Technical Debt & The Small to Mid-Sized Business

The IT needs of today's small to mid-sized businesses are far different than they were just a few years ago. IT today is expected to be a serious participant in a company's drive to find new business opportunities as well as speed up time-to-market when developing and launching new products or services. Whether they are aware of it or not, companies whose IT systems are not up to date will likely be stymied in their efforts and actually suffer from rising costs with no attendant benefits.

Business owners and executives who deal with property ownership, whether these properties be rental units, restaurants, office facilities, or others, are familiar with the term "deferred maintenance." It is the accumulated and ever-growing cost that will at some time in the future ultimately have to be paid to bring these buildings up to speed after ownership has been neglecting them over time. In technology, a new term has arisen to define the same scenario:

> *"Technical debt (also known as design debt or code debt) is a concept in software development that reflects the implied cost of additional rework caused by choosing an easy solution now instead of using a better approach that would take longer."* ([Wikipedia](.).)

Although this term was originally coined by a software developer, today this term is also applied to IT hardware.

The actual costs of accumulating technical debt are often so subtle that their impact is not easily noticed. They exist as higher than needed operational expenses, inefficiency of your IT staff, and/or inability of the IT staff to provide maximum service to the rest of the company, all of which can result in less than optimal business results.

A recent study of large ("enterprise") companies showed that while many of these companies had accumulated a significant amount of technical debt, many others were already tackling the problem and those that had were able to reduce their annual IT budgets by almost a third. Some of the actions they had taken that can be applied to small to mid-sized businesses included:

> Lowered IT infrastructure expenses and better support of business growth through optimized hardware utilization

> Making in-house IT teams more efficient by outsourcing day to day monitoring, management, and maintenance to qualified managed IT support companies.

> Decreasing number and length of IT outages with more up to date hardware, software, and procedures. Again, many relying on third party services.

An investment in modern technology can provide business opportunity that can result in increased revenue/income, and improved time to market, benefits that are well-recognized. What are less often understood are the costs incurred by NOT making these investments because these costs may not be immediately recognizable. So, the question arises, how does an organization keep from building up ever increasing technical debt?

Recent research has shown that by enabling IT departments, large and small, in-house or outsourced, to modernize, they are allowing the entire company to function on a more cost-efficient basis and that this modernization can reduce their IT costs by as much as one-third every year. Many companies are accomplishing this by:

> Consolidation of server hardware infrastructure and the software licensing thus associated with it. This can be accomplished both internally through convergence or through cloud-based solutions. A third-party IT support company is often a big help with this.

> Productivity. By reducing the time your in-house IT people need to spend on routine support and/or maintenance, they are freed up to accomplish tasks that are more productive in terms of company profitability.

> Network security and data protection become handled in a manner that is more comprehensive and effective, thus creating overall greater security for the entire business operation.

> IT people and application developers, again whether in-house or outsourced, are freed from their routine duties to be more creative in working towards long and short-range business goals and become more valuable to the company.

