology, everybody thinks about the Goliaths—the gigantic Fortune 500 companies that creatively wield technology to their own competitive advantage. They think of FedEx or UPS, for example, who've smartly used the Internet to let customers into their shipping cycle by tracking the progress of shipments. Or they think of Dell, a company known for its use of technology to drive costs out of its supply chain.

But what about the Davids of this world? Technology used wisely can be every bit as effective in generating revenue and building productivity for small to mid-sized companies as it can for the behemoths. Indeed, technology can actually be of more help to small and mid-sized businesses (SMBs), providing them the necessary kick to rocket them into the big leagues.

"Technology can be of immense help to small and medium-sized businesses, as long as they are able to choose technology that's built to meet their specific needs," says Ulrich Hansen, a senior manager of network product marketing at Dell Computer in Round Rock, Texas.

Nowhere is this more true than when it comes to the desktop environment, which affects the work of employees on a daily basis. In fact, PCs can be instrumental to increasing productivity and keeping head count low, enabling small and mid-sized business owners to concentrate their skills on growing the business. How important is the desktop to conducting business? A recent study from Pepperdine University found that sixty percent of corporate data can now be found on the desktop. Clearly, being able to create, share and ensure the safety of that data should be a top priority to any business, no matter what size. And a key success factor in using and sharing business information lies in a business's decision to hook its desktop

equipment together using network technology.

Small to mid-sized businesses should not approach technology in the same manner as a big company, however, simply because their needs are quite specialized. Yes, both types of companies are doing the same thing with technology—using PCs, laptops and servers to create, share and store important business information. But the business considerations that drive the way a small to mid-sized business implements technology is very different from those of its larger brethren.

Take, for example, the issue of money. While no company likes to think of itself as a spendthrift, SMBs need to pinch the pennies much more thoroughly than do larger companies, says Joshua Feinberg, the co-founder of smallbiztechtalk.com, a website and consulting company for small businesses based in West Palm Beach, Fla. As a result, small to medium-size company owners find themselves constantly juggling the allure of cutting-edge technology with budget constraints. Take the issue of Internet connectivity, for example. "A big company would think nothing of setting up a branch office with 10 people in it and running a fractional T1 line in there at a cost of \$800 to \$1,000 a month," says Feinberg. "But you go to a business with perhaps two offices of five to ten people in each, and it's a stretch to get them to do a DSL line, which costs \$150.00 a month."

So how do SMBs get the best technology they can for the money at hand? A good question, and not a simple one. Answering it involves issues of price, ease of use, reliability support and security—all complicated issues that each worthy of a full time equivalent worker on the case. But that's not how it works for the little guys. The bottom line here is that SMB owners wear a lot of hats: The guy going on sales calls and work-

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ing up marketing plans is very often the exact same person who'll be installing the new server. They need help and concise information. So take a look at the following guide to the desktop environment. It's answers some of the basic questions that many employees in small to midsize companies come across in their never-ending quest to solve the technology equation.

### How much technology does a small to midsize business need?

That depends on the company, of course. Most start with a couple of desktop PCs, a printer, a fax. The desktop environment consists of more than the PC, however. Very small companies of three to five people can get by with stand-alone PCs, sharing information via email or floppy disk, but once a company grows to 5 or more people, other considerations kick in, says Hansen, and the concept of building a LAN starts to gain traction. By linking all the desktops via Ethernet and adding some servers to act as information and application repositories, companies can boost productivity and improve their data backup and storage practices at the same time.

"The first advantage is the ease of sharing files," says Hansen, "but there are other benefits as well." Some of the most important ones are as follows:

- **Increased productivity.** No more sneaker net; a network makes it much easier to perform the kind of team based collaborative work that many growing businesses depend on for success.
- **Safer storage.** Companies can centralize storage on a network server and give everybody access to that, for example. And by storing information centrally, companies can then implement a regular and consistent backup schedule, which helps secure that data that would otherwise live solely on a desktop or notebook.
- **Shared Printer and Fax.** Having a network means that small to medium sized businesses can make do with fewer peripheral devices, since users can all share one or two.
- **Centralized application access.** For example, networks mean that a employees can share Internet access rather than having to use multiple dial up lines.

