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AICPA

AICPA 2003 TOP TECHNOLOGIES

INFORMATION SECURITY IS TOP CONCERN AMONG CPAS

By Roman H. Kepczyk, CPA, CITP

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What is your top technology concern for 2003?

If you said "Information Security," then you're on the mark. The results of the Top Technologies for 2003 are in, and not surprisingly, security and the manner in which it affects a practice or business is a primary component of this year's list.

This year's Top Technologies list brought a few surprises as well, including the addition of six new items that broke into the final listing, including Business Information Management, Application Integration, Wireless Technologies, Intrusion Detection, Customer Relationship Management and Privacy. While Disaster Recovery Planning and Remote Connectivity held their own on the list, participants in the process moved Web Services up to the number four position from number eight in 2002.

This year had the largest participation ever with the Top Technologies

program; 201 members of the AICPA and Information Technology Alliance (ITA) voted, including 142 Certified Information Technology Professionals (CITP) — the designation awarded to CPAs have both an extensive knowledge of business process/management and experience in the practical application of technology.

Items on the 2003 list will be covered in future articles and case studies provided to members of the AICPA IT Membership Section. The list will also be presented at various technology conferences, including the TECH Conference to be held June 22-25, 2003, at the Bellagio in Las Vegas, Nev.

The AICPA Top Technologies Task Force would like to sincerely thank those members of the ITA who contributed their time, knowledge and input into the development of the list. Members serving on the Task Force included Susan Bradley, CPA, CITP, of Tamiyasu, Smith, Horn and Braun in Fresno, Calif.; David Cieslak, CPA, CITP, GSEC, of the Information Technology Group, Inc. in Encino, Calif.; and Tim Stull, CPA, CITP, of Continental Airlines in Houston, Texas.

Here is a complete list of all 10 top technologies.

1. **Information Security:** The hardware, software, processes and pro-

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cedures in place to protect an organization's information systems from internal and external threats. This includes firewalls, anti-virus, password management, patches, locked facilities, IP strategy and perimeter control.

2. **Business Information Management:** The process of capturing, indexing, storing, retrieving, searching and managing documents electronically, including knowledge and database management (using PDF and other formats). Business Information Management brings to fruition the promise of the "paperless office."

3. **Application Integration:** The ability of different operating systems, applications and databases to "talk" to each other with information flowing freely regardless of application, language or platform.

4. **Web Services:** Applications that use the Internet as their infrastructure and access tool, including both Web-enabled

and Web-based applications. Examples include Java applications, Microsoft's .Net initiative and today's application service providers (ASP) and business portals.

5. **Disaster Recovery Planning:** The development, monitoring and updating of the process for organizational business continuation in the event of a loss of business information resources due to impairments, such as theft, virus infestation, weather damage, accidents or other malicious destruction (includes business continuation and contingency planning).

6 **Wireless Technologies:** The transfer of voice or data from one machine to another via the airwaves without physical connectivity. Examples include cellular, satellite, infrared, Bluetooth, wireless (WiFi), 3G and two-way paging.

7. **Intrusion Detection:** Software or hardware solutions, such as Tripwire, that list and track successful and unsuccessful login attempts on a network. Intrusion detection capabilities are being built into many of today's firewall applications.

8. **Remote Connectivity:** Technology that allows a user to connect to a computer from a distant location outside the office. Examples would include RAS (Remote Access Services), WTS (Windows Terminal Server), Citrix, MangoMind and PCAnywhere.

9. **Customer Relationship Management:** Processes that manage all customer touch points, including Call Center Technologies, eCommerce, Data Warehousing and all other technologies used to facilitate communications with customers and prospects.

10. **Privacy:** Protection from unauthorized users and from unauthorized usage by those with access to the data as more information and processes are converted to a digital format. This includes complying with local, state, national and international laws.

2003 AICPA Emerging Technologies Watch List

In the past, one of the results of the Top Technologies initiative was the development of the Emerging Technologies Watch List to expose members to new technologies that could have a significant commercial impact in the next few years.

Realizing that the development of this list was more effectively accomplished by a small group of technologically astute professionals than in an open Web survey, the Top Technologies task force worked with the ITA to create the watch list.

