10 Predictions for Technology Trends and Practices in 2012

Written By Quest Software, Inc.

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Introduction

In the midst of one of the biggest transformations in its history, the information technology (IT) community is responding to explosive demand for mobility, collaboration and social networking technologies. At the same time, virtualization and cloud computing are reshaping how and where applications and computing power are managed and delivered. The implications on communications, security, provisioning and systems management are enormous and exciting. How organizations are addressing these opportunities and challenges are some of the most important questions the IT community faces today.

Accordingly, Quest Software is constantly working to understand the issues and needs of the identity and access management (IAM), Exchange, SharePoint, virtualization and cloud communities. We do this through interaction with our customers, review of the latest information from technology forums, and thoughtful analysis by our team of technology experts. The understanding we achieve helps us build better products and provide organizations with knowledge and best practices to improve their productivity and efficiency.

This paper shares our insights on key technology trends and practices in the form of 10 predictions for 2012. Our leading experts use data gleaned from surveys conducted at The Experts Conference (TEC) in April 2011 to provide a window into what "real-life" practitioners are doing now and where they are likely to go next. Our predictions tackle critical topics such as cloud services adoption; cloud, virtualization and collaboration technology platforms; identity federation; and the economy. We hope you find these predictions to be insightful, thought-provoking and valuable when planning your technology strategies.

About The Experts Conference (TEC)

Presented by Quest, TEC is the premier annual conference for expert users of Microsoft technologies. Celebrating TEC's 10th year of delivering advanced education and networking, TEC 2011 included four concurrent conferences focused on Microsoft's application and infrastructure offerings:

- **TEC for Directory & Identity,** covering Microsoft Active Directory, Forefront Identity Manager (FIM) and Active Directory Federation Services (ADFS)

- **TEC for Exchange,** focused on Microsoft Exchange and unified communications

- **TEC for SharePoint,** concentrated on Microsoft Office SharePoint Server and SharePoint 2010 migrations

- **TEC for Virtualization & Cloud,** which encompassed server and desktop virtualization as well as cloud computing

In addition, a **PowerShell Deep Dive** was introduced during TEC 2011.

TEC 2011 North America in April 2011 attracted 640 delegates and 90 speakers from 22 countries. TEC delegates represent a broad spectrum of organizations across many government and industry sectors. Attendees are advanced, hands-on practitioners with deep knowledge of their organizations' current and planned strategies and practices.

About the TEC Survey

Quest conducts annual surveys at TEC that focus on technology trends, best practices, current issues and priorities. In the 2011 survey, delegates from all four conferences and the PowerShell Deep Dive were invited to provide answers to a series of in-depth questions. These questions included social networking, mobility and cloud computing topics, and the responses capture important insights regarding adoption rates and impact on systems management, communications, knowledge sharing and security administration. A total of 214 delegates responded to the survey. This paper shares 10 key predictions for 2012 that Quest experts have compiled based on the TEC 2011 survey results.

The Predictions

1.   SaaS growth will help drive wider adoption of cloud services.

Interest in cloud services continues to increase among TEC conference attendees, although a sizable percentage of respondents remain on the sidelines. As shown in Figure 1, software as a service (SaaS) is easily the most popular category of cloud service, but the other options also are garnering interest among early adopters. Equally notable are the number of respondents reporting "no plans" to pursue cloud services, although the size of this group is likely to

Figure 1: Current and Planned Adoption of Cloud Options
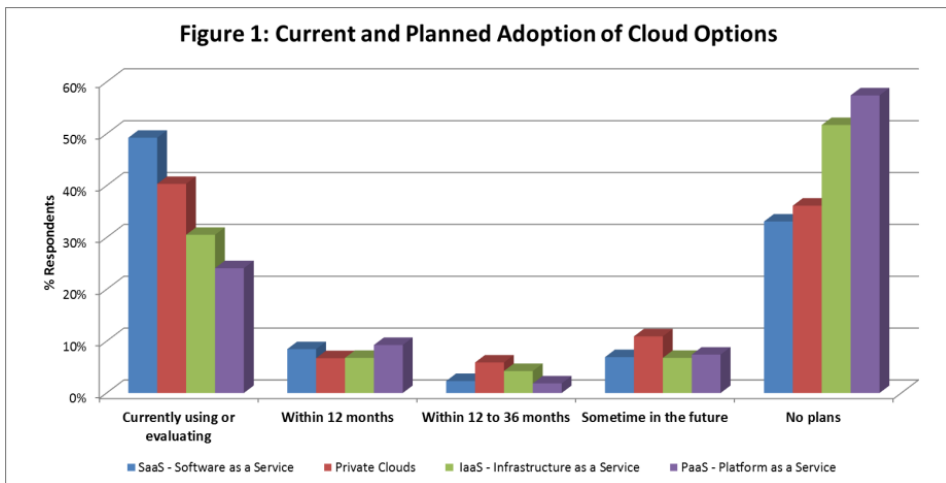
diminish in the future as cloud services mature and more success stories emerge. We anticipate a further shift as concerns over issues such as security, access management and vendor trust are addressed.