> The frequency and longevity of unplanned IT outages that disrupt daily business operations are significantly reduced.
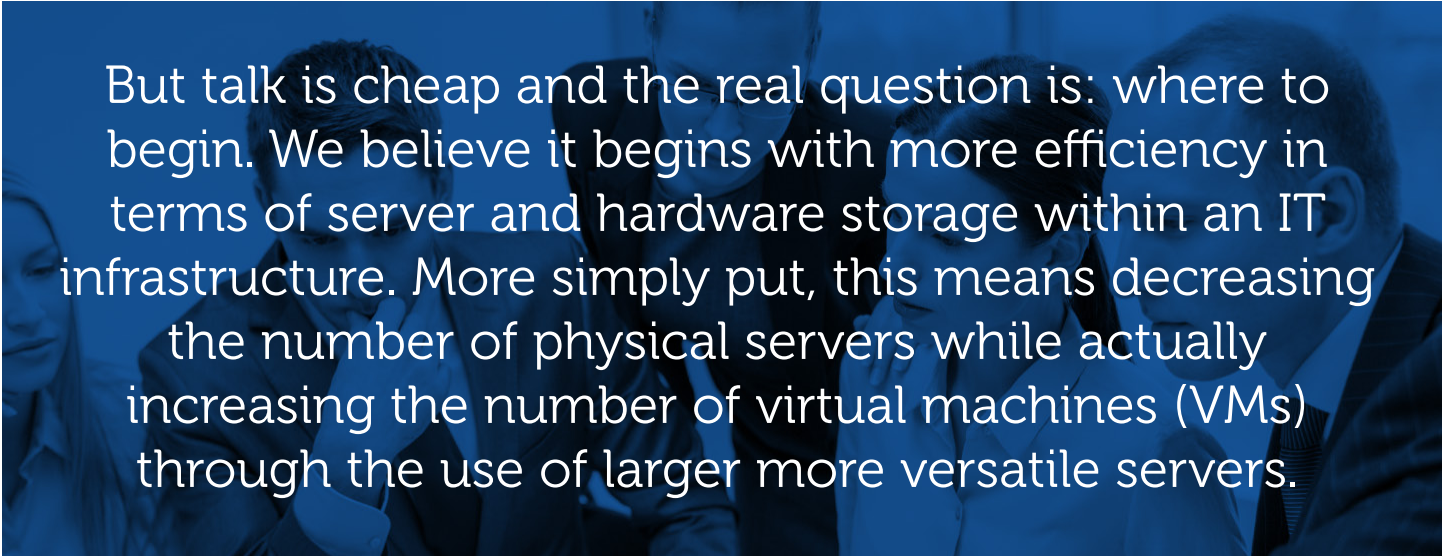
Looking at the above in reverse, failure to accomplish these suggestions means that parts of your organization will be operating well below peak performance. Make no mistake about it, this is a real cost to the business.

But talk is cheap and the real question is: where to begin. We believe it begins with more efficiency in terms of server and hardware storage within an IT infrastructure. More simply put, this means decreasing the number of physical servers while actually increasing the number of virtual machines (VMs) through the use of larger more versatile servers. It is not uncommon for companies to be able to decrease the number of physical units by as much as 60% while greatly increasing the number of VMs. Capital investment and maintenance costs are reduced, while hardware productivity goes up, often in multiples. Companies are also finding that their hypervisor licensing costs are also being reduced since there are fewer machines that require the software. Where, specifically, are all the savings coming from?

> **Licensing:** It is not uncommon for companies to see hypervisor costs going doing by 50%.

> **Server hardware and warranty expenses:** This is a two-pronged result in that fewer physical machines mean initial hardware costs are decreased, as are ongoing maintenance expenses, but productivity is

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going up because of faster running servers. It may be hard to measure this productivity gain, but it is there.

> **Operational expenses:** Companies making these switch-overs are benefitting in multiple operational ways, including reduced power consumption and less physical space being allocated to server rooms.

But there is more. IT teams, again, whether in-house or outsourced, become more efficient, more productive, and are able to spend their time focusing on areas that make them more valuable to the organization. Instead of devoting tremendous amounts of time on the mundane day-to-day tasks associated with the administration, management, support of the IT infrastructure, not to mention network security, leaving them little time to work on the more productive tasks of future planning, development and support of the entire organization. This is a real cost that is often accepted as a necessary evil, simply because upper management doesn't expect anything different.

In today's world, it is vitally important to maximize the value of employees' skills. Budget constraints are a real factor, as well as is the shortage of talented people. Here in the Atlanta area, IT unemployment hovers near 0%. If your IT people spend a significant amount of their time dealing with outages, equipment failures, security problems, et cetera, and if you have a list of IT projects that never seem to get done(projects that would help your company sell products/services, support customers, develop new products, or help bring ready-to-roll projects to market) then maybe you need to think about how all these could be handled by people already on your team if only your IT infrastructure was more modernized.

