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In This Issue...

Controlling PC TCO: Planning and management can help lower deployment, maintenance, support and energy costs...pg. 4

School Daze: Funding, teacher preparation limiting online learning opportunities, study claims...pg. 7

Getting the Message: Enterprise service bus middleware opens communication between applications...pg. 9

Fake Tech? Arrrrrr!: Pirated software and hardware costs billions, puts users at risk...pg. 14

Enhanced App Services

Emtec augments application development and integration capabilities through acquisition of SARK Infotech.

It's all about the apps. Since the pioneering days of application development — when punch cards powered Jacquard's loom and Babbage's analytical engine — the evolution of computers has depended upon advances in the quality of the instructions that make the machines work. That remains true in the modern computing era, with innovative software driving rapid uptake of Web 2.0 technologies, cloud computing and mobile platforms.

As part of its continued growth strategy in 2010, Emtec, Inc., recently completed an acquisition designed to enhance its ability to deliver robust application development and integration projects to meet the evolving business demands of its clients. The acquisition of SARK Infotech gives Emtec a strong platform for the development of embedded software, Web applications and more.



"We are committed to growing our business organically and by acquiring companies that help us expand our service offerings and solutions for our clients," said Dinesh Desai, chairman, CEO, and president of Emtec. "We are confident that through the acquisition of SARK, Emtec has taken another step forward in expanding our footprint worldwide and look forward to continued growth in our key focus areas of systems integration and application services."

Web, Mobile Apps Key

SARK concentrates on developing web-based applications using primarily Open Source and Microsoft .NET platforms and offers a wide range of ser-

VICES, including network and system management solutions, interactive transactional solutions, and software development, maintenance and migration. SARK also has capabilities to provide embedded software development for Network Processing Unit (NPU) based networking software, wireless applications for handhelds and PDAs, device drivers and other devices and components. The expertise in these areas will allow Emtec to provide a wide array of solutions for its customers using web and mobile technologies simultaneously.

Embedded software is playing a particularly important role in the rapidly changing computing landscape. Organizations are beginning to capitalize on the increased capabilities of today's powerful new embedded applications to extend the reach of corporate systems directly to devices. Embedded applications now power everything from household appliances and medical equipment to popular gaming systems and advanced mobile devices.

In fact, analysts say the embedded software market is on the brink of massive expansion, largely due to its ability to enable mobile computing platforms. According to Morgan Stanley, global deployment of embedded systems will contribute to a marketplace of more than 10 billion mobile consumer devices by 2020.

Driven by increasingly sophisticated mobile applications, mobile Inter-

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The Adviser

continued on page 3



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Locking Down Keys

Centralized encryption key management maximizes data protection while minimizing operational burdens.

Protecting data from unauthorized access is a critical issue for businesses in all industries. According to The Ponemon Institute's fifth annual U.S. Cost of a Data Breach Study, data breach incidents cost U.S. companies \$204 per compromised customer record in 2009, up from \$138 per compromised record since the institute began conducting its study. Meanwhile, the average total cost of a data breach rose from \$6.65 million in 2008 to \$6.75 million in 2009.

The good news is that encryption can dramatically reduce, if not eliminate, the risk of a data security breach. Encryption effectively "scrambles" data, which cannot be read without the correct encryption key. A number of products are now available to encrypt sensitive data "at rest" on laptops, desktops, backup tapes and removable storage media, as well as data "in motion" across networks.

Organizations should deploy encryption strategically, across the enterprise, with policies and procedures designed to promote effective use of the technology. Centralized encryption key management is also essential. According to IDC, 44 percent of enterprises plan to encrypt more than 75 percent of their data, and one of the top two issues related to deploying encryption is the ability to recover the data.

"The use of encryption is widely recognized as the best method for protecting valuable information and enabling compliance with industry and government regulations," said Charles Kolodgy, research director at IDC. "Time and time again, our research shows the primary barrier to the widespread use of encryption is the fear that encrypted data will be lost. Users are demanding strong key management systems."

Into the Vault

An enterprise key management system enables customers to store and secure encryption keys and metadata about encrypted media in a centralized vault, ensuring that keys are not compromised and that the enterprise will be able to decrypt the data in the future. It also helps reduce the complexity of managing encryption by enabling a centralized, policy-based approach to key management, governing access to keys, sharing of keys, expiration of keys, shredding of keys, and all other aspects of key lifecycle management.

Centralized encryption key management enables organizations to adopt the encryption solutions that work for them today and to expand to other encryption solutions in the future, without having to change their approach to key management. It also reduces security risks by ensuring that

the management of encrypted data and the management of encryption keys are maintained as two separate functions within the IT organization.

Companies often deploy separate encryption and key management systems for different business uses, such as laptops, storage, databases and applications. Cumbersome — often manual — efforts are often necessary to generate, distribute, vault, expire and rotate encryption keys. This has resulted in increased costs for IT, difficulty meeting audit and compliance requirements, and lost data. Encryption key management helps reduce the cost and complexity associated with point solutions, making encryption more viable across the enterprise.

Streamlined key management is essential in a wide variety of data management processes. For example, the data recovery process requires locating encryption keys quickly for tapes created weeks or months earlier. At the same time, this efficiency must not impact the security of keys or violate corporate policies regarding how keys are stored and distributed.

Open Standard

To help facilitate centralized key management, several vendors have jointly developed a specification for a standard designed to simplify how companies encrypt and safeguard information. The companies have submitted the Key Management Interoperability Protocol (KMIP) to the Organization for the Advancement of Structured Information Standards (OASIS) for advancement through the organization's open standards process.

KMIP is designed to provide a single, comprehensive protocol for communication between enterprise key management services and encryption systems. KMIP enables vendors to address the need for enterprise-wide key management, providing customers with better data security and decreased expenditures on multiple key management products and operations. By taking advantage of KMIP-enabled software and devices, companies will be able to cut operational costs and reduce risk by removing redundant, incompatible key management processes.

The right encryption key management solution can help minimize the impact of encryption processes on IT operations and the risk of data inaccessibility or loss. For organizations seeking to encrypt sensitive data throughout the distributed enterprise, enterprise key management solutions provide a robust, centralized, comprehensive approach to enterprise encryption key management to minimize administrative overhead and maximize the value of data encryption.

