2011 Information Technology Optimization Guide

Key business drivers for small businesses and the IT initiatives that will materially impact them

Technology decisions have a direct impact on drivers such as business efficiencies, customer satisfaction, maintenance overhead, revenue generation and cost reduction. This guide will help you identify where you can be reducing costs, increasing performance and reliability from your existing software and hardware systems and maximizing the use of new technologies for optimal business outcomes.

Turbotek Computer Corporation 161 Abby Road, Manchester, NH 03103
Toll free (800) 573-5393 Tel. (603) 666-3062 Fax (603) 666-4519
http://www.turbotekcomputer.com
sales@turbotekcomputer.com

Key Business Drivers For Small Businesses in 2011

According to the GrowBiz Media, small businesses are "feeling optimistic about the economy – so much that they're increasing their 2011 marketing budgets."[1] A related trend is an increasing use of mobile applications for everything from marketing to mobile payments. Yet, Entrepreneur Magazine cautions small businesses that there is still less than 3 percent economic growth, high unemployment and sluggish consumer spending.[2] This makes it critical to optimize costs, ramp up productive product and service lines, be agile in order to experiment, motivate employees and partner effectively.

Green trends continue in 2011 and impact not only the way small businesses operate, but the technologies they use in their efforts to be environmentally friendly. Another interesting consideration is that according to the Small Business Administration (SBA), "innovation increases significantly as small businesses increase employee headcount."[3] Specifically a 100% increase in headcount increases innovative activity by 20%. The SBA goes on to say that "Innovation has been a constant proxy for measuring small business success."[4]

So, small businesses are faced with an environment in which they must be efficient, yet still support increased headcount, be environmentally friendly and innovate in order to compete. Let's see what technology areas can best help them to these ends.

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[1] http://smallbiztrends.com/2010/11/small-business-marketing-outlook-2011.html.
[2] "10 Steps to Small-Business Success in 2011", Entrepreneur Magazine, December 2010
[3] "Innovation in Small Businesses: Drivers of Change and Value", SBAHQ07-Q-0012, March 2009, p.3.
[4] *Ibid., p.5.*

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Major 2011 Technology Initiatives

1. Virtualization

Virtualization is the abstraction of physical information technology resources using software for what was previously an actual machine; it is one of the hottest technology trends for small businesses. This is because it is directly aligned with many of the business drivers we discussed previously, including cost reduction, improved efficiency, agility and green practices.

While there are many forms of virtualization, some of the key ones to consider in 2011 are:

a. Server virtualization

By implementing a virtual environment, small businesses may divide a single physical server into multiple logical servers performing the exact functions they were doing before. This makes it possible to save hundreds of dollars per month through reduced power, cooling, space and management costs. It also makes the organization substantially more agile as it is much faster to recover from disaster or deploy new infrastructure since the physical build of the server is no longer required. It is all done in software. For a detailed discussion of server virtualization, see "5 Things You Must Know When Virtualizing".

b. Storage virtualization

Just as server virtualization allows small businesses to abstract the individual computing resources from physical hardware, storage virtualization benefits for small business IT include efficiency and ease of management of their information storage resources.

Typically, a small business will start with distinct computers or perhaps servers which each have local disk drives. The problem with such a tightly coupled system is that any disruption to those disk drives affects the operation of all computing resources tied to them. This means that should a drive fail, the accounting system could go down. While there are ways to build redundancy into individual servers, this becomes increasingly inefficient because the more servers there are the less the storage infrastructure tied to that server is used efficiently. By pooling storage in a virtual environment, small businesses will save money, have a more robust infrastructure in case of failures and increase the efficiency of the IT personnel (whether internal or external) by allowing them to manage storage in one place in a consistent manner.

c. Operating system virtualization

Virtual Desktop Infrastructure (VDI) offers distributed client access to a server containing a series of virtual desktops. This model helps to reduce costs by allowing users to share resources as they need them. It also eases data backup issues since data may be centralized.

