

## This Issue:

How Cloud Computing and Virtualization Can Free Up Your Business to Do More

3 IT Shortcomings That Drive Employees Crazy, and What You Can Do About Them

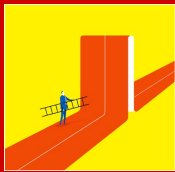
How to Tell When Your Network is Stretched Too Thin

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Why Businesses Need to Quickly Distance Themselves From SQL Server 2005

### How to Tell When Your Network is Stretched Too Thin



A network is arguably one of the most important assets that your business has. It

keeps your team connected to crucial information and mission-critical applications. This is perhaps why it's so irritating when your network acts up. You should



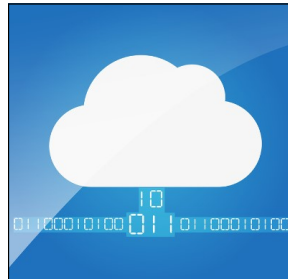
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## About Directive

We are a technology consulting firm specializing in technology implementation and management for businesses. We're known for providing big-business, Enterprise-Level IT services to small and medium-sized businesses.

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## How Cloud Computing and Virtualization Can Free Up Your



The cloud is revolutionizing the way that businesses store and manage data, applications, and even abstracted hardware like servers and desktops. However, some businesses are still reluctant to adopt the cloud, despite its overwhelming advantages for small and medium-sized organizations. Therefore, we're taking it upon ourselves to "demystify" the cloud, so you can see just how great of an innovation it is.

### What Is Cloud Computing?

Cloud computing is the act of storing information or data in an online environment. Basically, the cloud is a computer (or series of computers) managed and maintained by an external party, and your business receives its data and applications directly from it through the Internet. It's great for quickly and efficiently allowing your team to access specific information and programs that they need to get their job done properly. Examples of cloud computing services include data storage, application access, and even server hosting. Many businesses use it to store their productivity suite, like Google Apps or Microsoft Office 365, and to store data so that all of their employees have access.

### How Virtualization Works

Virtualization is the act of taking multiple pieces of your network, like servers or desktops, and running them on a single piece of hardware. By doing so, you eliminate the physical costs of running and maintaining multiple, and often underutilized devices. Your business  
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## 3 IT Shortcomings That Drive Employees Crazy, and What You Can Do About Them



For small and medium-sized businesses, technology management can be a tricky situation. You want to ensure that your IT doesn't break your budget, but you also want to make using your technology as easy as possible for your end users. Unfortunately, for many employees, your business's technology conduct and practices could be driving them insane.

Much of it has to do with efficiency on their part. They see their technology as tools that can help them do their job correctly, but only if the organization makes a deliberate attempt to help them take full advantage of it. Otherwise, a poorly implemented system or unreliable solution is often used by employees as an excuse and can actually hinder productivity. Here are three ways that your employees could be struggling to get the most out of their workday, thanks to lackluster IT management and maintenance practices.

### They Don't Like Slow, Outdated Technology

Businesses need to equip their employees with the hardware and software they require to perform their position's responsibilities. If your business fails to provide the technology necessary for your employees to do their jobs correctly, you could be cutting into your own profits and return on investment without even knowing it. If your team is struggling to deal with slow and outdated technology, they could be wasting time grappling with their tech instead of being profitable for your business. Therefore, it's your responsibility to ensure

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## How to Prevent the Crippling Effects of Downtime



Downtime is a critical problem with many businesses that have limited IT budgets. Organizations need to ensure

that their bottom line is as high as possible, but if you're constantly plagued by persistent downtime, your business is losing money when it doesn't need to. We're here to inform you about downtime, and what it can cost your business if it's not addressed promptly.

Downtime, as reported by the Gartner IT Glossary, is "the total time a system is out of service." This could be the result of an unexpected hardware failure, a Distributed Denial of Service attack (DDoS), or even from the theft or destruction of critical data as a result of a virus or other threat. Regardless, any situation where your systems are left offline and inoperable for an extended period of time, could have devastating effects on your business.

To put it in simpler terms, any time where your systems aren't running, is time that your team isn't working. It's time where your servers aren't collecting data. It's time where your business isn't collecting new leads. Downtime is equivalent to lost profits and opportunities, both of which can hurt your business in the long run and hinder its growth. As reported by NetworkComputing, an estimated \$700 billion is lost every year due to information and communications technology outages. Included in this number are lost employee productivity, lost revenue, and the cost of resolution.

There are several causes of downtime, but one of the worst is hardware failure or problems with your equipment. Many organizations still use the same technology they've been using for the past five, or even ten years, which can be a major detriment and an unnecessary risk. This is most often the case if a small or medium-sized business doesn't have the funds on-hand and readily available to regularly upgrade

hardware and software solutions.