Cover Story

continued from page 1

net usage is quickly growing to be at least twice as large as the desktop Internet in terms of subscriber numbers, according to Morgan Stanley. The financial services firm forecasts that mobile IP traffic will grow 66 times by 2013, and predicts that smartphones will out-ship the global netbook and notebook market this year and the overall global PC market by 2013.

The rapid adoption of smartphones and the proliferation of application stores are the major drivers for this expansion, according to ABI Research. The firm says 2010 will be a big year for mobile applications, with almost 6 billion mobile apps forecast to be downloaded, up from an estimated 2.4 billion in 2009. The debut later this year of two new smartphone platforms, Samsung's Bada OS and Microsoft's Windows Phone 7 Series, likely will have proprietary application stores racing to populate these stores with winning applications.

Good Track Record

SARK Infotech already has developed one such appealing mobile app. The Mumbai, India-based firm previously went to market with DoorDrishii, an application that allows users to employ their handheld devices for live video surveillance. The application allows users to define/configure an unlimited number of IP cameras mounted at remote locations and watch video from any of the cameras. Suitable for iPhone, Windows Mobile, Android or Symbian devices, the software features an authentication mechanism to ensure privacy.

"We are looking forward to becoming part of the Emtec team and increasing the breadth of our offerings," said Mayank Shah, cofounding director, SARK Infotech. "As a company, we are focused on becoming recognized globally as a noted player in the Web and embedded technologies industry and our merger with Emtec will directly support that objective."

"With the addition of our services, Emtec will expand its global footprint and further enhance its comprehensive portfolio of services," added Kiran Ambardekar, cofounding director, SARK Infotech.

Emtec's previous acquisitions over the past two years include KOAN-IT, which specializes in Information Technology Service Management (ITSM) methodologies; Luceo, Inc., which provides a broad range of software consulting services such as ERP software implementation, application development, systems management, support, database and systems administration; and Aveeva and eBAS, offering a broad range of software consulting services such as business analysis, quality assurance, testing, and training, as well as SAP, CRM, Oracle Apps and Java-based solutions.

Controlling PC TCO

Proper planning and management best practices can help lower deployment, maintenance, support and energy costs.

Gartner Group is often credited with coining the term “total cost of ownership,” or TCO, in the late 1980s, a concept that quickly became popular throughout the analyst community. However, some experts say the term is at least 80 years old, dating back to the late 1920s. And like any enduring idea it is simple to state but difficult to put to into practice.

When applied to IT, TCO is typically defined as the sum of the acquisition, implementation, management, support and use costs of technology. It acknowledges that purchase price is only one component, and often a very small component, of the cost of a device throughout its lifecycle. Most business owners and IT managers are aware of this fact, but identifying all of the cost components associated with a particular device can be tricky. Measuring them can be trickier still. And finding ways to reduce TCO — which is, after all, the purpose of the exercise — often remains elusive.

However, a number of studies have identified best practices that can lead to dramatic reductions in TCO while improving productivity and reducing risk. The key, experts say, is proper planning, deployment and management aimed at delivering maximum functionality at minimum cost.

Setting the Standard

Gartner’s original TCO analysis was designed to calculate how much the typical PC cost the typical enterprise. When the analyst firm came up with an initial value between \$7,000 and \$13,000 per user, IT and finance departments gasped.

Yes, PCs cost more in those days than they do today, but what really adds up are the recurring expenses for staff, infrastructure and maintenance. PCs have to be installed and configured, and end-users have to be trained. There are software licenses, maintenance contracts and other add-ons. Support has to be provided, either formally through the IT department or informally when users attempted to solve problems on their own. And then there is the cost of managing the network to which the PC is connected.

Streamlining the PC infrastructure is the key to keeping these costs in check. Organizations should limit the number of PC models, operating systems and configurations by regularly refreshing desktop hardware and utilizing a standardized “gold image” to install applications based upon the end-user’s profile. This will simplify desktop rollouts, reduce support headaches and ensure that software licenses are purchased only as needed. If appropriate, software distribution can be automated.

Trimming the Fat

An increasingly popular option is to utilize desktop virtualization to effectively centralize desktops in the data center. Desktop virtualization solutions transform the entire desktop — including operating system, applications and data — into an image that is stored and executed on a server. A virtual desktop functions as though it were running directly on the user’s computer, but critical data is kept in the data center where it can be more easily managed and secured.

End-users can access their virtual desktops using thin or “zero” clients as well as traditional PCs. Thin and zero clients cost less and consume less power than traditional PCs and are easier to support. Even if end-users require full-featured “fat” clients, organizations should retire old equipment in order to take advantage of newer, more energy-efficient PCs with built-in power management features.

Power and cooling costs have become an increasingly large part of the IT budget, and experts say organizations waste a tremendous amount of power by failing to implement simple power management strategies such as turning off idle or unused equipment. According to analyst firm Aberdeen Group, organizations that take steps to reduce their “carbon footprint” can achieve a 6 percent reduction in energy costs, 7 percent reduction in facilities costs and 10 percent reduction in paper, all while managing to improve customer retention by 16 percent.

Automate and Outsource

Many newer PCs also include standards-based system and configuration

management features and monitoring and reporting tools. Remote wakeup and shutdown features allow IT managers to automatically distribute software updates overnight. The system will wake up when the update is launched and shut down when it is completed for energy savings.

Network management tools can also aid in lowering TCO by reducing time spent on administrative and troubleshooting tasks. However, many smaller organizations don’t have the budget to deploy advanced network management tools, or the in-house expertise to take full advantage of them. Managed services plans, in which a third-party provider takes over the monitoring and maintenance of network assets, can be a very cost-effective and attractive solution.

TCO analysis is not a panacea. Experts have defined numerous cost metrics, and it can be difficult to determine what should be allocated to a particular asset. There is cost and effort associated with performing the TCO analysis itself. Nonetheless, it makes sense to consider all of the cost associated with an asset and take steps to minimize those costs insofar as possible.

