

An Information Technology Update for Small Businesses in China

Small businesses striving to incorporate information technology [IT] into their operations are faced with a daunting array of choices. Complicating their decisions in recent years is a surge in broadband deployment, accompanied by a heightened awareness of security issues. In this whitepaper IntelliClear examines a number of recent technology advances and their impact on small businesses, together with an update on the utility of PCs and their performance in a security-conscious world. IntelliClear was commissioned by Intel Corporation to develop and publish this whitepaper, which represents the views and opinions of IntelliClear without influence or bias to the views and opinions of any vendor or client.

The Purpose of this Whitepaper – Examining Selected Small Business Technology Trends

China-based small businesses (less than 100 people) are becoming robust investors in technology, driving efficiencies and advantages that help them thrive in an increasingly competitive world. Unlike large corporations, small businesses don't often have on-staff experts to study new developments and determine which technologies will provide the highest return on their investments. The purpose of this paper is to provide small business decision makers with valuable insights into the latest technologies found in today's business PCs and the impact of those technologies on the security, data reliability, and efficiency of the small business.

Why Small Businesses are Purchasing Technology at an Ever-Increasing Rate

Using PCs can help small businesses reduce overall operating costs, be more competitive, and grow. AMI-Partners, a New York based research firm specializing in

the global Small and Medium Business (SMB) market, reported in June, 2005 that "through adoption of IT and communications technologies and solutions, SMBs have emerged from a competitive disadvantaged stage during much of the 1990s to a level playing field today" versus large corporations. AMI states that as small businesses move to higher levels of IT adoption, "they seem well poised to evolve to a competitive stage with larger enterprises, due to a combination of IT and Web-enabled solutions, characteristic agility, and organizational efficiencies."¹

AMI estimates in 2005 that only 46 percent of SMBs in China will have adopted PCs, growing to 63 percent by 2008.² AMI "goes on to note that much of the (small business) growth will occur in the Asia-Pacific region and Eastern Europe, where developing economies such as India, China and Russia are continuing to spur the creation of new businesses — many of which are buying PCs and servers as they build out their IT infrastructure."³ Consequently, as the adoption of PCs increases, those small businesses who are delaying the adoption of PCs are facing increasing competitive challenges, business difficulties, and vulnerability to failure.

According to John Madden, Practice Director at Summit Strategies, a Boston-based consulting organization, "Technology investments by SMBs to increase productivity will continue. Small and medium businesses want the technology capabilities of large enterprises to improve their operations, but also because many of their customers and suppliers are demanding it."⁴

"PCs can help small businesses a great deal in many ways... PCs are like tools to help small businesses work more efficiently and become more cost and time efficient," says Zhang Ying, General Manager of the China Heavy Industry Machinery Association in Beijing, serving small businesses in the region.

A small business with PCs, broadband access to the Internet, email, and the appropriate business applications can maximize its efficiency and ability to manage the business no matter what industry it operates in. Small businesses that embrace the latest in information technology will clearly out-manuever those that don't,

having a distinct advantage in capturing on-going commerce opportunities.

"PCs help reduce costs and create a more competitive company... growth will come after that... PCs lead to the use of more advanced tools such as the Internet and networking for communication," says Tao Yong, Vice President of the Shanghai Computer Reseller Association. Mr. Yong's comments remind us that for a small business, the centerpiece of a viable competitive and operational strategy is the PC. From the development of flyers and other demand-generating marketing materials, to the use of accounting software and spreadsheets for financial analysis and on-going process improvement, well-performing PCs enable small businesses to manage their operations more effectively.

Security Threats and Viruses Should be Taken Seriously, but Should Not Delay the Adoption of PCs

According to the Connecticut-based Gartner Group, "50 percent of all small and midsize businesses will go out of business within three years if they can't get back their data in 24 hours (following a major loss of critical data)."⁵ For small businesses using PCs, security threats such as viruses and hacker attacks can seriously disrupt computer-based business operations. For that reason, it's important for small businesses to be proactive about keeping security and application software up-to-date to minimize potential disruption of their business.

"Security is becoming paramount, and it is more and more important to minimize the effects of viruses on small businesses," says Tao Yong. "As few as 20 percent of small businesses in China have realized the importance of security."

Up-to-date security software is a key element of an optimized security infrastructure. Regular updates can be facilitated through software subscriptions with manual and/or automatic updating capabilities. A more effective method available to small businesses is the use of Intel® Active Management Technology (Intel® AMT), now built-into some PCs that utilize Intel® processors. Intel AMT

allows technology support providers to proactively check and update software remotely from a central location.