Session Virtualization allows a large number of users to access a centralized server through Remote Desktop Services. It requires less hardware than VDI because multiple users share a single operating system, whereas VDI offers a pool of heterogeneous desktops which is more demanding.

As with storage virtualization, operating system virtualization is a rich area to explore, but they merit investigation due to the potential for cost savings, improved performance and better agility.

2. CLOUD

Cloud computing will certainly continue to be a focus in 2011. The notion of a set of shared services accessible over the Internet is very appealing because it

turns the onus of procuring, installing, configuring and managing IT resources into more of a black-box model. Clouds may be private or public, but what may be most appealing to small businesses is allowing a third-party to manage their IT needs in a utility model. The highest value cloud applications are those that require massive amounts of computing power available only in such a configuration – Amazon's High Performance Computing (HPC) Clusters, for example. Next in value are offerings that leverage the network effect – the more users using them, the more the value for the entire network – Skype comes to mind. Finally, there are cloud applications which are simply hosted. Microsoft is investing tremendously in this area with Business Productivity Online Suite (BPOS) and Office 365. While the cloud is very appealing, it is not always trivial to migrate to and operate in the cloud. There is a natural loss of control and one has to be comfortable with the security and privacy implications of cloud running, so to speak. As with many new technologies, the cloud is not a panacea, but a great tool for certain use cases.

3. Social Media

As mentioned earlier, a very high value application is one that leverages the network effect. The most visible examples of this are social networking sites such as Facebook, LinkedIn, Twitter and others. Successful social networking sites have exponential growth because of the wildfire that spreads due to viral communication between members. Because of this, social media is a critical part of the marketing mix. Perhaps the easiest example to understand is Twitter. If you start following Twitter members who have a lot of followers themselves and you develop a relationship with them, when you tweet (perhaps privately) to a Twitter member with a lot of followers (this could be hundreds, thousands or more), your valuable tweets will be retweeted to all of those followers. This free marketing can get your

message out to many more than you could reach through traditional marketing and sales. Social media marketing, however, requires diligent, on-going effort because of the short attention span of those on the Internet. While we recommend pursuing a social media marketing strategy, make sure that you know your target audience and have sufficient bandwidth to produce compelling, useful content that is not simply self-promotional. The increasing importance of mobility and mobile marketing further underscores the need to participate in social media.

4. Off-Site Storage and Disaster Recovery

While many IT staffs are still relying on tapes or on-site backups, there has to be a bullet proof way to recover from disaster given the increasing reliance that small businesses have on IT infrastructure. The problem is that up to half of all traditional data backups fail. This is a very rich area of discussion and there are lots of things to consider including how much data needs to be backed up on and off-site, performance, data growth and cost.

Some companies have terabytes of information because of client-related image and other media files. Others can squeeze critical data to tens of gigabytes. So, the logical place to start is with an inventory of current and future data needs including segmentation of criticality of information. With this, one may develop a tiered approach to backup and disaster recovery that balances cost, recover time and robustness. For less critical data, a simple local backup may suffice. For the most critical data, redundant on and off-site backups are merited.

This topic dovetails nicely with our discussion on both virtualization and cloud offerings. Virtualization makes disaster recovery that much easier since the simple act of restoring virtual files brings the system online as opposed to time-consuming configuration of a traditional restore. Off-site

backup is a great cloud use case because it turns a critical task into service guaranteed by experts running the service.

5. Security Audits And Vulnerability

While not a new topic for 2011, security continues to be an important area for small businesses because many do not have a good handle on how vulnerable their networks are. Information security is an entire domain on which there are already many books published. That said, some high level things to consider are addressing perimeter security (e.g. firewalls, anti-virus, and anti-malware), information-centric security (e.g. identification of critical data, data loss, encryption, and authentication) as well as policy issues with personnel.

While enterprises tend to have sophisticated procedures and infrastructure to protect users from themselves, small businesses often have more relaxed environments. The problem with this is that a single security event can bring a set of users or a network to its knees. It is often more economical to start from scratch rather than try to clean an infected computer, for example. Small businesses can largely prevent this by engaging a third-party to perform an objective security audit and vulnerability analysis. For this, any gaps in infrastructure and policies may be filled at far less a cost proactively than reacting to an event after the fact.