Promise of Faster, Cheaper Desktop Service Will Drive Desktop Virtualization Adoption in 2010

Desktop virtualization is a game-changing technology that can reduce IT operational costs while increasing efficiency and agility in desktop management, says Info-Tech Research Group. Thirty percent of IT leaders have plans to implement a desktop virtualization solution by the end of 2010.

“IT departments typically invest significant time, effort, and budget into the acquisition, configuration, deployment and support of PCs on desktops,” said John Sloan, senior research analyst for Info-Tech Research Group. “Desktop virtualization changes the game from distributed asset management to efficient desktop service delivery.”

In desktop virtualization, end-users access virtual PCs that are hosted on a server. These virtual PCs can be accessed from a traditional workstation, a home PC, a laptop or a thin client. Increased speed and efficiency in desktop and application deployment, improved data security, and significant reduction in desk-side support costs are key benefits.


“In a tough economy every IT shop has to stop and re-

evaluate how they spend and whether they freeze, cut or decide to spend smarter,” said Sloan. “With desktop virtualization, corporate IT can look to get out of the complex and costly distributed PC asset management business.”

Most implementers surveyed do not anticipate large upfront capital cost savings from desktop virtualization. However, there are areas of potential advantage such as extending the life of older workstations.

“Three-quarters of survey respondents do anticipate that the total deployment cost per desktop will be less than traditional PC deployment,” said Sloan. “However, those costs need to be carefully assessed as there are potential higher cost drivers such as server hardware and licensing.”

Early adopters of desktop virtualization ranked their deployments as very successful. They report a high degree of satisfaction with the performance of their virtual desktop environments, as well as efficiency gains in desktop and application deployment and maintenance.



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John Wade, Chairman of HIMSS

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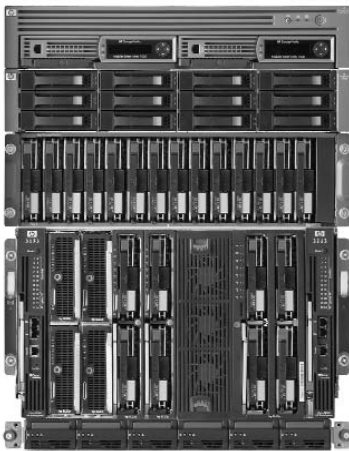
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Blades are widely viewed as compact and efficient servers that primarily save space and power. However, HP believes the power of the blade concept is about more — simplification of the entire infrastructure — through consolidation, integration, and unified management.



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School Daze

Funding, teacher preparation limiting online learning opportunities, study claims.

While advances in mobile communications, unified communications and Web 2.0 technologies have sparked rapid uptake of online collaboration practices in the business world, there is significant room for advancing such techniques in the education community. One recent study reveals that the availability of online classes has not kept pace with demand in K-12 schools and districts, despite growing interest in online learning.

Web-based collaborative technologies can allow schools to create Flash-based lessons, activities, quizzes, tests, learning games and simulations, and collaborate during the course creation and review process with an unlimited number of instructors, staff and administrators. Yet, school districts across the nation are generally more focused on offering online learning opportunities for the professional development of teaching staffs than on online classes for students.

The findings are included in the report *Learning in the 21st Century*, which was developed by Project Tomorrow, a national education nonprofit organization, in conjunction with education technology provider Blackboard. It is part of Project Tomorrow's "Speak Up" project, an annual survey that has collected and reported on the views of more than 335,000 K-12 students, parents and educators about online education and 21st-century learning.

Eager Students

According to the study, a majority of school principals (58 percent) say that online classes currently offered in their districts are primarily for teachers; just 31 percent say the classes are primarily for students. Additionally, while a full one-third of teachers have taken an online course for professional development — a 57 percent increase since 2007 — only 3 percent of teachers surveyed say they have taught a class online, a number that has not changed in three years. Furthermore, only 13 percent of teachers say they are interested in teaching online, a considerable mismatch with the growing student desire to learn online.

"While many of our nation's K-12 schools clearly recognize the advantages of online learning and instruction in teacher professional development, there remains a lag in utilizing this technology



for student achievement," said Julie Evans, CEO of Project Tomorrow. "Educators must embrace these emerging technologies to enhance student learning and fully prepare today's students for future success."

According to the study, more than 40 percent of students in grades 6-12 have researched or demonstrated interest in taking a course online, but only 10 percent have actually taken an online course through their school. Meanwhile, comparable percentages of middle school students (7 percent) and high school students (4 percent) have instead pursued opportunities outside their school to take online courses, underscoring the disconnect between the supply and demand of online learning in today's classrooms.

"Today's students are eager to embrace technology in school but there is still a wide gap between the way they live and the way they learn," said Jessie Woolley-Wilson, president, Blackboard Learn K-12. "As schools and districts look

to complement traditional learning methods with digital and online tools, teachers and principals must learn how to effectively use technology in a way that gives students more control of the learning process and contributes to student achievement."

Seeking Choice, Control

The report revealed that K-12 students want to pursue online learning to gain more control of their own learning experience, have access to more courses and work at their own pace. When asked why learning through an online class might make school more interesting, 47 percent of students in grades 9-12, 39 percent of students in grades 6-8 and 25 percent of students in grades 3-5 said they want to learn online to "be in control of my learning." Students do not expect courses to be easier online, but they do expect the online format to make it easier

to succeed because they can review materials when they want and are more comfortable asking teachers for help.

The desire for online opportunities is best expressed through the words of students themselves. When asked, "What is the one thing that you would do to improve schools to ensure that all students had the skills they needed to be successful in life," a 10th-grade student from Alcoa High School in Tennessee responded: "I would provide personal laptops for each student and provide online classes. Every school does not have all the classes a student is interested in and online classes (provide) another option."

Seventy-six percent of teachers who have experience teaching online say that online learning benefits students by giving them greater control of their learning, compared to just 10 percent of all teachers surveyed.

School principals cited funding and teacher preparation as key barriers to offering expanded access to online courses, with 22 percent reporting that online learning was not a funding priority in their district. Specific to teachers, principals felt that teachers are not comfortable using the tools (18 percent) or teaching online (17 percent) or are reluctant to try (14 percent), or their school does not have the expertise to create online courses (14 percent).