Although SaaS offerings cover the spectrum of business and technical applications, shared business services such as messaging, CRM and HR are the most popular solutions, used by 39 percent, 32 percent and 26 percent of all respondents respectively. When assessing the SaaS market, growth within organizations is also important. The potential of this growth can be seen in Figure 2, which illustrates the percentage of respondents intending to deliver more than half of their software licenses/seats via SaaS in upcoming years. Based on these factors, we anticipate that the SaaS market will continue to see rapid growth over the next several years, particularly as cloud service providers overcome security and compliance concerns to accelerate acceptance.

Figure 2: Percentage of Respondents Delivering or Planning to Deliver Over 50% of Software Licenses/Seats Via SaaS
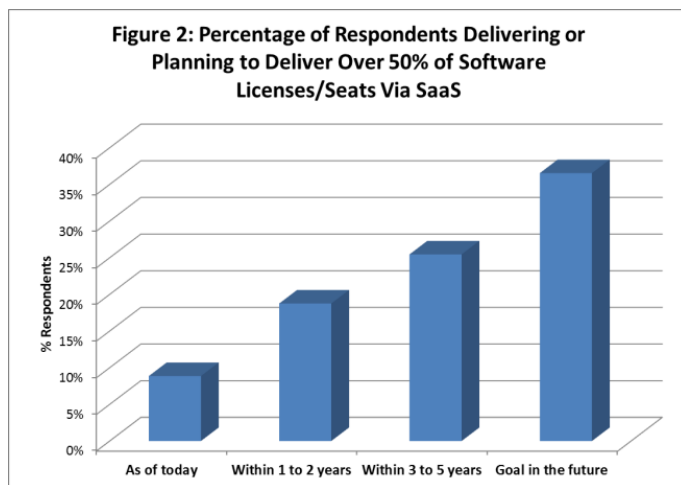
2.   Cloud service providers must overcome key concerns to accelerate acceptance.

Particularly among IT respondents, public cloud services raise significant concerns over compliance, security and access management controls. Only 2 percent of IT respondents versus 21 percent of vendor respondents express no significant concerns over cloud services. Reliance on cloud provider performance to control risks accounts for one of the two top issues. Ensuring cloud services are compliant with corporate policies is a concern for 73 percent of IT respondents, while the ability to trust vendors to provide required levels of security, availability and support is an issue for 63 percent of IT respondents. Business area adoption of cloud services complicates and may even enable

users to bypass internal IT controls and this is a concern expressed by 59 percent of IT respondents who highlighted concern with identity and access management controls. Likewise, 30 percent worry that business users can spend too much money on subscriptions.

While not insurmountable, these concerns must be recognized and allayed through better tools and practices, improved auditability and solution certification to build visibility and trust before cloud service providers will be able to make significant inroads into the organizations currently in the "no plans" category in Figure 1.

### 3. Microsoft Hyper-V will make inroads in overcoming VMware's market dominance.

VMware vSphere is by far the dominant hypervisor, especially among IT organizations, where respondents report an 84 percent usage rate. While VMware has historically been viewed as more robust and feature-rich than Microsoft Hyper-V, more organizations are willing to pilot and deploy Hyper-V as an alternative due to its improving features and incorporation within Server 2008 R2. Hyper-V deployment among IT respondents has risen from 27 percent in 2010 to 35 percent in 2011. More important, potential use among IT survey respondents rises to 56 percent when planned future deployments are included. Further, survey responses show a significant growth in the number of organizations willing to support multiple hypervisors rather than standardizing solely on VMware.

Given the success of production deployments by early adopters and the emergence of its first evangelists, we expect interest in Hyper-V to accelerate. The competition between hypervisors seems likely to repeat the scenario that helped Microsoft displace Novell in the directory market in the 2000 timeframe, where a combination of easy deployment, "good enough" features, low cost of ownership and Microsoft marketing overcame perceived technical superiority. While Microsoft is unlikely to match VMware's dominance any time soon, we believe Hyper-V adoption will slowly erode the market share currently enjoyed by VMWare and position Microsoft as a player in the virtualization market. Further, we predict that 2012 will be the year when we see innovation in Microsoft Hyper-V 3.0 and significant growth in customer numbers.