♦ **ID/Authentication:** This includes current and evolving technologies for verifying the identity of a user who is logging onto a computer system or verifying the integrity of a transmitted message. Examples include password scenarios,

LISA TRAINA: PRIVATE MATTERS, PUBLIC OPINION

By Scott H. Cytron, ABC

In our mass-media world where private matters quickly become public opinion, Lisa Traina is one CPA who works diligently with her clients to ensure privacy is first and foremost at the top of the list.

Since 1998, Traina has owned her own CPA firm in Baton Rouge, La., and now also maintains Highland Advisory Group (*www.highlandag.com*) — a partnership of skilled consultants who help meet each other's client needs. Almost 100 percent of her practice is devoted to the IT (information technology) and IS (information systems) audit function with community banks throughout Louisiana, a specialty that provides numerous engagements, many of which are with retained clients.

With nearly 25 years as a CPA, Traina has worked in both public practice, and business and industry, most notably for nine years with First National Banker's Bank in Baton Rouge where she honed her banking skills before hanging her own shingle. Based on the effects of the Graham-Leach-Bliley Act and a general concern within the financial arena that privacy is key to doing business, Traina

is busier than ever ensuring her banking clients' systems are safe and secure.

"Banks have always been respectful of privacy issues, so consulting in this function isn't anything new," she says. "What makes the difference is having a CPA as the consultant rather than an IT person or someone who only has technical credentials. People really value the independence, value and integrity a CPA brings to the table."

Traina has always focused much of her work on the security of information as part of her consulting services, but legislation has put particular emphasis on privacy in the last several years. Some of Traina's work even comes from referrals from other CPA firms — those that feel too inexperienced to consult in the IT audit function even though qualified CPAs within firms are used to performing audits in other arenas.

And, even though the IT/IS audit requirement is mostly unofficial, she says regulators and examiners are telling banks that an audit must be done to maintain integrity and trust with customers. Banking customers don't just demand privacy; they expect it.

Lisa Traina, CPA

Traina's first step in the audit process is to do an enhanced IS review where she looks at every electronic function in the bank, including the debit card system, check processing, local area network, wire transfer function and Internet access/banking. She offers an overview, looking for weaknesses and flaws in controls.

Often, to the bank's surprise, the findings usually aren't all related to technology, she says. In fact, many weaknesses fall into personnel-related issues where the system of checks and balances is somewhat skewed or may not exist at all. For example, theft and privacy are chief concerns if there is only one person setting up customers for Internet banking services, and there isn't a system to ensure the employee is creating valid, authorized cards.

"My favorite privacy problem is a password written on a sticky note that is

Information Security is Top Concern Among CPAs

digital signatures, biometrics and dealing with issues like IP spoofing.

♦ **M-Commerce:** Mobile Commerce uses smart phones and handheld computers with wireless connections to place orders and transact business over the Web. While accepted in Europe and the Far East, M-Commerce has had slow adoption in North America.

♦ **Tablet PC:** Tablet PCs include the next evolution of the personal computer in a tablet format that allows both handwritten and voice input to interact with the applications found on a computer. The system uses a pen-based stylus,

in addition to the traditional keyboard (not required). Tablet PCs provide expanded portability because they can be used in a wireless environment (see related story on page 7).

♦ **3G Wireless:** 3G or Third Generation wireless is designed for high-speed multimedia data and voice. Its goals include high-quality audio and video, and advanced global roaming — the ability to go anywhere and automatically be handed off to whatever wireless system is available (in-house phone system, cellular, satellite).

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attached to a computer monitor," she says. "The first question I ask is 'who is your janitor?' Banks laugh when I ask this question, but think about it: Password access opens an organization up to several privacy problems. For example, depending on whether the operating system is Microsoft Windows 95 or 98, any perpetrator can cancel out of the log-in prompt and not even need a password to get to the information on the local hard drive."

Traina adds that one of the easiest ways to obtain confidential information is to poke through the box of ready-to-shred paper that usually is present at everyone's desk. Most of the time, she says, the cause isn't the intentional fault of the bank; it could be just a case of overlook-

ing what may be overtly obvious to her and others serving in this capacity.

Following the audit, Traina compiles a report and meets one on one with management or the board of directors to make sure they understand the issues. She likens the situation to risk and reward.

"For lack of a better word, this is an insurance issue with a cost/benefit analysis. The cost to absolutely protect information can be high, so banks deal with the recommendations as a feasibility issue, and must decide what risk they are willing to take if the janitor does infiltrate the system. I don't tell them you have to do A, B or C; I tell them the risks associated with each issue, make recommendations and let them decide how to handle it."