Virtualization a Smart Choice for Schools

With a mandate to do more with less, and with new funds available because of the American Recovery and Reinvestment Act, state governments and schools are looking to modern IT infrastructure solutions to get the most out of their resources. That's why many K-12 education technology leaders view virtualization solutions as a viable way to deliver applications and resources to students while reducing IT costs.

In a survey of K-12 education technology leaders conducted by Citrix at the 2009 Consortium for School Networking (CoSN) Annual Conference, 80 percent of respondents cited an interest in desktop virtualization. Top IT challenges cited included the secure delivery of applications and resources to the right students at the right time (more than 45 percent); easy delivery of semester, quarter- or course-based instructional applications and resources (more than 43 percent); reduction of IT costs by extending the life-cycle of existing hardware (42 percent); and freeing IT personnel to work on other projects (42 percent).

David Podwojski, director of government, education and health for Citrix, noted that virtualization provides effective responses to each of the cited challenges.

"The need for IT in the K-12 environment has grown exponentially, while budgets and staffing have remained flat," said Podwojski. "Technology and administration experts are looking to IT — specifically, virtualization solutions — to improve the delivery of education and to help the IT team do more with the resources at hand."

The survey also gave K-12 education technology leaders the opportunity to provide open-ended responses about the top technical benefits or issues they associate with virtualization solutions in the classroom.

"The responses we received make it very clear that the most meaningful technical benefit of virtualization in the K-12 environment is the ability to spend less time on the management and support of software and hardware," said Podwojski. "And, with stimulus funds reaching the educational system, school districts can implement the virtualization solutions that will deliver these time and cost savings — benefits that will last long after stimulus money has been spent."

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Getting the Message

Enterprise service bus middleware opens communication between applications.

In the 16th century the English navy commonly used messages in bottles to send ashore information about enemy positions. Given the sensitive nature of this information, Queen Elizabeth I even created the official position of "Uncorker of Ocean Bottles." Anyone else caught opening a bottled message faced the death penalty.

Obviously, technological advances have allowed maritime communication to become far more sophisticated these days. For example, enterprise service bus (ESB) middleware underpins an advanced tracking system the U.S. Coast Guard has been using since Jan. 1, 2009, to dramatically enhance maritime security.

The Long Range Identification and Tracking (LRIT) system parses more than 50 million high-frequency messages every day to keep tabs on every vessel in U.S. coastal waters that weighs more than 300 tons. At any given time, the LRIT system is monitoring about 6,000 ships that transmit messages from their transponders every three seconds. This messaging data is then routed into a variety of applications used to visually map and plot the courses of vessels.

ESB facilitates LRIT by using messaging to transport data between "loosely coupled" applications, which is essentially the same function the middleware serves in business applications. ESB helps organizations integrate their existing data and applications into new business systems, allowing them to design and build more flexible applications and more quickly react to changing market conditions.

Continued Growth Expected

One or more ESBs form the basis for almost all service-oriented architectures these days, and industry experts say the ESB market should experience strong growth in coming years due to the technology's ability to provide a low-cost way of overcoming many interoperability problems. Forrester Research says the ESB market was growing at more than 10 percent annually before the financial meltdown of September 2008, driven largely by SOA adoption. As the economy rebounds, WinterGreen Research expects a three-fold growth in the market through 2013.

Large organizations frequently use hundreds of different applications, and getting them to work well together has always been a formidable task. Many

organizations have an environment of disparate legacy systems, applications, processes and data sources, which commonly interact across a rat's nest of interconnections that are poorly documented and expensive to maintain.

The ESB was created as a "light-weight" alternative to the more costly and complex Enterprise Application Integration (EAI) platform. ESBs typically use messaging technology combined with a services-oriented architecture, XML, Web services protocols and intelligent routing to tie together disparate systems. Because existing applications, services and other data sources need only to plug into the bus to communicate, an ESB eliminates the usual maze of application interconnections. ESBs can be installed without disrupting existing applications and processes, and since they represent a thinner layer of function, they can be swapped out for another product more easily than a comprehensive EAI application.

No Bottlenecks

ESBs differ from the traditional approaches to application integration in other ways. They are based on standards such as Web services messaging or the

Java Message System (JMS), unlike traditional approaches that are proprietary and closed. ESBs also are massively distributed, utilizing the processing power of each connected node as opposed to traditional approaches that rely on central coordination and processing.

But the chief difference may be that ESBs don't have the hub-and-spoke architecture utilized by application servers and traditional EAI products, which feed all messages through a proprietary central hub. The hub-and-spoke architecture can be a bottleneck for high data volumes, as well as a single point of failure.

Instead, ESBs allow applications to pass messages to each other over a shared, standards-based messaging network. It's been likened to replacing the centralized rigidity of a railroad network with the autonomous fluidity of a road transport system.

Focus on Flexibility

The use of an ESB not only allows organizations to link older applications to newer, browser-based front ends designed for Web interaction, but the loosely coupled architecture of the ESB also allows for the easy creation and addition of newer applications and con-

nections as business needs evolve. Most important, the ESB infrastructure provides flexibility. IT can add, delete, modify or enhance applications; reconfigure services; and more easily manage traffic flows throughout the enterprise. The focus is on flexible, open services — not proprietary software.

ESBs are all about integration, so it's natural that ESB functionality is making its way into cloud services. As organizations incorporate more cloud-based services into their application architectures, they must find a way to integrate with their legacy on-premises systems behind the firewall. A multi-tenant ESB architecture can provide the "in-the-cloud" middleware for connecting in-house and hosted applications.

"Web developers today are increasingly focused on rapidly delivering applications with rich user functionality," said Mark Driver, vice president and research director, Gartner. "As these Web applications increasingly need to connect with other applications, cloud-based services and back-end data sources, there is a gap that needs to be filled — and it makes sense that a new class of infrastructure would emerge to fill that gap."

Microsoft Financial Messaging Service Bus Promises to Simplify Payment Processing

Banks and other financial institutions expect to be able to significantly improve payment processing and other key transactional messaging with the Financial Messaging Service Bus, Microsoft's new componentized integration solution built upon its Microsoft BizTalk Server 2009.