4. Lingering issues will create opportunities for "virtualization-aware" solutions.

Server virtualization is ubiquitous among TEC survey respondents; as shown in Figure 3, more than 60 percent have virtualized more than 50 percent of their server workloads. While most organizations are satisfied with their virtual environments, backup, performance monitoring and storage monitoring remain problematic to a significant number of respondents. Backup is an issue for 34 percent of IT respondents. We believe this dissatisfaction is due to the slowness of legacy backup tool providers to adapt their offerings to provide simpler, easy-to use offerings that capitalize on the benefits of virtualization. However, backup concerns should lessen in the future as niche providers take advantage of this gap to offer special purpose backup tools for virtualization.

Figure 3: Percentage of Server Workload Virtualized

Likewise, performance monitoring is an issue for 32 percent of IT respondents as traditional monitoring tools lack "virtualization awareness," increasing the difficulty of managing rapidly growing production workloads. Without this awareness, monitoring tools assess a virtualized
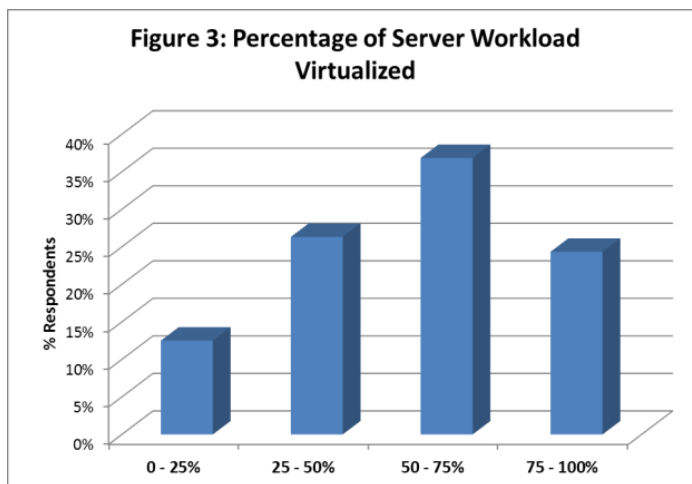
server as a physical server and miss hypervisor-only metrics that are crucial for optimizing virtual environment performance. Divisions between storage teams and virtual environment administrators are the likely cause for the 22 percent of IT respondent dissatisfied with storage monitoring efforts. This separation leaves each group with only limited visibility into the overall performance of the highly complex storage subsystems shared across virtual environments, and it will spur the interest in and need for "virtualization-aware" solutions.

5.   Cloud workloads will remain mostly isolated for the foreseeable future.

While the growth of private and public cloud usage ensures that more organizations will be supporting hybrid cloud environments, concerns about security, control and technology maturity lead most organizations to isolate internal and external workloads. As a result, cloudbursting, the practice of moving ("bursting") excess workload to an external cloud on an on-demand basis when processing demands exceed internal data center resources, has yet to gain any traction within IT organizations. Despite the marketing efforts of companies such as Microsoft and VMware, no IT respondents and only 18 percent of vendor respondents are planning to use cloudbursting as a hybrid scenario for bridging private and public clouds.

Although the workloads are separate, the desire to control access and workload partitioning remains: 31 percent of IT and 23 percent of vendor organizations use centralized identity and access management to control user access to applications across the hybrid environment, and 28 percent of IT and 25 percent of vendor organizations use centralized infrastructure management tools to select which workloads run on-premise or online.

6.   Google and Microsoft will strongly challenge Apple's lead in the IT mobile market.

Adoption of new mobile technologies is proceeding at an unprecedented rate: 32 percent of IT and 33 percent of vendor survey respondents report their organizations are already purchasing or reimbursing the purchase of tablets for employees. Although exciting, the new technologies are evolving rapidly and, unlike the desktop market, the battle to become the standard is far from over. When deciding which platforms to support, IT administrators face the

challenge of balancing current market share and capabilities against long-term potential. Weaknesses will be fixed over time, and administrators will have to manage the devices that will be chosen by the majority of their end users. The battle lines are clearly apparent in

Figure 4: Which tablet operating systems are/will be used?	% IT Respondents	% Vendor Respondents
Android	45%	15%
BlackBerry	28%	4%
iOS, WebOS	46%	28%
Windows 7, and/or Windows 8 (when released)	36%	35%
Not using tablets	28%	25%

Figure 4, which compares adoption rates by tablet operating system. While Apple iOS is currently in the IT leadership position, Google Android's high ranking is likely a reflection of where the market will head as its sales increase and capabilities improve. Likewise, Microsoft remains a strong contender with Windows 7 (and upcoming Windows 8).