Let's get more specific. A number of companies that have undertaken this venture have reported extremely encouraging results. Here are what a few have achieved:

Staff levels remained the same while accomplishing more work: This company believes that based on the additional work they were able to take on, without modernization they would have had to hire 40% more people.

New product delivery and improved existing services: Because of employee time going from 85% for basic operations to only 65%, a company was able to dedicate more time to special projects, which resulted in new products and improved service.

Focus on new products: Still another company was able to have a number of employees focus their time on new projects instead of maintaining old ones.

New technologies introduced: The time this company's employees saved from their routine tasks was spent researching and bringing new technologies, like artificial intelligence, Internet of Things and machine learning, on board. These new technologies created new opportunities.

IT Modernization & Resource Availability

There is also a definite cost attributable to the inefficient processes that result from outdated IT infrastructure. It is expected that most businesses will grow.It is usually either that or they ultimately fail. This growth requires increased resources

and when those resources are not there, the business suffers. Computing power, storage, networking ability – all are critical to growth. Modernized IT infrastructures allow for the availability of these critical resources and IT is now better supporting the business operations as a whole.

This also creates a better working environment and relationship between IT, whether in-house, or outsourced or a combination (co-managed /co-sourced) and the departments that rely on trouble-free IT, and isn't that every department in the company? The various departments benefit from:

Availability of increased computing power: Very much a factor of the launching of additional virtual machines (VMs), which is a factor of higher levels of virtualization.
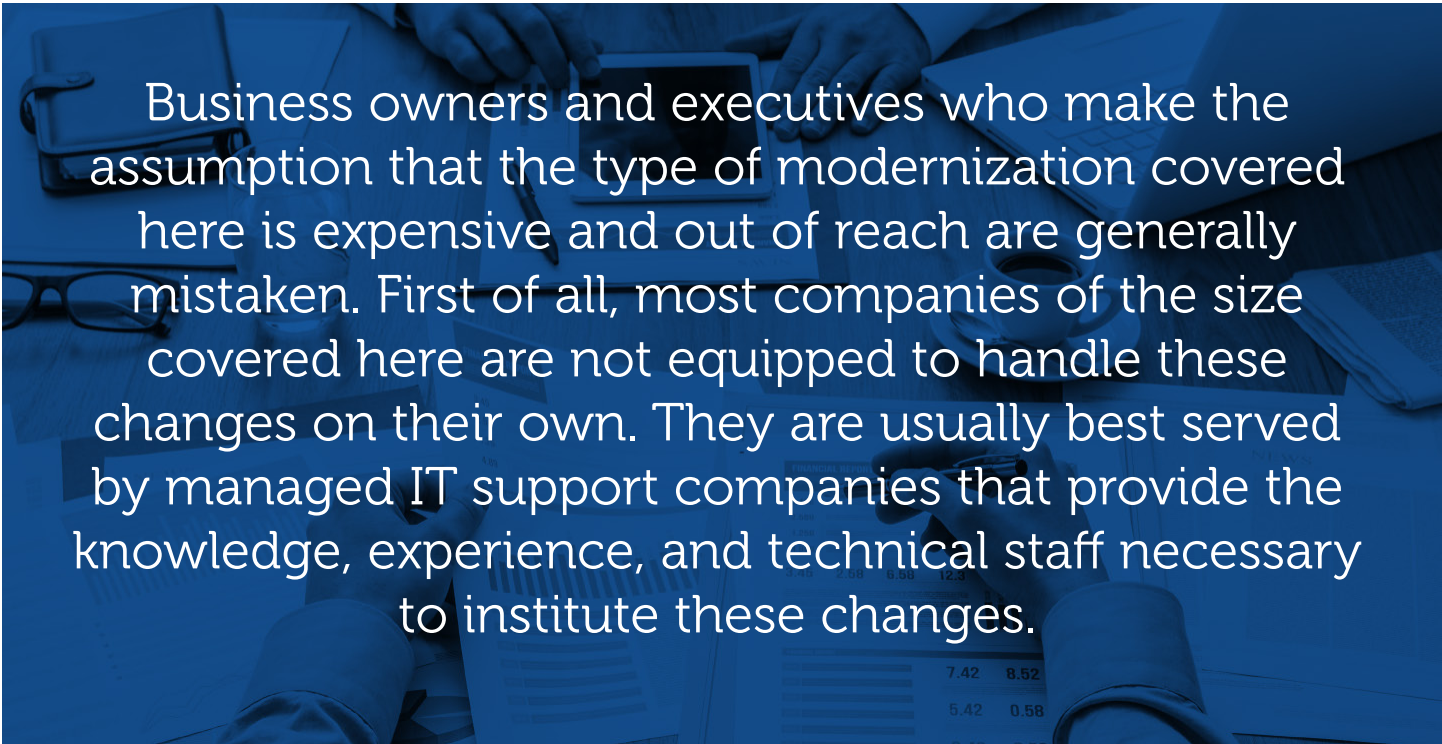
Enhanced productivity: Individual departments see the benefits of modernization through enhanced productivity, which creates a positive domino effect. In companies where processes flow from one department to another, then to another, a single department that cannot keep up with the work flow reverses this domino effect into a negative. That said, the goal should never be to just keep up with the current work flow, but rather to be prepared for increased loads, even spikes in business volume or development.