By providing pre-built service components, the Financial Messaging Service Bus should speed messaging integration and cut the cost of development by providing reusable service-oriented architecture (SOA) components rather than requiring extensive onsite process engineering. The solution has been certified to work with SWIFT, the worldwide financial messaging network that exchanges messages between banks and other financial institutions.

Microsoft says the Financial Messaging Service Bus not only applies to SWIFT and payments, but is extensible across all financial messaging systems as an integration framework allowing new solutions to be built and to coexist with legacy applications as part of a technology renewal program.

The Financial Messaging Service Bus utilizes the Microsoft BizTalk Server Enterprise Service Bus (ESB) Toolkit for data transformation and transaction workflow management, and extends the standard ESB to add audit trail and business activity monitoring specific to financial services. Furthermore, Financial Messaging Service Bus components can be integrated easily with Microsoft Office products, including Excel and SharePoint, for a complete operations management and business intelligence solution.

"Financial messaging and integration are becoming commoditized — and should be," said Andy Schmidt, research director for Global Payments at TowerGroup. "Banks need a simpler, more cost-effective way to reengineer payments processes, but should be ensuring that they don't reinforce silos. There is a real need to use out-of-the-box components that reduce the complexity of integration, and both build on and with existing technology, to avoid building costly technology islands."

Monster Mashups

Standards body, tech stalwarts look to fuel the growth of enterprise mashups.

Mashups first came to prominence among social and consumer Web users who were looking to make the most of the Web 2.0 technology at their fingertips. Enterprises were quick to see the business benefits of turning various data sources into services and “mashing” them together on an ad-hoc basis into unique applications without the need for complex coding.

Essentially, mashups create the opportunity for non-technical business users to very quickly develop situational applications for their own unique requirements. That’s why Gartner predicts mashups will soon become the dominant model for the creation of new enterprise applications.

“Because mashups can be created quickly and easily, they create possibilities for a new class of short-term or disposable applications that would not normally attract development dollars,” said Gartner Fellow David Cearley. “The ability to combine information into a common dashboard or visualize it using geo-location or mapping software is extremely powerful.”

An example is a mashup that combines real estate data from Craigslist with Google maps, allowing a user to view the location of each advertised property without having to search for it himself. The result is a new and distinct Web API that was not originally provided by either source.

Rapid Growth Expected

A new report from the tech research firm Business Insights predicts that the enterprise mashup market, worth around \$161 million in 2008, will expand more than tenfold to \$1.74 billion by 2013. The firm estimates that roughly one-third (32.8 percent) of the organizations it interviewed already use business mashups.

Business Insights says the growing involvement of major technology players will help drive market growth. In fact, heavy hitters such as IBM, Microsoft, Google and Yahoo! have already invested heavily in the mashup space with

the development of highly accessible and easy-to-use mashup creation tools.

As with any emerging technology, the development of standards that ensure a high level of interoperability and portability is essential to market growth, particularly in the enterprise space. To that end, a number of software vendors, consulting companies, technology service providers and industry leaders recently created the Open Mashup Alliance (OMA) to promote the development and adoption of the free-to-use Enterprise Mashup Markup Language (EMML) for enterprise mashup offerings. Charter members of the OMA include Adobe, HP, Intel, Bank of America, Cag Gemini, Hinchcliffe & Co., JackBe, Kapow Technologies, Programmable Web, Synteractive and Xignite.

The EMML specification will be governed under the Creative Commons License and supported by a free-to-use EMML reference runtime engine. The OMA will steward and enhance the EMML v1.0 specification for future contribution to a standards body.

Opening Up

“For enterprise mashups to take hold, we need to remove the ‘vendor lock-in’ concerns raised by today’s proprietary toolsets. We also need to inspire the innovative minds of the open-source community to start working in this space. By establishing an open standard for mashups, the OMA and EMML address both of these issues,” said Michael Ogrinz, principal architect at Bank of America and author of the book “Mashup Patterns.”

The EMML specification, along with a supporting runtime reference implementation, documentation and sample code, is available on the OMA Web site, www.openmashup.org.

“The Open Mashup Alliance offers organizations a proven, standardized model that will help increase mashup adoption in organizations, increase flexibility and choice in agile integration scenarios, and reduce the risk and cost for many kinds of IT projects,” said Dion Hinchcliffe, founder of Web 2.0 University and president of Hinchcliffe and Co.

Unused Servers Wasting Billions

Approximately one out of every six servers around the world is doing nothing useful, costing businesses as much as \$25 billion a year, according to a survey of server managers. The study concludes that an estimated 4.75 million servers worldwide are being run around the clock, managed and upgraded without being actively used on a daily basis.

The survey was conducted by Kelton Research on behalf of power management solutions vendor 1E in association with the Alliance to Save Energy.

“Contrary to popular belief, one of the largest causes of energy and IT operational waste in data centers are servers that are simply not being used. The savings from decommissioning non-productive servers cannot be ignored. Organizations need better information on server efficiency and more effective ongoing server energy management,” said Sumir Karayi, CEO, 1E.

Specifically, the survey found that a majority (72 percent) of server managers said that at least 15 percent of their organization’s servers are not doing anything useful. In addition, 83 percent said they don’t have an adequate grasp of server utilization, 72 percent rely on CPU utilization as their measure of server efficiency, and 65 percent said have virtualized unused servers.

“With U.S. datacenter energy consumption at an all-time high, it’s only logical that we reconsider how we are using IT resources,” said Kateri Callahan, president of the Alliance to Save Energy. “An unnecessary amount of data servers are ‘plugged in’ 24/7 in an age when power-saving tools are available to businesses.”

Survey: Most Mac Owners Also Have PC

Nearly 85 percent of Apple computer owners in the U.S. also own a Windows-based PC, according to a survey by market research firm The NPD Group. According to the firm’s survey of 2,300 Americans, approximately 12 percent of all U.S. computer-owning households own an Apple computer, up from 9 percent in 2008.

Multiple computer ownership is a common thread in Apple computer households, with 66 percent of households owning three or more computers, compared to just 29 percent of Windows PC households. Apple-owning households are decidedly more mobile as well, with 72 percent of them owning a notebook, compared to 50 percent of Windows PC households.