If your business has a downtime problem, you should look into solutions that are capable of getting your systems back online as quickly as possible following a crippling disaster. One of the most critical components of doing so is a Backup and Disaster Recovery solution, otherwise known as a BDR device. BDR can protect your business's assets in the event of a catastrophic data loss or theft scenario. BDR takes multiple backups daily, allowing for minimal data loss. This data can then be deployed to your systems via the cloud, allowing for a swift recovery process that minimizes downtime. In fact, the BDR device can temporarily act as your server while you work toward getting a downed server back online, effectively eliminating the cost of expensive downtime.

In general, taking proactive measures...



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## How Cloud Computing and Virtualization Can Free Up Your Business to Do More

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can save considerable capital by investing in virtualization services designed to eliminate unnecessary physical clutter and overhead costs.

A real world example of this is deploying a user's desktop from a centralized or hosted server, meaning you can broadcast it to any type of hardware, whether it's a laptop, thin client desktop, a home computer, or a tablet. It gives the user access to their files and applications regardless of the device they are using. In other words, you aren't bound to a specific computer or device.

### How are Virtualization and Cloud Computing Related?

Like we mentioned earlier, a cloud is essentially just someone else's computer that you entrust your data and

applications on. So the real question is how can this be more cost effective?

By taking advantage of high-end, expensive hardware and utilizing virtualization to get the most out of the hardware, a cloud provider can effectively provide computing resources for more users per capita. On top of that, the cloud infrastructure can be managed and monitored effectively by the provider's in-house team.

When it comes to the management and maintenance of your mission-critical systems, what would you rather have; your in-house team spending valuable time and revenue maintaining your in-house IT network, or an outsourced team of IT professionals who care for your technology just as carefully as they would their own? If your business wants to achieve its maximum potential, you

need all hands on deck to implement and innovate with new initiatives. Our team of trusted professionals can give you the breathing room you need to ensure your IT goes smoothly.

Our professional IT technicians can help your business choose and implement the cloud solution that best fits the needs of your business. We can also assist your team with virtualization services needed to maximize your bottom line and limit unnecessary costs in your budget.

For more information about cloud computing and how we can help your business fully leverage its technology, give Directive a call at 607.433.2200.



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## 3 IT Shortcomings That Drive Employees Crazy, and What You Can Do About Them

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that this doesn't happen by giving them the tools they need. This can reduce your employees' frustration significantly. On top of that, if you can't provide what they need to get their jobs done, a more diligent worker might attempt to jury-rig their own solution, which may lead to additional issues when it comes to control and security. This leads us to the next point.

### They Want to Use Their Own Devices

Employees using your organization's workstations might think it redundant to use systems that they know nothing about. If your employees already have their own devices that they're familiar with, like smartphones and laptops, they will see little need for your company's technology (especially if their technology

is better than yours). In this case, it can be beneficial to implement a BYOD policy based around keeping your data secure, while still allowing your team to be productive by using their personal devices. Utilizing an infrastructure that supports these devices is entirely possible in the modern office; A-players can be given the ability to work from anywhere while you retain control over your data.

### They Don't Like Communicating with Your IT Department

Employees don't like communicating with a help desk. This could be due to a variety of reasons, though one of the most common issues is that your IT is too busy to handle their request promptly. This is a notable issue for small and medium-sized businesses that have their

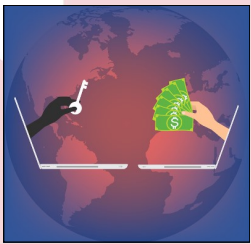
own in-house IT department. Their IT departments are usually too busy to implement new solutions, or they're too busy putting out fires to focus on proactive and preventative maintenance and internal initiatives.

For companies who don't have their own in-house IT department, coping with IT issues when they happen adds a whole separate set of frustrations to the mix. Who sits on the phone with the vendor? Who can approve billable time? How quickly can an emergency get fixed? Who really understands the entire scope of your IT infrastructure...



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## Ransomware: A Look at Today's Worst Cyberthreat



There are many types of malware out there, but few are as scary as ransomware. Imagine being struck by a

threat that instantaneously locks down your files and keeps you from accessing them until you pay a certain amount of money. If your business is targeted by ransomware, would you be able to protect it from dragging your operations into a bitter pit of despair?