Given the rapid explosion of popularity in the mobile and apps worlds, the stakes in this market are especially high. Although Research in Motion's Blackberry had a great run from its first-to-market advantage in the smart phone market, that run is now waning. Microsoft is undoubtedly feeling the pressure to gain a dominant position, since mobile devices and tablets pose a very real threat to the now-legacy PC era upon which Windows was built. Apple's innovation and Google's mass appeal and open Android architecture only serve to raise the stakes. Yet this book is far from written, with new players such as Chinese Huawei standing in the wings, only more than happy to ride the mobile wave into the enterprise, and beyond.

7.   Cloud applications, compliance and mobile devices will drive a reshaping of corporate IAM strategies.
New compliance mandates, the growing use of cloud-based applications, and the proliferation of smart phones and tablets are causing IT organizations to rethink their identity management and user provisioning strategies to control support costs and better manage security. For example, identity and access management controls for public cloud services are a key concern for 59 percent of IT survey respondents, and ensuring that those services are compliant with their corporate policies concerns 73 percent of IT respondents. Further, we find that corporate managers want greater transparency in the identity and access management activities that support compliance-mandated governance processes.

Meeting these concerns will result in many changes in how enterprise IT organizations operate and automate on-premises identity systems. It's no surprise then that 19% of IT survey respondents report having an identity management project under way or planned within the next 12 months. As organizations seek better decisions about how best to control access, we predict growing adoption of content classification systems to help identify sensitive data. Other changes we expect to see include: increasing deployment of federation technologies and automated provisioning/deprovisioning systems to support cloud-based applications; greater support of user-driven self-service identity and access management functions to reduce IT costs; and the implementation of more granular and flexible policy-driven authorization systems for applications and files to extend controls beyond simple group membership.

8.   Active Directory will continue to dominate, and the IAM framework market will see modest growth.
Active Directory is the identity management platform of choice for enterprises, and we expect this dominance to increase slightly as some of the remaining users of Novell eDirectory shift to Active Directory. Given Active Directory's market acceptance, Microsoft's aggressive Enterprise Agreement sales and the TEC for Directory & Identity focus, it is not surprising that usage of Microsoft's Forefront Identity Manager (FIM) easily exceeds the usage of competing identity and access management frameworks such as IBM Tivoli Identity Manager, Oracle Identity Manager, CA Identity Manager and Novell Identity Manager. As shown in Figure 5, 40 percent of survey respondents report using FIM (or its predecessors) as compared with 27 percent for the sum of all non-Microsoft solutions. While FIM usage was flat when compared against 2010 TEC survey results, we expect modest growth in both Microsoft and non-Microsoft framework categories over the next year. While most organizations tend to choose

Figure 5: Identity Management Framework Usage

a single solution, the survey found that slightly more than one quarter of the organizations using FIM (11 percent of all respondents) also use a non-Microsoft framework.
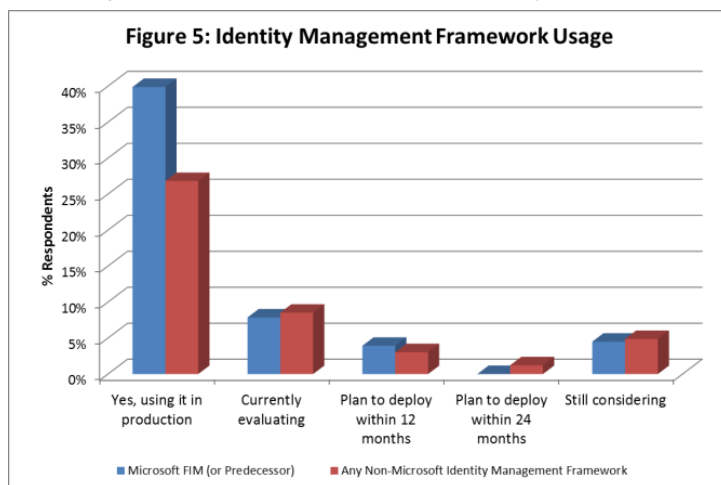
9.   Office 365 will see slow adoption, except among small businesses.
Cloud-based email solutions offer organizations an increasingly attractive alternative for outsourcing their corporate email systems – including much of their operational overhead. Although on-premise systems, notably Microsoft Exchange, still dominate, the TEC survey confirms our field observations that cloud-based email solutions are catching on with early adopters. Approximately 8 percent of survey respondents are currently using or evaluating