The report indicates that Apple computer owners also tend to own more types of electronics, and more of them, than typical computer-owning households. For example, 63 percent of Apple households have an iPod, compared to 36 percent for all computer-owning households, and nearly 50 percent of Apple owners have some type of navigation system, compared to about 30 percent of total computer owners. NPD’s survey found that 36 percent of Apple owners reported a household income of more than \$100,000, compared to 21 percent for all computer owners.

“While Apple owners tend to own more computers and more electronics devices, there is also a high correlation among Apple owners and more affluent consumer households,” Stephen Baker, NPD’s vice president of industry analysis, said. “With a higher household income, though, it’s not a surprise that those consumers are making more electronics purchases.”

Smartphone Customers Satisfied

Overall satisfaction among smartphone owners has increased considerably over time as manufacturers continue to improve styling, feature sets, usability and software, according to recent studies by J.D. Power and Associates.

Smartphone satisfaction increased by 14 index points (on a 1,000-point scale) among consumer owners and by 43 index points among business owners since 2008 as these devices have become more stylish, customizable and user-friendly. Meanwhile, overall satisfaction among traditional mobile phone owners has declined by six index points from April 2009, likely as a result of heightened awareness of advanced features available on smartphones.

Traditional handsets obtained free of charge or with deep discounts from wireless carriers did not improve customer satisfaction, either, according to Kirk Parsons, senior director of wireless services at J.D. Power and Associates.

“Satisfaction is notably lower among owners who receive their handsets for free, because these phones often do not offer the full suite of features that owners desire,” said Parsons. “When fewer features are available, usage rates also decline, which translates into lower brand loyalty. Offering extensive features that owners can integrate into their daily lives may foster brand loyalty to both the phone manufacturer and wireless carrier, and ultimately result in a more rewarding and satisfying owner experience.”



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Migration Salvation

Careful preparation is the key to a smooth transition to Windows 7.

Although Windows 7 is not a major architectural release, a move to Microsoft's latest operating system is all but inevitable for most organizations. With support for the eight-year-old Windows XP ending in 2014, organizations that skipped Microsoft's last OS, Windows Vista, will need to upgrade at some point. Win 7 is also a must for those who did migrate to Vista only to find it overreacted to security threats and had compatibility issues with third-party devices.

"Windows 7 has improvements in memory management to allow users to have a better experience than with Vista on PCs with similar or even slightly lower specifications," said Michael Silver, vice president and distinguished analyst at Gartner. "It adds other features of interest to organizations, as well as to consumers. It is important for Microsoft to get off to a good start with Windows 7 to build momentum and put the problems of Vista behind it."

Still, a move to Windows 7 requires some preparation. The typical organization requires 12 to 18 months of waiting, testing and planning before it can start deploying a new client OS. Organizations must be sure older PCs have enough memory, disk space and graphics power to accommodate the new OS. There can also be driver compatibility issues, particularly for those migrating from XP.

A key upfront step is creating a working backup of all data, programs and files. Those migrating from XP will have to do a "clean install" of Windows 7, which wipes out everything on the hard drive. Vista users can do an "over-install" that preserves files, but might be better off doing a clean install anyway. Bits and pieces of Vista will remain behind after an over-install, which could create problems down the road.

Gartner offers these suggestions as organizations ponder how to proceed:

Plan to be off XP by year-end 2012. Although Microsoft will offer support with security fixes until April 8, 2014, it is quite likely that independent software vendors (ISVs) will stop testing much earlier. "New releases of critical business software will require Windows 7 long before Microsoft support for Windows XP ends," said Steve Kleynhans, research vice president at Gartner. "Organizations that get all of their users off Windows XP by the end of 2012 will avoid significant potential problems."

Don't wait for SP 1 to begin testing and deployment. Traditionally, most IT shops have waited for the first service pack of a new version of Windows before beginning deployments. Gartner analysts say companies should go ahead and begin laying the groundwork for Windows 7 now so they are fully prepared to incorporate SP 1 when it is released in mid-2010.

Don't skip Windows 7. Gartner categorizes Windows 7 as a "polishing" release on top of the architectural change that the Windows Vista "plumbing" release delivered. Gartner analysts said polishing releases should never be skipped. Organizations that skipped Windows 2000 and waited for XP had some problems spanning the gap, but organizations that adopted Windows 2000 and tried to skip Windows XP encountered many more problems.

Budget carefully. Gartner's model shows that migration costs could be \$1,035 to \$1,930 per user to move from Windows XP to Windows 7, and \$339 to \$510 per user to move from Windows Vista to Windows 7 depending on an organization's approach.

Web Surfing Boosts Brain Function

Middle-aged and older adults with little Internet experience were able to trigger key centers in the brain that control decision-making and complex reasoning after just one week of surfing the Web, researchers at UCLA say. The findings suggest that Internet training can stimulate neural activation patterns and could potentially enhance brain function and cognition in older adults.

"The results suggest that searching online may be a simple form of brain exercise that might be employed to enhance cognition in older adults," said Teena D. Moody, the study's first author and a senior research associate at the Semel Institute at UCLA.

The scientists worked with 24 volunteers between the ages of 55-to-78 who were neurologically normal, meaning that they had no cognitive defects. The two groups had similar ages, genders and educational level. While one group had very little experience with the Web, the other used the Internet daily.

Study participants performed Web searches while undergoing functional magnetic resonance imaging (fMRI) scans, which recorded the subtle brain-circuitry changes experienced during this activity. After the initial brain scan, participants went home and conducted Internet searches for one hour a day for a total of seven days over a two-week period. Participants then received a second brain scan using the same Internet simulation task but with different topics. The second scan demonstrated activation of areas of the brain known to be important in working memory and decision-making.

Consumers Want 'Green' Handsets

Nearly half of the adult mobile phone users in the U.S. would choose an environmentally friendly handset if the price were right, according to an ABI Research survey. About 7 percent of the 1,000 survey participants said they would be willing to pay a premium for a "green" handset, while another 40 percent said they would choose a green handset over a conventional one if price, features and performance were equal.