Traina also is on the lookout for scammers who take advantage of banks (and others) by offering to "test" their systems from outside by hacking or penetration testing. She says organizations spend "obscene" amounts of money in this scenario.

"Consultants are preying on fear, and the testing these people offer is only good for one day, so an organization must decide how much aggressive hacking or privacy testing they want to do," she says. "Privacy is an entire picture to look at, and organizations cannot focus on one area and spend all their money just fixing one problem."

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TRUST SERVICES PRINCIPLES AND CRITERIA INCLUDED IN AICPA PROFESSIONAL LITERATURE

The new version 1.0 of the Trust Services Principles and Criteria framework, which includes the WebTrust and SysTrust services, will be included in the AICPA Technical Practice Aids (Volume 2) loose-leaf edition beginning January 2003, and the paperback edition beginning June 2003. The Trust Services framework will be included under a new section, Suitable Trust Services Criteria and Illustrations, and will be accompanied by practitioner guidance, suitable criteria for security, availability, processing integrity, online privacy and confidentiality, as well as sample reports.

Beginning January 2003 (in both loose-leaf and paperback editions), there will be a footnote reference in Chapter 1 (Attestation Standards) of SSAE No. 10, Attestation Standards: Revision and Recodification (AICPA, Professional Standards, Volume 1, AT Sec. 101), as amended, as to the existence of the new Trust Services Principles and Criteria.

Version 1.0 of the Trust Services Principles and Criteria will be officially effective for engagements beginning April 1, 2003, and will be encouraged for earlier engagements. ITU

MAP SURVEY SHOWS HIGH INTERNET USE

Anyone interested in improving performance and profitability should be familiar with the National Management of an Accounting Practice (MAP) Survey. Presented by the PCPS (the AICPA Alliance for CPA Firms), along with the Texas Society of CPAs, the 2002 survey boasted an all-time high response rate of 2,500 firms that provided answers to a series of questions that cover virtually every aspect of practice management.

The average size of a respondent firm is 12 employees and eight of those 12 are CPAs. Among other findings, CPA firms continue to thrive despite the turbulent economy: 98 percent of all respondent firms either grew or remained the same size in the past year, and 13 percent increased by 20 percent or more.

In the technology arena, CPA firms are increasingly taking

advantage of the Internet: 98 percent of the respondents now have email, 60 percent of firms surveyed have a Web site and the same percentage file electronic tax returns. Along these lines, the Web also is used (in descending percentages) for tax research, purchasing supplies, accounting research, planning, recruiting and marketing.

How much do you spend on technology? A little more than a third of respondents said they spent between 1 and 2.5 percent of their revenues on technology, 28 percent spent between 4 and 5 percent, and 19 percent spent more than 5 percent.

Survey results are available as a member benefit to any PCPS firm member; nonmember firms may purchase the results by visiting *https://map.pcps.org*. The Web site also provides an overview, sample reports and a list of participating state CPA societies. ITU

COMDEX 2002

Gadgets and Gizmos Dominate Latest Technology Showcase

By Janis R. Monroe, McA, CPA

Janis R. Monroe, McA, CPA, founded MicroMash, an accounting education company, where she remains today as a development consultant for the company, now a subsidiary of Thomson Publishing. In addition to consulting on growth and technology strategies, Monroe recently joined SGI, a company that just released a Security Diagnostic to help small companies determined their exposure to IT security risks with recommended procedures to reduce exposure. She is a member of the AICPA IT Executive Committee

When a new, subdued Comdex presented a much smaller vendor display in 2002, old-time attendees questioned causes such as the economy, fear of terror attacks or something more technical: Is Comdex dealing with a mature industry that does not justify a trade show?

Regardless, there were many innovations presented at the Las Vegas-based show, and here is a summary of some of the ones CPAs and accountants will want to review.

Total Mobility — Logitech "Digital Writing"

One of the more creative products was the Logitech Pen and Paper product, "digital writing," which offers total mobility, because all that is necessary to carry is the pen and a digital paper notebook.

With the Logitech io™ pen, users can easily share, store, organize and retrieve their handwritten information by simply writing with ink or paper the way we have for thousands of years. An optical sensor embedded in the pen captures the handwritten images, storing up to 40 pages in memory. The required digital paper that enables the capture of handwritten notes contains patented preprinted tiny dots that form a light screen effect. This pattern is read by an optical sensor embedded in the pen that stores the information in non-volatile memory until the pen is docked in its USB cradle.