Microsoft's cloud solution, Office 365 (formerly BPOS), and an additional 6 percent plan to do so within the next 12 months. Survey respondents suggest that Office 365 usage is similar to last year's results for BPOS. If this is a reflection of reality, this does not bode well for Microsoft – at this stage in the adoption curve growth needs to be extremely high, given the law of small numbers. Vendors are using Office 365 at double the rate of IT organizations; this is as expected since vendors need to understand the platform to prepare their own solutions and to encourage customers to consider and adopt the new Microsoft platform. We predict that Microsoft will find traction for Office 365 in the small business community, and that this is where most of Microsoft's growth will come from. Security and privacy concerns will continue to yield slow growth in the medium and large enterprise arenas.

In our survey, Google's Gmail is used by 3 percent of IT respondents and 1 percent of vendor respondents; however, this low representation is likely skewed since we were sampling a Microsoft-centric conference audience. That said, based on general impressions expressed by customers and press across the market, we expect Google to continue to struggle in demonstrating its ability to understand the enterprise. The weak performance of Google, and the less-than-stellar success of Microsoft, serve to prop the door wide open for new challengers such as VMware's Zimbra to enter the race. The cloud email market is still very much in its infancy and has much maturing to do.

Widely regarded as one of the fastest growing Microsoft solutions in history, SharePoint has enjoyed tremendous adoption and deployment rates over the years. We believe much of this can be attributed to Microsoft's aggressive sales and marketing efforts, and the inclusion of SharePoint in Microsoft's Enterprise Agreements. And while our experts predict that the pace of the growth will slow over time, SharePoint will continue to be on a high growth trajectory overall. This will, for most companies, prompt active investigation into how best to leverage SharePoint for business-critical activities and specific applications and allow for SharePoint to continue growing its collaboration market share.

10. Employees will face increased monitoring of their social networking activities.

Social networking provides yet another challenge to corporate and government administrators seeking to monitor and control the flow of information that can impact their organizations. Employee use of social networking applications such as Facebook, Twitter and Linkedin blurs the boundaries between personal and business environments and has implications for corporate branding image, regulatory compliance, personnel policies, information security and work productivity. Social networking policies are becoming a greater topic of interest as social media gains in popularity, and TEC attendee organizations are split between those who do monitor and/or manage social networking activities and those who don't. This is very similar to the early adoption curves of email in the late 1990s and of instant

Figure 6: Which Social Networking Sites Does Your Company Manage or Monitor?	% Respondents
Facebook	45%
Twitter	39%
Linkedin	36%
Foursquare	6%
Plaxo	5%
Orkut	4%
Digg	4%
Tumblr	3%
Other	6%
Do not monitor or manage social networking	35%

messaging in the mid 2000s. Figure 6 illustrates this split and provides an intriguing view of which social networking sites most concern administrators.

The parallels in the social networking management market and the email and instant messaging management markets of the late 1990s are compelling. Initially, many companies will view social networking as a toy. Some will choose to block all access or limit access for certain teams and individuals. Others will implement written employee

policies to try to protect employee productivity. Most organizations are running blind without any visibility into the breadth and depth of social networking use – and abuse – within their employee base. Over time, reporting solutions will be implemented and more granular controls will emerge. Further, niche vendors who provide granular levels of control for companies subject to compliance regimes also are emerging, and that's a positive development for the market. Frightening though it is, many organizations will not care about social networking until a PR or legal crisis tied to social networking technology hits and shines the spotlight on the problem.

Conclusion

Respondents to our survey have clearly identified the churn that is happening in the industry. Cloud computing hype is at an all-time high, yet adoption of cloud-based email is still in its infancy. CRM and HR solutions dominate the cloud, largely tied to the evolution of early trend-setting vendors such as Salesforce.com. Distrust and security paranoia continue to prevail as companies are searching for reasons to trust Microsoft, Google and other cloud vendors with their precious data. IT organizations are heavily focused on virtualizing their environments and gaining control over their corporate infrastructures. More and more companies are questioning the increasing costs and complexity of on-premises solutions, while at the same time seeking to squeeze every drop of value from their costly Microsoft Enterprise Agreements. Deployments of SharePoint and FIM, along with migrations of Exchange and other applications, take up a lot of IT department time and energy. Identity management is a key concern as companies seek to prepare for the imminent arrival of the cloud into their corporate IT kingdoms. All the while, Microsoft is facing an onslaught from all sides: mobile devices and tablets threaten the Windows market built up during the now-legacy PC era, the success of VMware in virtualization opens the door for Zimbra to replace Exchange as a corporate email system, and Google continues to erode the lower end of Microsoft's email and collaboration market share.