"These survey results mean that almost half of those surveyed were at least committed in principle to use of a green handset," said analyst Michael Morgan. "However, the public is largely uninformed about their availability: Only 4 percent said they were 'very familiar' with green handsets."

Morgan noted there is a difference between being merely compliant with environmental legislation and regulations and being truly green. The three key factors are: using recyclable or renewable materials; ensuring that handsets are in fact recycled after use; and introducing low-power chargers.

ABI Research says that as handset vendors leverage the lessons learned in greening process and apply them through entire handset portfolios, the percentage of properly recycled handsets will grow from 8 percent in 2009 to 17 percent in 2014.

New TVs Getting Connected

With digital televisions (DTVs) supplanting analog models in much of the world, manufacturers are adding new features such as Internet connectivity and wireless HD capability to broaden their appeal, reports high-tech research firm In-Stat.

"DTVs are competing with computers to be the entertainment hub of the home," said Brian O'Rourke, In-Stat analyst. "Sets with Internet connectivity are already commercially available in the U.S., Europe and Japan. Models from Hitachi, LG Electronics, Mitsubishi, Panasonic, Samsung, Sharp and Sony can connect directly to the Internet without a home computer."

The trend in connectivity has spread to almost every category of audiovisual component, from game consoles to disc players, and it has spawned a new generation of set-top boxes and services specifically designed to deliver online content to the TV.

In-Stat predicts that by 2013, 36 percent of digital TVs sold will be only wired network-enabled, while 34 percent will be wireless network-enabled.

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Fake Tech? Arrrrrr!

Pirated software and hardware costs billions and puts users at risk.

Classic movie pirates typically were adventurous, clever and courageous fellows with a certain moral ambiguity but a strong sense of honor that would always shine through by the third reel. Today's technology pirates share few of the characteristics of the Hollywood swashbucklers, apart from a taste for ill-gotten treasure.

Software and hardware piracy costs manufacturers billions of dollars a year in lost sales, to say nothing of the additional costs to consumers in the form of viruses, worms and spyware or defective drives, processors and batteries that wreck their systems. The Business Software Alliance (BSA) estimates software piracy costs at more than \$50 billion annually, while the Alliance for Gray Market and Counterfeit Abatement (AGMA) has pegged knockoff hardware costs at more than \$100 billion a year.

Many counterfeiters operate overseas, and Daniel Baldwin, U.S. Customs

and Border Protection (CBP) assistant commissioner for international trade, recently stressed the importance of international partnership in reducing the growing threat from counterfeit and pirated high-tech products.

"The United States still sees intellectual property as a major priority. And we recognize that this global challenge cannot be solved without global cooperation and collaboration," Baldwin said during a speech at the 2009 International Law Enforcement IP Crime Conference in Dublin. "The problem is huge, but there are lots of things we can accomplish together."

Beyond Borders

Baldwin cited two recent examples of how international cooperation interrupted the counterfeit supply chain. In Operation Cisco Raider, the CBP collaborated with the Royal Canadian Mounted Police and other U.S. government agencies in more

than 400 seizures of counterfeit Cisco network hardware and labels with an estimated retail value of more than \$76 million. This joint effort effectively dismantled the North American supply chains for these counterfeit products from China. In Operation Infrastructure, the CBP worked closely with the European Union to seize 360,000 semiconductors and network hardware components bearing 40 different trademarks during a three-week period.

Baldwin further noted that in fiscal year 2008, the Department of Homeland Security made a record 14,992 intellectual property seizures with a domestic value of more than \$272 million. This was a 10 percent increase in seizures and a 38 percent increase in value over fiscal year 2007.

"We recognize the huge value of our collaboration with the Canadians and the EU on these operations, and we are committed to expanding this type of cooperation," said Baldwin. "The lessons of these successes were very clear. As we move forward, we can help each other recognize and share information on global risks."

The P2P Connection

Software piracy has become a trickier issue due to the relative ease with which transactions can be made online. Individuals are turning to peer-to-peer (P2P) networks and auction sites in staggering numbers to acquire or transfer illegal software, according to the 2009 Internet Piracy Report from the BSA.

BSA uses special technology to monitor P2P networks and auction sites, issuing "takedown requests" when it finds suspicious software being offered. In the first half of 2009, BSA stepped up its efforts in this area and issued almost 2.4 million takedown notices related to P2P and BitTorrent file sharing, an increase of more than 200 percent over the same period in 2008. During the same time frame, BSA used its in-house Internet "crawler" to request the removal of almost 103,000 torrent files from nine of the largest BitTorrent hosting sites worldwide. These torrent files were being used by nearly 2.9 million individuals to download software with a retail value of more than \$974 million.

"Peer-to-Peer networks are ideal for distribution of a wide variety of materials that can be legally shared with large groups and are a tool used by more busi-

nesses to enhance productivity. Unfortunately, P2P technology is also a favorite channel for software pirates who see it as the perfect channel through which to distribute illegal and potentially dangerous software," said Jenny Blank, Senior Director of Legal Affairs for the BSA. "One of the great disappointments of this technology, for all of its benefits, is that it is now too often seen as the domain only for pirates and malcontents who place no value on the work of software developers and designers."

No Bargain

Beyond the direct economic impact of technology piracy, the BSA report also draws correlations between Internet piracy and the spread of malware. To bypass installation and licensing protections in today's software, counterfeiters must physically alter the software's code. Essential elements of the program are often deleted, while unnecessary extras can be inserted. Deleted code will cause the software to behave erratically — displaying error messages or failing to work with other software and devices — and the extra code inserted by counterfeiters may include malware or spyware that can be used to infect a PC with viruses, change settings or even track how someone uses the computer, such as tracking Web sites visited or keystrokes entered. This malicious software can be used to steal personal information such as usernames, passwords and credit card numbers.

"Software piracy is a threat on multiple fronts," Blank said. "Pirated software can be a breeding ground for malware and can also open users up to crimes such as identity theft. Those who decide to acquire illegal software harm the economy and companies of all sizes. Moreover, those who engage in piracy open themselves up to civil and criminal prosecution."