Despite the anxiety to small businesses, viruses and other security threats can be easily avoided and are not sufficient reasons to delay the adoption of PCs. "I encourage small businesses concerned with viruses to focus on the positive sides of PC adoption. Updating anti-virus applications frequently, doing virus scans on a fixed schedule (weekly or daily) and being very careful when opening email attachments. All of these are key ways to deal efficiently and effectively with virus problems and other security threats," says Yong Ming, Business Executive at the Ying Hui Communication and Information Engineering Company, a well known wireless communications, voice over IP (VoIP), and IT reseller in Shanghai serving a large population of small businesses.

Symantec Corporation recently counseled small businesses: "Even the smallest of businesses are not immune to Internet threats... The introduction of new technologies, along with the increasing sophistication of Internet threats, calls for a defensive in-depth solution."⁶ A comprehensive security strategy is achievable by small businesses and includes hardware, software, and policies that address common points of vulnerability.

Buffer Overflow Viruses and Worm Attacks are Common but Can be Prevented

According to a March, 2005 Internet Security Threat Report by Symantec Corporation, buffer overflow attacks, such as the now infamous "Slammer" and "Blaster" outbreaks, were the third most common attack in the 2nd half of 2004 and appear to be on the rise today.⁷

Effective protection against these attacks can be found today within the PC itself. Execute Disable Bit, a built-in feature of Intel® processors, works with Windows® XP Service Pack 2 to guard against the entire class of viruses and worms that infect computers using this "buffer overflow" technique. The Bit prevents this malicious software from executing and possibly propagating to the network and other computers.

"These viruses are present everywhere, especially in companies that have networks and are online. So it is very common for small businesses to be attacked," says Shao Yong Xin, Senior Manager of Business Development (including small businesses) at the China Construction Bank in Shanghai, one of the four largest banks in China. Wei Xiu Li, the Credit Department Manager at the Agricultural Bank of China adds: "Preventing any viruses, especially worms, will be valuable to small businesses."

Other Tips and Technologies for Maintaining a Secure Environment

While security and anti-virus software is crucial in protecting a small business from disruption, it is ineffective if it interferes with the user's ability to get their job done, or fails to operate due to user intervention.

"The negative impact on PC performance from security software can be significant. This may slow down the PC if it is not powerful enough... for Internet-based businesses this can be a big impact," says Wang Shuo, General Manager of the Sino-Japan Software Development Association, providing IT services to small businesses.

While PC performance is critical in keeping small business employees productive, it is also critical in keeping small business employees from tampering with security software. Shao Yong Xin comments: "I've seen many individuals at small businesses disabling or tampering with their PCs security software, because that software in many cases makes certain daily required functions of the PC unavailable."

Microsoft, in a May 2005 support article, comments that turning off virus protection and/or firewalls can leave systems vulnerable to and unprotected against virus attacks and infections.⁸

The issue of performance and security software tampering can be managed by ensuring users are provided with PCs that can adequately perform under the strain of virus scanning and other security related computing overhead. Small businesses shouldn't underestimate the overhead that state-of-the-art security software can put on a PC.

Squeezing an additional one to two years out of a two to three year PC life-cycle may not be a wise choice and could result in lost productivity. Small businesses should insist on PCs that are designed for business and are equipped with processors that provide plenty of head room for growth and security software overhead.

With so much attention on PC security, it's easy to forget about the issue of basic user access rights and authentication. The ability to control business access to files and networks, to those with need-to-know rights and the skills to handle the data, is critical so as to ensure privacy of employee and customer data, avoid sabotage, and reduce the potential issues in case of physical theft of computers. Symantec urges businesses to restrict and control network access by maintaining and enforcing firm policies.⁹

According to an AMI SMB study in 2004 a large percentage of SMBs were expected to hire new employees within a 12-month period.¹⁰ With the upswing in new recruits comes the vulnerability associated with more users, more access, and an increase in the potential for malicious activities.

"Controlling user access is important and should be taken more seriously. Most large companies have access right limitations and strict policies – so should small businesses," says Wei Xiu Li.

The Role of External Service Providers

Capitalizing on the widespread attention focused on security, a variety of vendors and service providers are offering products and services to help prevent infections and security breaches, giving small businesses a multitude of choices in protecting their business. "...This possibility would be quite helpful, as most small businesses do not have a specialized person to look after PCs," says Zhang Ying.

Service providers play a critical role in ensuring small businesses are adequately protected, and receive help to quickly recover in the event a breach does take place. Market research firm, AC Nielsen, reports that "a growing

number of SMBs in the United States are turning to a trusted service provider to design, install, and maintain their security solutions.”¹¹ In a 2004 study in North America research firm Infonetix reported that “more than 38 percent of small businesses and 50 percent of medium-sized businesses get one or more of these essential security functions - virus scanning, firewall, authentication, VPN client, and intrusion detection and prevention - from a service provider.”¹² IntelliClear believes that these same service provider trends will evolve in China at an increasingly accelerated pace.