With all these benefits, it's surprising that more small to midsize businesses haven't put in networks, but many have not yet taken the plunge, says Hansen. "There's some misconception out there that putting in a network is expensive and difficult to do," he says. "It's really too bad because there are some significant benefits to be had with a network."

### How much does it really cost to put in a network?

Cost is always going to be the first consideration for SMBs, and many fear that a network will be beyond the capacity of their purses. But as the market has matured in network devices such as switches, some vendors have been able to drive cost down while improving quality through smart and innovative manufacturing processes. Dell, for example, has been able to parlay its direct selling channel and innovative supply chain and manufacturing processes to produce the PowerConnect family of switches, which feature several products made specifically for the small to midsize business, and at a fraction of the cost of traditional networking vendors. As a result, there has been considerable interest in the so called commodity class of switches. "The commodity switches have been gaining considerable acceptance in the market, as they have all the features that SMBs need at a fraction of the price," says Jim Browning, the vice president and research director for small and midsize businesses at Gartner, a research company based in Stamford, Conn.

Part of Dell's success lies in knowing what small companies need. Most networking vendors, such as Cisco and Nortel, produce switches for enterprise class businesses, which means that they contain several levels of functionality beyond what small to midsize companies could ever hope to use. Result: SMBs that buy those switches pay top dollar for too much technology. "SMBs that deal exclusively with large enterprise vendors can pay up to three times the amount for networking needs than if they dealt with SMB-oriented vendors [such as Dell]" says Browning.

What does this translate into in real terms?

Hansen gives the following analysis: For a company with 20 or so devices that need to be networked—such as computers, faxes and printers—a single 24-port switch should be sufficient. "It's \$160 dollars for the switch from Dell," he says. "If you want to buy installation from us we'll do that, too." The only other cost is that of buying and stringing the network wires, which is dependent on how much wiring is necessary to link the office equipment together.

"When you look at the product—a 24 port switch for 160 dollars—people think, 'What's missing?' ", says Hansen. "The answer is, 'Nothing.' The quality and performance is all there. You can buy a similar product and pay three times as much. Our unique advantage is that because Dell sells directly to small to midsize businesses, we can save distribution costs and pass the savings on to the customer. That's our business model." It also means that Dell customers get more current technology, as the company doesn't have to sell through its existing inventory of products before it sells the newest technology.

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### How do I get the network set up?

This of course will vary, according to the IS support services in place at the company. Some SMBs rely on outside help, in the form of either a VAR or a tech-savvy friend or family member. Many more turn to their CIO, who is also the CEO, and the CFO. "One of the challenges of a small to midsize business is that they often don't have dedicated IT staffs," says Hansen. "That's why Dell has designed its PowerConnect family of switches to be exceptionally easy and straightforward to set up for those small to midsize business owners that choose to install their networks themselves. Dell chose Ethernet technology for its PowerConnect switches. The technology is so mature that it's plug and play for those installing the switch."

The PowerConnect options for the small to midsize business have been engineered to have no configuration requirements. "You used to have to do things like configure the speed of the links, and now it's all done for you," says Hansen. "We call it the 'unmanaged product line.' There are no management or configuration options on the switch. It's plug in and off you go."

In fact, Dell took care to run the entire installation process through its usability labs before the products ever hit the market. "We've gone through the entire process so that most users have no problems installing the switch," says Hansen. "The feedback we're getting is that it's not rocket science. At the same time, there's no performance trade off for this ease of installation."

"Everybody wants a very fast network, and these switches will never be a bottleneck on the network," says Hansen. "We keep a very keen eye on performance and there aren't any sacrifices made there." And for those who still panic at the thought of doing such a technical job themselves, take heart. The PowerConnect family of switches come with Dell's award-winning tech support—free—should a rare roadblock occur.

However, for those companies that see the advantages of installing a network but prefer not to keep the process in house, Dell also has a number of service offerings, including installation as well as a network assessment.