When the pen is docked, users can export their handwritten information to popular applications like Microsoft (MS) Word, Adobe Illustrator and calendaring tools, including MS Outlook, Lotus Notes or any MAPI-supported email application. They also can create Post-it Note reminders on their PC desktop. Note takers also can categorize and search handwritten documents through the support of limited handwriting recognition by means of ICR (intelligent character recognition) fields.

The $199 Logitech io retail package includes the pen, a rapid-charging USB cradle, Logitech io Software, one Mead Cambridge Limited Digital Notebook, Post-it Software Notes-Lite and one pocketbook of Post-it® Notes for Digital Pens from 3M, an AC adaptor and five ink refills.

Super Storage — DiskOnKey

The popularity of the USB portable disk was displayed at several press functions, as well as on the show floor. The driverless Disk OnKey has the power and functionality of a 32-bit ARM7CPU processor, allowing the device to run additional applications. Numerous products exist, but the portability (even between Mac and PC) requiring no drivers makes this an ideal choice. The device retails from a 16MB at under $20, to a 512 MB at $259. A note for laptop users: Many laptop PCs have the USB ports located in such a way that it makes it difficult to use the key devices with any other USB accessory.

Hands-off — FreeSpeak Earphone

For Bluetooth users, Jabra introduced a cordless cellular headset that works with the latest Bluetooth phones and with many other mobile phones through a Bluetooth adaptor. The one-ounce Free Speak earphone retails for $99 for Bluetooth phones, and $179 for non-Bluetooth phones.

Start Replacement — NeuDESK

A Beta version of NeuTrino's NeuDESK was viewed during the show. This do-it-all software replaces the Windows Start menu and allows the user to type in

Gadgets and Gizmos Dominate Latest Technology Showcase

commands rather than search and click with Windows. The software allows scanned images, custom forms and music to be stored and retrieved. A separate module can be included to control various electronic appliances. Emails are automatically linked to contacts and automatic backups can be scheduled.

Web Efficiency — ResearchDesk

Research Desk, a turbocharged MS Office and Internet Explorer, opens, views, saves and edits dozens of Web sites and related documents in a single application. Described as "the World's First Professional WebBrowser," this site browses dozens of Web sites simultaneously with the tabbed/MDI user interface, offers grammar and spell check Web form entries, annotates and saves complete Web pages with "sticky notes" and a highlighter, and saves Web pages as MS Word documents with the date, time and URL automatically included.

The User views and edits Office documents in Research Desk, creates and opens workspaces with a single command, and searches across all open documents and Web pages at once. The result is an application where everything works in concert to help the user get more done in less time.

Junk Mail No More — MailWasher

An anti-SPAM software product, MailWasher combats junk mail and unwanted attachments from email by allowing messages to be previewed before they are downloaded or deleted. A unique feature is the "bounce" application that returns messages to spammer/senders informing them that the recipient's address is invalid.

MailWasher works extraordinarily quickly because it simply downloads the header information of an email, leaving the body of a message on the ISP server. By filtering SPAM from a user's inbox, MailWasher saves both time and resources because it only allows legitimate emails to reach users. Users can also protect their computers from viruses by detecting infected emails before they are downloaded.

MailWasher Version 2.0 is free to download and will not expire. Users are encouraged to support the product

by donation with incentives of ongoing support and the removal of a scrolling promotion about the software.

Seamless File Transfer — LapLink Everywhere

LapLink Everywhere makes it easier to travel by providing users their MS Outlook or Outlook Express email, contacts and calendar. LapLink obtains and transfers files via the Internet using any device — even at an airport kiosk — without software for the accessing device.

The software has built-in security features with user-defined computer names, user name and passwords. No firewall configuration is required, and the system denies unauthorized client access with encrypted transfers (40bit or 128 bit SSL). LapLink Everywhere is priced at $89.95 per year, or $9.95 per month.

Hard Disk — Maxtor

Maxtor ups the ante for a portable hard disk with personal storage 5000 XT, $399 for 250 gigabytes. That is a bigger capacity than most personal computers and most firm networks.