Better application performance: Additionally, upgraded IT infrastructure frees the team to improve the performance levels of all your business applications. This results in fewer complaints, happier employees, and better relationships within the company.

Risk Mitigation

Systems that have not been modernized/upgraded are less reliable, therefore inherently less risk-averse. How does this affect actual costs?

> Over-provisioned hardware – Allowing additional free space is nothing new and is often considered a viable means to insure proper performance, but "over-over provisioning" can get expensive. Modernized systems can reduce this need substantially.

> Staff insufficiencies

> Loss of productive time due to outages

> Loss of revenue due to outages

> Increased time spent on **data protection**

Business owners and executives who make the assumption that the type of modernization covered here is expensive and out of reach are generally mistaken. First of all, most companies of the size covered here are not equipped to handle these changes on their own. They are usually best served by managed IT support companies that provide the knowledge, experience, and technical staff necessary to institute these changes.

Let's Discuss Data Protection

Not surprisingly, data protection is a major focus for companies of all sizes, whether modernizing or not. Important considerations, and targets that benefit, are the RPO and RTO windows (RPO is recovery point objective – the point in time to which your data will be recovered; RTO is recovery time objective – the length of time it will take to recover data.) The primary questions to be asked when setting up RPO and RTO are: How much data can you afford to lose? How long can you afford to be down? The answers are factors of cost, comfort level, and business risk. In terms of technical debt, and in terms of data security, failing to upgrade systems can have very expensive long-term consequences since modernized IT can seriously decrease the back-up time frame and increase recovery speed.

Challenges for the Small to Mid-Sized Business

Cost. Business owners and executives who make the assumption that the type of modernization covered here is expensive and out of reach are generally mistaken. First of all, most companies of the size covered here are not equipped to handle these changes on their own. They are usually best served by managed IT support companies that provide the knowledge, experience, and technical staff necessary to institute these changes. Secondly, since these managed IT support companies generally work on the basis of fixed monthly fees, which include the lease payments for updated hardware and software, and since these companies assume the financial risk of monitoring, managing and maintaining their clients' IT infrastructures, most small to mid-sized companies find that their actual year-over-year IT expenses are actually the same as, or even less than before, while receiving better over-all IT results.

Next Steps

The first step is information. Moving forward with a modernization program that will reduce your company's technical debt begins with knowledge and we would be happy to begin that process with and for you.

DynaSis has been a thought and technical leader in the small to mid-sized business community for more than a quarter century. We know and understand businesses like yours and would love to perform a no-cost, no-obligation IT Network & Security Assessment for you that will provide detailed information on where your network stands now, and where we can take it going forward. Give us a call today at 770.629.9615.