Some of the service choices include:

### How do I choose a network that fits my needs?

It's hard enough for IT professionals to keep up with technology. Now trying doing it when you have a fulltime job already. "Small to midsize business owners don't want to know the difference between hubs or routers or switches," says Feinberg. When it comes to technology, most SMBs rely on some sort of outside technical advisor. "If they get recommendations from an outside advisor they'll know what to buy," he continues. "Otherwise it's

very difficult for a small to midsize business owner to wrap his hands around this issue."

Dell's network assessment service is one way that SMBs can get advice from a company that knows technology thoroughly.

The best way to choose a network, however, is to do a business assessment first and let the results drive your technical requirements. Some companies, for example, will be small enough to use the unmanaged switch product line, while others will have grown beyond its 100 node limit and will instead move into Dell's managed product line, which can scale into 600 to 800 nodes.

Other businesses might find that their business needs are limited by the wiring constraints of a traditional network. Perhaps a company has heavy travel schedules, or teams are prone to bring their laptops to impromptu brainstorming meetings in the conference room. If the business needs dictate it, companies can complement their LAN switches with a wireless access port. "Wireless is an attractive option for companies with portable desktop units that then to move around," say Hansen. "You can also build the network such that you can hook up the desktop to the wireless network, just by adding a small peripheral device to the desktop unit."

### How far along the bleeding edge of the technology should small to midsize businesses go?

The accepted wisdom for most small to midsize businesses is to let the big companies wrestle the bugs out of new technology, wait for the price margins to thin out, and then, cautiously adopt the technology.

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"It makes sense to let the big companies work through the problems of new products," says Feinberg. "A lot of the things that the Fortune 1,000 IT director takes for granted are just now filtering down to SMBs," says Feinberg.

However, the bugs are often wrestled out of a technology long before SMBs are able to implement a solution. By that time the large enterprises are several generations of technology ahead. By and large, small to midsize businesses can't afford to be early adopters of new technology, no matter how useful a business tool that technology might be.

That's one reason that the current commodity market in mature technologies such as PCs and Ethernet switches is a boon to companies that haven't yet cracked the Fortune 1,000: By saving a little money on tried and true technology, perhaps a little windfall might appear in time to experiment with a newer technology that could provide some real business payback by its adoption a little earlier in the technology cycle.

One example is the mobile technology that big companies have used for years and years. "The price delta on mobile PCs has come down such that we see adoption by SMBs in 2003, whether as fully mobile devices or as their defacto desktop units," says Browning.

Another technology that's tempting small and midsize businesses is the wireless network, says Browning. "It might be helpful for small to midsize businesses to move into more nomadic functionality," he says.

One stumbling block might be the wireless adapters that enable desktops and laptops to hook into a wireless network. The products run between \$50 and \$80 each, but more and more laptops have wireless access built right in. Dell's current line, for example, is wireless ready.

Dell shows to advantage in its ability to help small to midsize businesses adopt more leading edge technology, says Browning. Businesses can simplify purchases by being able to choose one vendor—Dell—for clients, servers, storage and networks, as well as being able to take advantage of very low prices. "Dell can walk in and offer a complete solution," says Browning. "And the trend toward wireless and telecom is an advantage for Dell to show some strength in networking."

### **I can't afford for the network to go down—how do I choose reliable products?**

There are two methods to making sure that the desktop and networking products you choose provide bombproof business support.

The first is to choose a proven business partner that has a track history in building quality products. It's not hard to figure out the handful of vendors who qualify—basic research in trade and business publications is one place to start. Procuring and checking company references is another method, and asking peers in the small to midsize business community is yet another good way of checking product quality.

It's also helpful to keep the number of technology vendors in use to a minimum—that way, it's easier to avoid possible technical incompatibilities. And using one vendor for a variety of products generally means that they'll have done some of your work ahead of time. Dell, for example, does extra testing between its desktop and notebook devices and its network switches. The result is that Dell's products, from clients to servers to storage to networking equipment, work together seamlessly and at top performance.