Remote Pet Babysitter

For the person who has everything, including a pet, there was a pet-modem-feeder sold on the floor for less than $700. The proud owner could call the pet to the feeder via the telephone over the Internet, feed the animal from the storage bin attached to the feeder and provide water to the water bowl.

Oh, well, never say there isn't something new!
Contact Janis R. Monroe at _jansoft@earthlink.net_.

Logitech® io™ Personal Digital Pen & Paper — _www.logitech.com_
DiskonKey — _www.diskonkey.com_
FreeSpeak Earphone — _www.jabra.com_
NEUdesk — www.nt4me.com
ResearchDesk — _www.winferno.com_
MailWasher — _www.mailwasher.net_
LapLink Everywhere — _www.laplink.com_
Maxtor — _www.maxtor.com_

EMERGING TECHNOLOGIES

Tablet PC — Painkiller OR Pain?

By Richard Oppenheim, CPA, CITP

Richard Oppenheim, CPA, CITP, is founder of SysTrust Services, a provider of products for the assessment, verification and certification of an enterprise's operational reliability. He has worked with computer technology, information systems and business operations for more than four decades.

On Nov. 7, 2002, Microsoft (MS) officially launched its latest operating system (OS), the Tablet PC Edition of Windows XP, designed specifically for Tablet PCs manufactured and sold by other companies. In addition to many hardware vendors building and selling the new tablets, interest by the CPA community is expected to be high; Tablet PCs is one of the Emerging Technologies for 2003 (see page 5).

Tablet PCs are a cross-breed that have the same physical characteristics as a laptop, with a monitor, keyboard and connectors. The added key feature is the capability of capturing text and diagrams written on the screen with a special stylus. Traditional business applications can be installed and used just like any other laptop or desktop. If you want to include MS Word and Excel, a special Office Edition for the tablet is available.

Even after the initial look, there are lots of questions. First, the comparison to laptops is inevitable. Components are similar, with the tablet physically lighter and smaller. The insides – chip, hard disk and electronics — are comparable as well. However, tablet screens are smaller than their laptop cousins, and different vendors have different ways of attaching a keyboard (also smaller than the laptop). Most tablets have docking stations that can enable attachment to a larger screen and other connected devices.

Typing is the operational question for using a tablet vs. a laptop. I can speed my way around a QWERTY (traditional) keyboard faster than I can write out legible text. My wife, who helped with the tablet test, has a psychotherapy practice, so she knows that when working with a client, handwritten notes are the only way during a session. Typing would be intrusive and distracting.

When it comes to drawing pictures and diagrams, control of the pen is better than a mouse. I understand the Denver Broncos are converting their playbook to MS Visio diagrams. Who knows … we may see sports teams giving

up the chalkboard and switching to a tablet computer (although not for a while)!

Tablet PCs represent a continuation in the evolving line of mobile computers, but there are a few drawbacks: Reliability will be questionable for a few years, built-in wireless features are not present and handwriting recognition is imperfect. Microsoft has done surprisingly little to adapt Windows and Office to the digital pen-and-ink capability. Version 1 of the OS supports a Journal application that can handle handwriting and conversion to text, although Microsoft readily admits the conversion is not perfect.

The tablet stylus looks like a PDA's (Palm, for example) stylus, but that is where the similarity ends. You can tap a PDA with anything and execute functions on the handheld. For the Tablet PC, the stylus has an electromagnetic end and is a required component to use on the screen. No other pointing device will work, not a finger, stick or a PDA stylus. The Tablet stylus retails for $40. That may be a good business to consider: One can create an endless supply of styli — fat, skinny, designer and others.

The first tablets will not likely be mainstream products. Instead, they could be used by people, like my wife, who deeply desire to take notes on a PC instead of paper. With the bigger screens, another good application for Tablet PCs is reading large amounts of text. Magazines and books are being published in digital format (see *www.zinio.com* for digital magazine publishing). The light weight and size of the tablet support these functions very well.

To overcome past pen-based computing product failures, Microsoft hopes to succeed by narrowing the scope of what it expects people to do with the new Tablet PCs. Clearly, Microsoft is positioning the tablets as machines that are full-blown standard Windows PCs. Unfortunately, Word and Outlook do not yet support handwriting recognition from Windows Tablet Edition, so you can't convert

Tablet PC — Painkiller OR Pain?

those comments to editable text, and non-tablet email recipients must view written responses as .gifs or attached HTML files.