Data management is also becoming critical, given the wide range of storage locations and the plethora of mobile devices. With tablets and smart phones coming at it from all sides, the corporate firewall is rapidly losing its prominent position in holding back the tsunami of devices and keeping corporate data inside. Data has escaped from IT department control into the nether reaches of cloud-based services, mobile devices and social networking. Only the most disciplined IT organizations, using carefully-designed approaches to systems management, data governance and identity management, will ride the wave and maintain clear controls over the identities, data and applications that form the foundation upon which their businesses have been built.

About the Forecasters

Gil Kirkpatrick

Gil, a 30-year veteran of the commercial software business, has designed or developed dozens of successful commercial software products. He is well known as the founder of the popular Directory Experts Conference (now The Experts Conference), the only international conference focused on Microsoft identity and access technologies. He is the author of the highly-regarded book *Active Directory Programming* and a frequent contributor to *Windows IT Pro* and *TechNet* magazines. In his current role as a chief architect at Quest Software, Gil consults on various security, identity, and marketing projects, and speaks at technology seminars and conferences around the world. He has received the Microsoft Most Valuable Professional (MVP) award for his work in the technology community each year since 2005.

David Sengupta

David has been a Microsoft Exchange Server MVP since 1998, and has worked with Exchange since its inception. He is a chief architect at Quest Software. A leading expert in messaging and unified communications, David has written for many print and online publications, contributes regularly to books on messaging and Exchange, and speaks at major Microsoft events and conferences, including TechEd and IT Forum.

Dmitry Sotnikov

Dmitry has more than 10 years of experience working in the Windows management area, and is the author of multiple whitepapers. He is a regular blogger - at Dmitry's PowerBlog and CloudEnterprise.info - and a presenter at numerous trade shows, including Microsoft Management Summit, WinHEC, Longhorn RDP Airlift, IT Forum, Platforma and TechEd. He is currently leading the new product research and development team for Quest's Windows Management business unit. While in this role, he has helped make Quest an industry leader in migration, SharePoint and PowerShell, and he is now leading the company into the cloud computing era.

Mattias Sundling

Mattias is an evangelist at Quest Software. He joined Quest with the acquisition of Vizioncore and has more than 12 years of experience in IT. Prior to joining Vizioncore in 2008, he worked as a consultant, assisting organizations with monitoring and virtualization. Mattias is an experienced speaker and has presented at trade shows including VMworld, Virtual Forum and Virtual Power. He was recently recognized by VMware as a vExpert.

Patrick Rouse

Patrick is a senior systems consultant at Quest Software, where he focuses on pre-sales engineering for Quest's vWorkspace product line. Patrick has more than 12 years of experience in information technology, with more than eight years working with presentation and desktop virtualization. Microsoft has recognized his contributions to the community with the Most Valuable Professional Award for Windows Terminal Services each year since 2003. He is a prominent blogger and author, and twice has presented at the BriForum, an annual conference about desktop and application virtualization. Prior to joining Quest Software, Patrick served in a variety of different technology roles, including independent IT consultant; IT director; network administrator; biomedical engineering technician; and communications technician in the United States Marine Corps.

Doug Davis

Doug has worked in the IT industry for almost 20 years. He is a noted SharePoint expert, and his current role at Quest is product director of the SharePoint Business Group, where he is responsible for the strategic roadmap for Quest's SharePoint products. Doug came to Quest through its acquisition of FastLane Technologies. Before Quest, he worked in IT and development at Telesat Canada, a Canadian satellite company. Doug holds a degree from Carleton University in Ottawa.

About Quest Software, Inc.

Quest Software (Nasdaq: QSFT) simplifies and reduces the cost of managing IT for more than 100,000 customers worldwide. Our innovative solutions make solving the toughest IT management problems easier, enabling customers to save time and money across physical, virtual and cloud environments. For more information about Quest solutions for administration and automation, data protection, development and optimization, identity and access management, migration and consolidation, and performance monitoring, go to www.quest.com.

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WPW-10PredictionsFor2012-US-KS

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