Dell also goes to the trouble of running similar tests with competing network products. The goal here is to discover any potential technical glitches before they ever surface in a client's business, thus increasing their reliability. The idea of using a single vendor for a multitude of technical requirements has always been alluring to small to midsize businesses—it's why many of them have developed relationships with VARs or integrators. But now SMBs can go directly to one vendor to provide them with a host of topnotch technology, as well world-renowned service and support—all at the lowest possible price. In fact, Dell will also help customers find products in the areas it doesn't currently occupy. "If you want to add a router or a firewall, for example, we can do that for you as well," says Hansen. "We want to be the one stop shop for small and midsize businesses. We can help you define what you need." In fact, Dell's standard warranty on its switches includes next business day replacement of parts. In the rare event that a switch should fail, Dell will send a replacement that arrives the next business day, advance of receiving the old one back. Hansen says that this is a pretty sweet deal compared with other vendors' warranties. "Most others take up to ten days, which is a pretty long time to be without a network," says Hansen. "Even small to midsize businesses depend on their networks for day to day work."

Dell also offers extended service options that further buttress the reliability of its products, such as the ability to have Dell technicians come onsite to replace the switch should it be required. The enhanced offerings come in incremental increases of service—customers can get overnight response time, or four hour response time, depending on their needs. "We've priced the service so that it fits the budget of a small to midsize business," says Hansen. "We don't have to do huge service contracts, we're talking an extra \$39 for 3 years next business day parts and on-site labor provided by Dell."

### How will a network affect my security and backup?

Adding a network certainly adds a few wrinkles to the security strategy of an SMB, which can cause some angst amongst the technically challenged.

But Feinberg looks at this as a benefit, since he says that most small to midsize businesses are woefully unprepared when it comes to keeping their corporate information safe. "Security and backup are absolutely critical," says Feinberg.

Most SMB owners blame their vulnerability to issues such as hacker or virus attacks on the usual whipping boys: Lack of time and money. While it's hard to justify spending money on technology with no discernible payback, doing a simple opportunity cost calculation ought to help. What is the cost of having a breach in security? First of all, there's the fact that the business will lose big money in productivity losses if a network were to fail as a result of a hacker or virus attack. Then there's the hidden cost that lies in the erosion of customer satisfaction, and the not so hidden cost of emergency services required to fix the problem. According to research company Computer Economics, the costs associated with the Code Red Virus alone were more than \$2 billion in downtime and repairs.

All of a sudden, that pesky additional technology isn't looking so awful after all.

And Feinberg says that no matter what the size of a company, security and backup issues must be addressed. One to five-person companies can probably get by with some do it yourself basic solutions, but as companies grow beyond that, backup and security needs start to get a little more complicated.

He breaks the issues into data backup, virus protection and firewall protection for those with Internet access. "Within those areas there are some key things to watch out for," he says.

Backup is the biggest bugbear for many companies. "They just don't invest enough time and money to do it the right way," he says. "It's not particularly expensive, but a lot of corners get cut. They usually try to backup infrequently and only do it partially."

Companies should at least have a dedicated server on their network for backup purposes, and Feinberg recommends that small and midsize businesses invest in tape backup technology and be rigorous about maintaining and using the technology. "The technology needs to be tested regularly to make sure it's working," he warns. Otherwise your backups are worthless."

#### Other basic rules of backup:

- Rotate the tapes
- Store data offsite

- Don't overwrite data until at least 28 days have passed.

Feinberg says that companies neglect their antivirus software almost as thoroughly as they do data backup procedures. "It almost always falls by the wayside," he says. Make sure that your company's antivirus software is working and up to date with its virus definitions. Most software companies offer automatic updates that make this software easy to maintain.

Finally, it's imperative that companies maintain a firewall—software that blocks unauthorized attempts to gain access to a network—between their network and the outside world. Hansen recommends buying this product at the same time companies build or expand their network. "Make it part of the overall project," he advises. "Dell, for example, can provide a firewall through our partnerships with leading security vendors, so companies don't have to go find products elsewhere. The firewall can be part of the whole package, which simplifies things nicely for a small business owner."