When it comes to everyday use, the Office expansion pack and Journal are the most usable Tablet Edition applications. If you take notes, Journal proves excellent and easy to use. You can select different pen types, colors, and styles; highlight and erase text; and even search your notes. Journal uses handwriting recognition to log certain words and find them later, and also includes a text-correction tool that can find and replace misspelled words in your own handwriting.

Journal works better than even traditional pen-and-paper note taking, too, because you can use the stylus to rearrange written text, insert spaces and export notes to email. With Journal, you can convert your notes to text, but the handwriting-recognition quality depends on your writing legibility. In version 1, handwriting recognition is not very reliable.

Tablet prices range from $1,800 to $3,000, typically about $250 more than a comparably equipped laptop. So if you need to take digital notes at meetings, or do quite a bit of onscreen reading of long documents and don't mind experimenting with the new, the Tablet PC may be for you.

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Three examples of the Tablet PC

Acer — *www.global.acer.com:* TravelMate C102Ti looks like an ultra portable laptop. The keyboard is fair with a slight curve to the rows of keys. The buttons for navigating in tablet mode are confusing. The stylus is small and flimsy.

HP/Compaq — *http://h18000.www1.hp.com/products/ tabletpc:* This is the most innovative model. Like a pure slate, it has the computer guts built into the screen and

Vendor	Processor	RAM	Storage	Battery	Screen	Size Weight
Acer TravelMate TMC-102	800Mhz P3	128Mb/256Mb	20GB or 30GB Hard Drive, External USB CD-ROM	Lithium Ion, Battery life 2.5 hours	10.4 inches, max resolution 1024x768	9.9" × 8.2" × 1-1.16" 3.2 lbs
HP/Compaq TC1000	1Ghz Transmeta Crusoe TM5800	256Mb, 728Mb	30GB Hard Drive	6 cell Lithium Ion, Battery life — 5+ hours	10.4 inches, max resolution 1024x768	10.8" × 8.5" × .8" 3lbs, 4lbs with keyboard
Toshiba Portege 3500	1.3Ghz P3	256Mb	30Gb, 40Gb, 50Gb, or 60Gb	Lithium Ion, life 3.5 hours	12.1" TFT, max resolution 1024x768	11.6" × 9.2" × 1.2" 4.1lbs

As for note-taking, it's alternately thrilling *and* irritating. The slick surface of most tablets deteriorates your handwriting, and Windows' stroke recognition is slow. For example, with cursive, Windows often can't keep up, but fills in parts of letters later. Overall, however, it's liberating to use a notebook PC like a true paper notebook, especially if you prefer to avoid clattery typing noises in meetings or while on the phone.

comes with a removable keyboard. With the keyboard attached, it looks and works like a standard laptop. In slate mode with the keyboard off, it's the lightest, thinnest model available.

Toshiba — *www.tabletpc.toshiba.com:* The Portege 3505 is a full-featured model, with a big screen and a very good keyboard. It also is the largest. Navigation buttons are fair. ITU

SAS 94: ISSUES AND OPPORTUNITIES

By Bruce Nearon, CPA

Bruce Nearon, CPA, is director of IT Security Audit for The Cohn Consulting Group, a division of J.H. Cohn LLP in Roseland, N.J. He also is chair of the New York State Society of CPAs' Emerging Technologies Committee and a member of the Society's Auditing Standards and Procedures Committee.

With the many challenges auditors currently face, we also must now consider SAS 94, "The Effect of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit."

SAS 94 is a recently effective SAS (Statement on Auditing Standards) that describes the auditor's responsibility to consider information technology (IT) controls as the controls relate to the audits of financial statements. The effective date is for financial statement periods that begin on or after June 1, 2001, and as a result, this SAS is currently effective for most audits.

SAS 94 provides additional guidance to auditors in complying with the second standard of fieldwork that states: "A sufficient understanding of internal control is to be obtained to plan the audit and to determine the nature, timing and extent of the tests to be performed." Over the years, auditors of small- and mid-sized businesses have reduced the amount of work performed on internal control. SAS 94 may reverse this trend as companies of all sizes rely on IT, and auditors consider the relationship between IT security and control to substantive tests, audit sampling and audit evidence.

IT is pervasive and critical to each company's operations, especially in finance and accounting. IT also affects an entity's business risk and the CPA's audit engagement risk. However, by properly applying SAS 94, CPAs, including auditors, consultants and members in industry, are presented with unique opportunities.