While technology piracy has an obvious detrimental impact on manufacturers, end-users run a high degree of risk as well. Beyond malware and viruses, fake software and hardware can lead to computers that freeze, crash or won't start — while also potentially corrupting critical data. Of course, since the product is counterfeit, there is no hope for tech support, updates or upgrades. All in all, it's enough to shiver anyone's timbers.

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04/10

Testing Challenges, Virtualization Hamper the Success of DR Plans

Disaster recovery plans need to be tested regularly to ensure that they effectively protect the organization. However, Symantec's annual IT Disaster Recovery survey shows that DR testing remains a major challenge in many organizations. One in four tests fail.

Thirty-five percent of respondents reported that they test their DR plans just once per year or less. Reasons most respondents cited for why organizations aren't testing include lack of personnel resources (48 percent), disruption to employees (44 percent) and budget (44 percent). In addition, 40 percent of respondents reported that DR testing

impacts customers and nearly one-third (27 percent) believed that such testing could impact their organization's sales and revenue.

Sixty-four percent of respondents reported that virtualization is causing them to reevaluate their disaster recovery plans, up from 55 percent in 2008. Nonetheless, nearly a third (27 percent) said they do not test virtual environments as part of their disaster recovery initiatives. This number has improved in the past year, lowering from more than one-third (35 percent) of organizations who did not test their virtual environments in 2008.

However, more than one-third (36 percent) of data on virtualized systems is not regularly backed up. More than half of the respondents blamed lack of backup storage capacity, automated recovery tools and storage management tools as top challenges to protecting mission-critical applications and data in virtual environments. In addition, 51 percent cited resource constraints such as people, budget and space as hampering their ability to back up virtual machines.

Because disaster recovery testing is invaluable, organizations should seek to improve the success of testing by evaluating and implementing testing methods that can be run frequently without disruption to

business operations. Organizations should also include virtualization in their disaster recovery testing and backup initiatives.

"This year's Symantec-sponsored research clearly identifies key issues, hidden risks and best practices in implementing DR. While some aspects are trending well, the impact of downtime is greater than ever before," said Rob Soderbery, senior vice president of Symantec's Storage and Availability Management Group. "The surging cost of downtime places greater emphasis on business – which means more pressure on IT. If organizations are not protecting virtual environments, not testing their DR plans and seeing one out every four tests fail then something needs to change to better manage risk to the business. Organizations should implement solutions that address these needs while allowing them to leverage existing assets."



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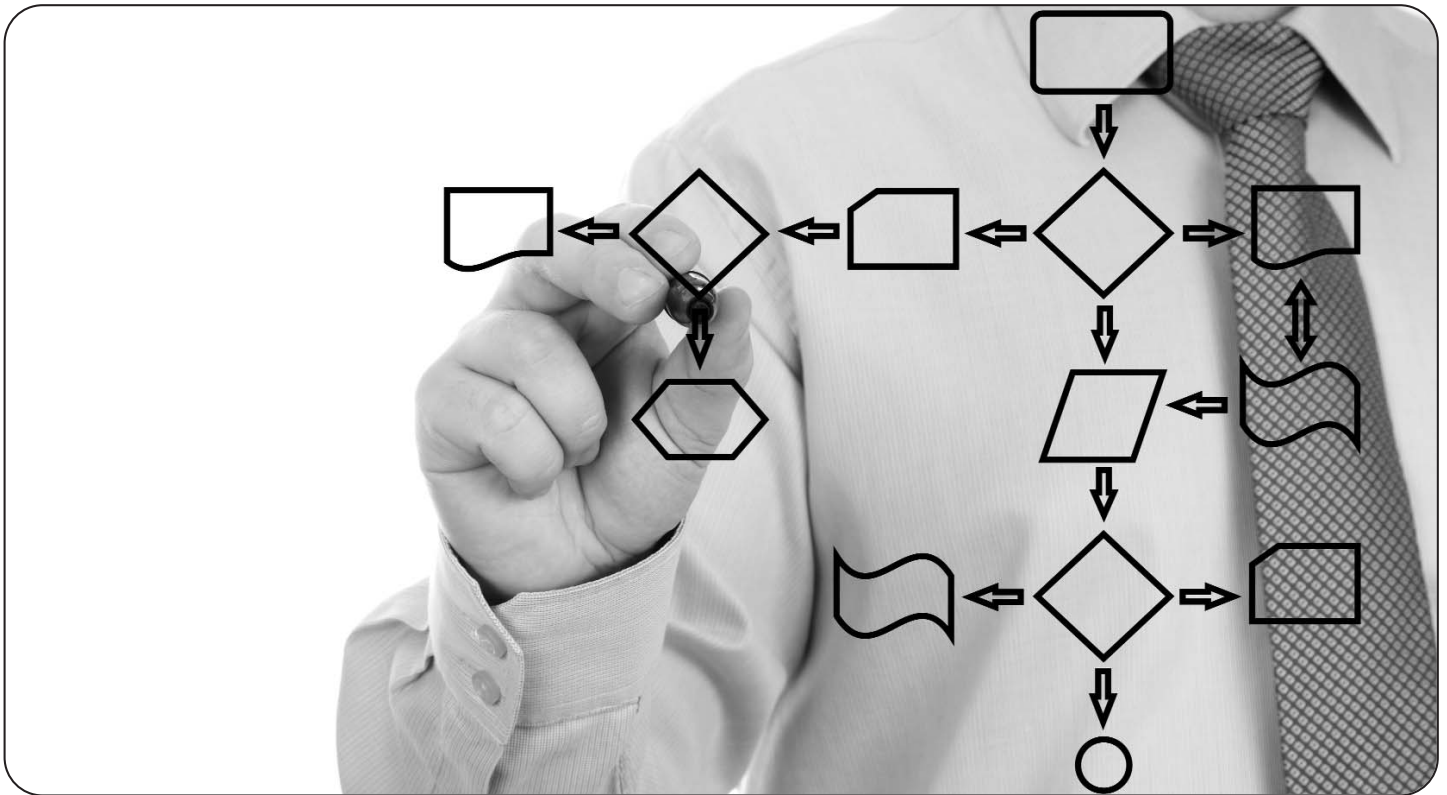


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