Security is a trade-off of cost, ease-of-use and risk. Armed with a thorough security assessment, small businesses may consciously make decisions about which information is the most critical to secure, how much they are willing to spend to protect it and what precautions they will require their end-users to take. This is a far better posture than allowing users to surf Web sites unchecked risking loss of data due to malware or falling out of compliance with industry or government regulations.

Typical Gaps Small Businesses Face Deploying Best Practices

1. Infrastructure Documentation

One of the most basic issues is knowing what you have. Because infrastructure often grows organically over the years, often without substantial prior planning, it is not uncommon to have very little, if any, documentation on a small business' infrastructure. This may well be the case even if a small business uses a third party for infrastructure support. That is because not all IT service providers take a proactive approach. If the model is break-fix, there is generally little time to plan out architecture.

Compare the complex streets of New England to the urban planning performed in California. This is also true of Information Technology. Once the state of the infrastructure is documented, it is much easier to determine whether we need an IT "Big Dig" or whether incremental improvements will suffice. This documentation also serves to facilitate all future servicing of the network.

At a minimum one should thoroughly document the details of servers, backup strategies, security infrastructure, networking equipment and storage infrastructure. This provides the starting point for immediate and roadmap recommendations.

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2. Lack of Domain Expertise

While owners of small businesses may recognize some of the initiatives that they should undertake, they may lack the knowledge in their organizations to appropriately plan and implement major projects. If they have IT staff, they are often stretched thin on tactical issues or dealing with projects that have required more resources than expected.

This also applies to understanding what IT can bring to the table. Learning about virtualization, for example, takes a little effort, but the rewards are substantial. Knowing that storing critical data off site can be done in a highly secure way requires an open mind, but again yields a much better outcome than the *status quo* in most cases.

3. Limited Budget

The most successful small businesses establish budgets for IT whether they are insourced or outsourced. This is a bit like having some of your stock portfolio in cash. Without an IT budget, it will not be possible to take advantage of technology advances that can actually save money, but require some investment for deployment.

The journey from reactive to proactive IT in a small business takes time, but stepping back from the daily grind to consider a few areas for your business is worth the effort. IT can be a strategic asset for your business with a little investment of management mindshare. Some IT projects pay for themselves. Server virtualization may be effectively self-funding in that one can execute a lease for a server virtualization for less than the savings in power, cooling, management and space.

Buy Versus Build – The Role Of Outsourcing

Virtually all businesses use outside services of one form or another. This is both a buy vs. build decision as well as a question of focus. For some small businesses, it is simply cheaper for them to hire an outside firm to be their IT department rather than hire a skilled insider. In other cases, it is a question of focus. Whenever there is an inside department, there is management overhead associated with it. It is important to know where to draw the lines for internal core competencies and what is better left outside the firm.

Taking the results of the gap analysis discussed above and assessing which items should be handled internally and externally is a worthwhile exercise. If an outside firm is selected, a key consideration is how proactive the service will be. The more that can be done to predict issues through remote monitoring, regular on-site visits, a documented methodology for assessing infrastructure health and technology scanning for new improvement opportunities, the better.

How To Measure Success

Like any improvement process, it does not end. It is important to loop back to the inventory of opportunities. This allows you to see how well you are reducing inefficient reactive expenditures in favor of aligning to best practices and planning IT rather than letting circumstance dictate outcomes. None of this needs to be heavy or time consuming. Lightweight reviews and on-going assessments are better than nothing and the benefits of proactivity are well worth the effort.

The classical way to measure success is to select some Key Performance Indicators up front and to hold both internal departments and external providers accountable. Shortfalls are opportunities for improvement rather

than reasons for blame. There will always be unpredicted circumstances, but paraphrasing Lord Kelvin, "If you do not measure it, you cannot improve it."

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