SAS 94 amends earlier SASs — specifically SAS 55 and SAS 78 — that outlined the auditor's responsibility to consider internal control. For some audits, SAS 94 potentially requires minimum changes to audit procedures. Such audits may include those in which the client does not have a sophisticated IT system that affects or processes financial information, and one in which there is credible, sufficient evidential matter available to support the auditor's opinion on the financial statements. In this case, the auditor may assume maximum control risk and rely on substantive tests. Maximum control risk is the risk that, given that an error or fraud has occurred, the internal control system will fail to prevent or detect a material misstatement in the financial statements. The questions the auditor needs to answer in this case are:

- ◆ How does the auditor determine the extent of sophistication regarding the IT system?
- ◆ How should audit documentation show that audit evidence derived solely from substantive tests is credible?

Therefore, even for companies with unsophisticated IT systems where maximum control risk is assumed, the auditor's workpapers should include certain documentation with respect to SAS 94.

If companies have IT systems that are moderately sophisticated or complex, and the auditor assumes maximum control risk, additional audit work may be required depending on the extent of IT controls that were documented in prior years. In audits where control risk was assessed at less than maximum in prior years, it is presumed that additional procedures and requisite documentation is included in the prior period's work papers.

Opportunities

SAS 94 provides the CPA with the opportunity to improve the quality, effectiveness and value of the audit, and create a basis for a greater reliance on risk-based auditing by completing the initial steps to reduce manual substantive testing and increase the use of computer-assisted audit techniques (CAATs) for substantive tests.

Often, companies will engage CPAs to provide additional information related to internal control weaknesses noted in the management comment letter, as well as assist in mitigating those weaknesses. When auditors bring IT internal control issues to management's attention, the company is better able to assess the risk and correct identified weaknesses.

Jump the Hurdles

SAS 94 implementation does not come without a cost. There are issues CPA firms should consider before they and their clients can reap the benefits.

Auditors and IT professionals must understand SAS 94, IT control risks, digital audit evidence and ultimate audit risk. Auditors are in the spotlight because of Enron, WorldCom and other recent financial failures. These failures were due, in part, to a breakdown of and/or the ability to circumvent internal control.

Management may resist additional audit procedures, especially when they increase audit fees and require additional time. Even though the additional fees may be a tiny fraction of the resources a company spends on IT, management often fails to see the need to assume responsibility for controlling IT like they do for other financial and physical assets. Management often is aware that weaknesses exist in IT security and control; however, management often is willing to accept whatever risks exist. One way auditors can deal with this situation is in written communications with management explaining SAS 94, IT security and control risk. Another method is to conduct a SAS 94 planning meeting with the appropriate senior executives.

Once the hurdle of management resistance is overcome, auditors must deal with the firm's ability to comply with SAS 94. Many small- and mid-sized firms do not have the expertise in-house to perform SAS 94 procedures. This obstacle can be overcome in three ways.

1. Firms can provide formal training in IT auditing to various members of the audit staff.
2. Whether it currently has an IT department, the firm may use existing IT resources or establish an IT audit group.
3. Firms may outsource these procedures to another CPA firm that has well-trained, competent IT auditors.

Essential SAS 94 Audit Procedures

At a minimum, auditors should document the attributes of the client's IT environment to determine the level of IT sophistication used in processing financial information and to decide what parts are integral to the business operations. Often, the prior-year's audit documentation and permanent file already will have most of the required information. If the auditor determines the client has a moderate or highly sophisticated IT system, then the auditor should obtain additional general information about the IT control environment and control procedures.

The auditor should consider testing general controls for mid- to large-sized clients with moderate or highly sophisticated IT systems. General controls include IT operations, system and application development and maintenance, physical security, and access controls.

After testing general controls, application control procedures may be performed. These include collecting information and testing controls over input, error correction, processing, and output for specific systems such as cash receipts, cash disbursements, sales and inventory.

In subsequent years, the auditor should update the understanding of general and application controls for significant changes, and confirm that management has satisfactorily addressed any weaknesses previously noted. Once general and application control risks are reduced to a sufficiently low level, the auditor should consider CAAT combined with statistical analysis for substantive tests.

If companies have IT systems that are moderately sophisticated or complex, and the auditor assumes maximum control risk, additional audit work may be required depending on the extent of IT controls that were documented in prior years.