With the help of a service provider, small businesses can develop a comprehensive security strategy utilizing existing capabilities of the operating system, and hardware components found in business-class PCs. Experienced service providers can also evaluate information access policies and procedures to uncover physical vulnerabilities, and recommend additional security software if necessary.

Businesses should look for service providers that have remote support capabilities that allow them to examine, troubleshoot, and repair systems over the network. Remote support capabilities provide small businesses with not only timely resolution of problems, but potential cost savings due to fewer on-site technical service visits. Large corporations have been using remote management capabilities for years to support their IT infrastructures, reduce costs, and preserve precious IT resources.

These remote services are extending to the management of software environments. Features that enable service providers to assess and update software on networked PCs can help keep security software up-to-date; allow for the understanding of what software is installed to advise on its ability to handle business growth; identify how many copies of software are in use in order to minimize licensing costs; and identify which versions of software are installed in order to assess the PC's capability to meet regulations for privacy and accurate financial reporting.

In the past, remote services were limited by an inability to operate on PCs that were powered off or were unable to boot. Intel AMT, overcomes that limitation by providing

the ability to diagnose problems, replace system files, update security software, and restore systems to normal operation even when the PC is turned off or the operating system cannot be started. This capability is available only in systems using Intel chips.

These remote service provider operations are likely to become more common as broadband becomes ubiquitous and Internet-based services reach the mainstream. As this happens, remote management of PCs will be a valuable service for small businesses. With respect to remote PC management Tao Yong comments: “It isn't unusual for a PC repair to take one-half of a day or more... this kind of a service should significantly reduce that time.”

A Second Hard Disk – Simple Insurance for Data Protection

For data protection, having a second hard drive in a PC continuously copying information from the primary hard drive can be invaluable. This feature can provide data redundancy in the event of a system or hard drive failure. Until recently, this capability, known as “disk mirroring,” required a special add-in card and software. But this year Intel has begun building this feature, called Intel® Matrix Storage Technology, into chips used in business-class PCs.

“A synchronized 2nd hard disk drive could be very valuable to small businesses, provided it is intelligent, automatic, and independent, so that it does not require a lot of upkeep,” says Yong Ming.

Voice Over IP (VoIP) Enabled Through a PC, Delivering a Better Telephone

Voice over IP (VoIP) technology sends telephone calls over the Internet, often at substantially lower costs than regular telephone calls. Worldwide SMB IP Telephony VoIP spending is expected to grow at a CAGR of 41 percent from 2003 to 2008, reaching an estimated total spending in 2008 of \$4.5 billion according to AMI.¹³ Many small businesses have already surmised that cost savings and efficiency gains are just the start of how VoIP can benefit their business.

One particular implementation of VoIP is the use of “PC soft-phones,” software that acts like a telephone and runs on a PC. PC soft-phones using VoIP (e.g. services such as Skype*) can help businesses serve their customers better and operate more efficiently by streamlining communication, reducing costs, while enjoying high-fidelity voice quality on PC-to-PC phone calls.

“Small businesses can absolutely use their PCs as telephones! This can save them the cost of installing regular phones, and allow connectivity from wherever they connect to the Internet... the price is not very high,” says Yong Ming.

Conclusions – Educate, Plan, and Invest

The opportunities for small businesses to improve their operations through the effective use of information technology - mainly the new breed of business PCs equipped with advanced Intel processors - are enormous and multi-dimensional. A number of valuable new technologies relating to security, remote support, reliable data redundancy, and VoIP have been recently introduced and will help small businesses capture these opportunities through disciplined education, planning, and investment. By working with solution providers small businesses can deploy these technologies and gain the benefits associated with ongoing effective technology usage.

IntelliClear recommendations:

1. Keep security software up-to-date.
2. Maintain optimal security including anti-virus software, Microsoft* Windows* XP Service Pack 2, and Intel's built-in Execute Disable bit technology.
3. Choose PCs that are designed for business, with performance enough to prevent security software from interfering with user computing tasks.
4. Select a service provider who can help with security and remote computer support.
5. Insist on PCs with Intel® Active Management Technology for better remote support.
6. Protect business information with Intel® Matrix Storage Technology and a second hard drive.

IntelliClear recommendations (continued):

7. Deploy PC-based VoIP to reduce costs and increase business efficiencies.

About IntelliClear (www.intelliclear.com)

IntelliClear is a market research and business consulting firm committed to the delivery of actionable market intelligence to the global IT community. IntelliClear's mission is to bring clarity to IT market intelligence by delivering results-oriented research, responsive industry experience, and effective data synthesis - leading to confident go-to-market plans. IntelliClear leverages the experiences of seasoned IT and market research professionals, while utilizing its global network of industry consultants and research partners to execute projects across a broad spectrum of disciplines and geographies.

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¹³ Data is from the September 2004 AMI-Partners' report titled The SMB Global Model. Retrieved from the eMarketer database on October 10, 2005

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