Ransomware is a malicious threat that has the potential to end your company's operations by eliminating access to critical files. It works by encrypting the files located on your PC, and the only way to get the decryption key is to pay the hackers who infected your computer. In 2015 alone, ransomware cost users over \$325 million, which makes it an exceptionally lucrative venture for hackers. Ransomware generally worms its way into your PC through infected email attachments disguised as invoices or statements (i.e. phishing attacks), which means that

inexperienced users might accidentally fall for the trick and unknowingly expose their PC to this threat.

Many types of ransomware will try to coerce money out of users through fear. For example, one variant of ransomware will pose as the Federal Bureau of Investigation, which might claim that the user illegally downloaded copyrighted material or is in possession of incriminating pornography. Others might claim to be from local law enforcement, demanding that a fine be paid in return your files. Some don't even bother trying to pose as other parties, and instead will simply make a demand that's quite difficult to resist: either you pay up, or your files are gone for good.

The most well-known type of ransomware these days is Cryptolocker, which locks down the files on a user's PC and demands a ransom. This ransom is usually to be paid in Bitcoin through the anonymous web browser, Tor, which makes it difficult, if not impossible, to trace the hackers' activity back to them. A more recent version of Cryptolocker, Cryptowall, is even more dangerous for

businesses, as it allows infected PCs to spread the ransomware throughout the network they're connected to. This means that all it takes is for one system to get infected for your entire network to be encrypted and held hostage by hackers. This isn't a situation you want to be in.

If your files are backed up somewhere, you should be able to eliminate the ransomware by restoring your backup. If your files aren't backed up, however, you might feel like there's no choice but to give in. The important thing to remember about ransomware is that you shouldn't pay the ransom under any circumstances. In the worst case scenario, you could pay the ransom and the encryption key might not work, putting you at a severe disadvantage. This would be no skin of the hacker's back, after all, they got your money. If you're ever infected by ransomware, it's important that you immediately disconnect your PC from the Internet...



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## Why Businesses Need to Quickly Distance Themselves From SQL Server 2005



Which database management system

is running on your company's server units? For end users, it's not something that they put a whole lot of thought into. However, if you completely overlook your Microsoft SQL Server, you may end up running an expired version that puts your data at risk. Case in point, SQL Server 2005, which Microsoft recently ended support for.

The end of life event for SQL Server 2005 took place on April 12th, which means that if you haven't upgraded yet to a more recent version, then you really, really need to. Let's face it, 10 years is a long time to run any software without updates, much less SQL Server.

You'll want to upgrade to a version that's supported by Microsoft's security patches and updates. By going with the latest versions like SQL Server 2014 or Azure SQL Database, your data will be protected for years to come. Directive can assist you with

such an upgrade so that you won't experience any surprises with a lack of compatibility of your mission critical apps. Running into an error like this can severely hinder operations.

Additionally, upgrading your SQL Server may require apps

*"Let's face it, 10 years is a long time to run any software without updates, much less SQL Server."*

to be reconfigured and upgraded, which is much more challenging than simply plugging in a new version of SQL Server and walking away.

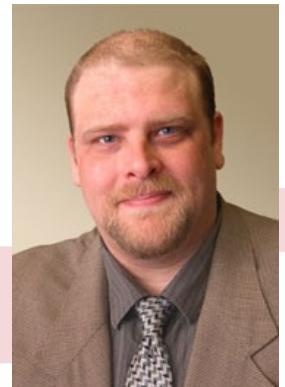
Tim Hegedus, senior manager of the analyst team with Miro Consulting, explains to CIO, "The biggest risk stems from continuing to use the product when there is any kind of

uncontrolled or external access to that database. Any security breach can be damaging not just monetarily but also reputationally."

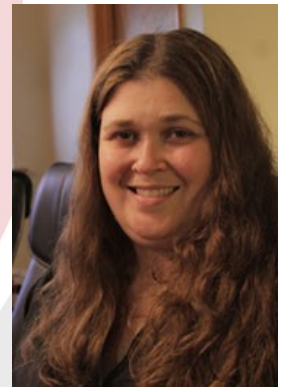
Additionally, organizations that work with sensitive data need to understand that using unsupported software like SQL Server 2005 (or any other unsupported software) can open themselves up to some hefty fines. Some of these violations can result in fines amounting to thousands of dollars, per record.

For businesses looking to upgrade, now may be an opportune time to try out Microsoft's Azure offering. An Azure SQL VM is a legitimate option to consider, especially if you're wanting to move away from having to buy and maintain a new server unit, install a bunch of software, and move all of your data. Depending on your needs, there are many other options, and Directive can help you weigh the pros and cons of each solution....

We partner with many types of businesses in the area, and strive to eliminate IT issues before they cause expensive downtime, so you can continue to drive your business forward. Our dedicated staff loves seeing our clients succeed. Your success is our success, and as you grow, we grow.



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