Mitigating the Risk

SAS 94 procedures may improve the quality of audits by increasing an auditor's understanding of an entity's control over IT. This increased understanding reduces uncertainty about the risk of the client's internal controls failing to detect, prevent and correct material misstatement in the financial statements. Clients also gain in risk reduction by addressing identified control weaknesses, and they may turn to their CPAs to assist in addressing and mitigating the weaknesses. As auditors gain a better understanding of their clients' IT controls, and as these controls improve, CPAs can substitute substantive CAAT procedures for labor-intensive substantive tests.

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E-BITZ focuses on practical applications of various technologies to enhance a practice or business.

E-BITZ WITH SUSAN BRADLEY

The Impact of Technology on our Lives

In my office across a series of file cabinets is a veritable "what's what" of historical technology in the accounting world. With an old manual typewriter, a hand lever calculator and a 1984 vintage Compaq portable (luggable) computer with Lotus 123 (v 1.1) burned into the small, green screen, my tools of the trade showcase technology through the ages.

Just think of all the things we can do now that we could not do without computers. Imagine if you only had a pencil and paper to do your work? Would you be able to do everything you do now? My firm specializes in litigation consulting, and we regularly calculate computations. Without computers, we would not be able to do this work.

Think in your own office about how technology has made you work in ways you couldn't before. Now, think in ways that you could use technology to do your job even better! As we begin 2003, take this time to make both some personal and business resolutions about really using technology and realizing all its benefits.

For example, take the foundation of our profession, auditing. What if I told you there was technology that takes a look at "patterns" in numbers to spot fraudulent activities in transactions? In "Benford's Law" in the *Journal of Accountancy (www.nigrini.com/benford's_law.htm)*, Mark Nigrini, Ph.D., describes the efforts of a physicist at General Electronic, Frank Benford, who found that numbers fall into a predictable pattern: Numbers with low first digits occur more frequently than others. This pattern can be used to test cash disbursements, cash receipts or other series of numbers, and can be used to alert auditors for errors, possible fraud and other irregularities.

While this *can* be done without a computer, the time spent to manually determine the frequency of numbers and compare them to Benford's Law would be extremely costly. Today, take a computer equipped with Microsoft Excel, Access or customized software tailored to this law (ACL software, for example), and you can quickly and easily perform your analysis.

In the tax arena, major software vendors are beginning to add tools that search your tax client database for "value-added services" and the impact of new tax laws. Last year, for example, we suddenly had a tax code change in March retroactive to the beginning of the year. We would have had to go through our filed tax returns to determine which clients were impacted by a change in the depreciation rules. Fortunately, our tax software added tools to quickly scan our database.

Many tax programs also are mining this same tax data for value-added services you can provide clients. Programmers merely take recent changes to tax laws or tax planning opportunities, and build filters for tax software. You can print listings of clients that fall into categories for follow-up. In addition, the built-in client letters and mail merge features can custom letters that alert clients to tax planning opportunities you didn't know they had.

Consider the recent move to more ways for clients to send you tax data. From online Web sites to capture client data to emailed e-organizers, clients are more involved in preparing their own tax return that also keeps costs down as well.

During the holiday season, I am always amazed at the technology that goes on behind the scenes. I am a frequent online shopper and place my order online, with immediate notification of availability, fulfillment and shipping. In the shipping arena, we wouldn't have today's eCommerce capabilities without the technology behind those signature brown trucks.

UPS uses units called DIADs (Delivery Information Acquisition Devices) to track packages, and my favorite technology timesaver story comes from these DIAD units. When the package arrives, the driver hands the unit to you in the upside-down position for you to sign. When DIADs were first designed, the driver would rotate the unit before handing it to you, but it was discovered that this simple rotation took too much time for the driver to perform.

Programmers changed the code so that the "upside-down" signature is seen as "right-side up" in the UPS system and, suddenly, seconds of time are sliced off each delivery. While slicing off seconds may not seem like much, consider that UPS delivers an average of 300 million packages between Thanksgiving and Christmas.

As we start 2003, remember that this will be a historical year for something all of us once experienced: It marks the last time thousands of young college graduates taking the CPA Exam will file into rooms with thousands of No. 2 pencils in hand. In early 2004, the first computerized exam is expected to be administered. Let's all say one last farewell to the CPA handwritten exam and get ready to watch the impact of technology!

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