Finally, companies need to consider security for remote access users. Since small businesses are increasingly jumping on the mobile work bandwagon, now is the time to consider security offerings such as a virtual private network, which lets remote users access their business network safely and securely.

Companies can run a VPN as part of their Microsoft server operations system, or chose a separate VPN appliance. The VPN appliance creates a nice separation between security products and your computing products and has the advantage of not directly impacting the other applications running on the server."

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**I already have a hub-based network. Will switches work better for me?**

While hub-based LANs remain widely deployed at many small to midsize businesses today, there's no question that hubs do have their drawbacks. Hubs are a very basic networking technology that simply links nodes without any further functionality or intelligence. This means that it's difficult to scale a hub-based network, as user on such a LAN share bandwidth. The more users and peripherals are added, the more network performance is compromised. This leads to the second issue, that of network delays, which can become unacceptable as the network grows. Moreover, there's no denying that hub-based systems are more prone to network failures than one built on an Ethernet switch. LAN switches significantly increase the scalability and performance of a network, allowing SMBs to grow their business and network easily and painlessly. At the same time, their technology is mature enough to be highly reliable, thus reducing any chance of network failure.

This becomes particularly more important as small to midsize businesses implement more sophisticated Internet-based applications. Ethernet switches offer the following benefits:

- High performance —no more waiting for a response from the network, which helps deliver mission critical data more quickly.
- Many switches have built-in enhance security features that help protect both the network and the information contained on it.

Switching from a hub-based network to a switched network is reasonably simple, says Hansen. First, forecast the size of your network by estimating how many desktop ports will be necessary

in the next year or so. Add a few more ports in as a safety measure. Next, choose either fast Ethernet or Gigabit Ethernet based on your performance needs. Finally, install the switches.

Make sure to consider the existing environment before choosing a switch. Dell switches, for example, integrate easily into multi-vendor environments, and interoperate easily with other vendors' products when industry standards are utilized.

**When should SMBs consider full time IS support?**

Here lies the age old balancing act for small and midsize businesses: When is it time to switch from 'do it yourself' IT support, or dependence on a local support and service consultant, to that of a full time IS support person?

Feinberg says that most companies hit that wall between 25 to 50 PCs. "Up until 25 PCs it's really not cost effective to bring an IS staff person onto the payroll," he says. "But once you get 50 PCs on the LAN, you can't afford to wait any further." With that many people using their desktop units and sending data over the network the support issues just become too constant for an 'ad hoc' IS person to be able to handle. "In a big company, if the email goes out there's somebody from IT on it in about 30 seconds," he points out. As your company grows, employees will be less able to wait for the IS guy to arrive from the outsource support company, for example.

"It'll finally get to the point where the company will generate enough of a budget so that they can afford to fund a \$45,000 or so salary for their first IT person," says Feinberg. "The slightly more sophisticated business—a company that does between \$10 million and \$100 million in revenue, for

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example—can probably justify the cost enough to put a real IT director on the payroll."

The trouble is, good IS support people are not easy to find, even in this economy. "It's a big recruiting challenge to get somebody to come from a bigger department and be the IS person at an SMB," says Feinberg.

Companies can avoid this particular headache a little longer by making their IS support budget stretch farther by choosing vendors with excellent support and service reputations. Dell's host of service and support options for its PowerConnect family, for example, means that companies can feel more comfortable doing technology installation and maintenance themselves, saving money in the process.

Today's economy is nothing if not challenging, but entrepreneurs have always relished a challenge. Even in today's challenging economy, small and midsize businesses remain a vigorous engine of business growth. Such companies employ 51 percent of private sector workers, and provide two thirds to three quarters of the net new jobs each year. Astonishingly, small and midsize businesses are responsible for over half of the private sector output as well. And more and more, these businesses depend on technology to power their economic engine.

Dell's price/ performance equation is making a big impression with them, too: The company has shipped more than 2 million switch ports during the first 12 months of the product line. "Companies know that with the economy really driving cost consciousness, they can save a lot of money while getting great value," says Hansen. "The idea of buying networking equipment together with computers from Dell is a great value proposition that's resonating very well."

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