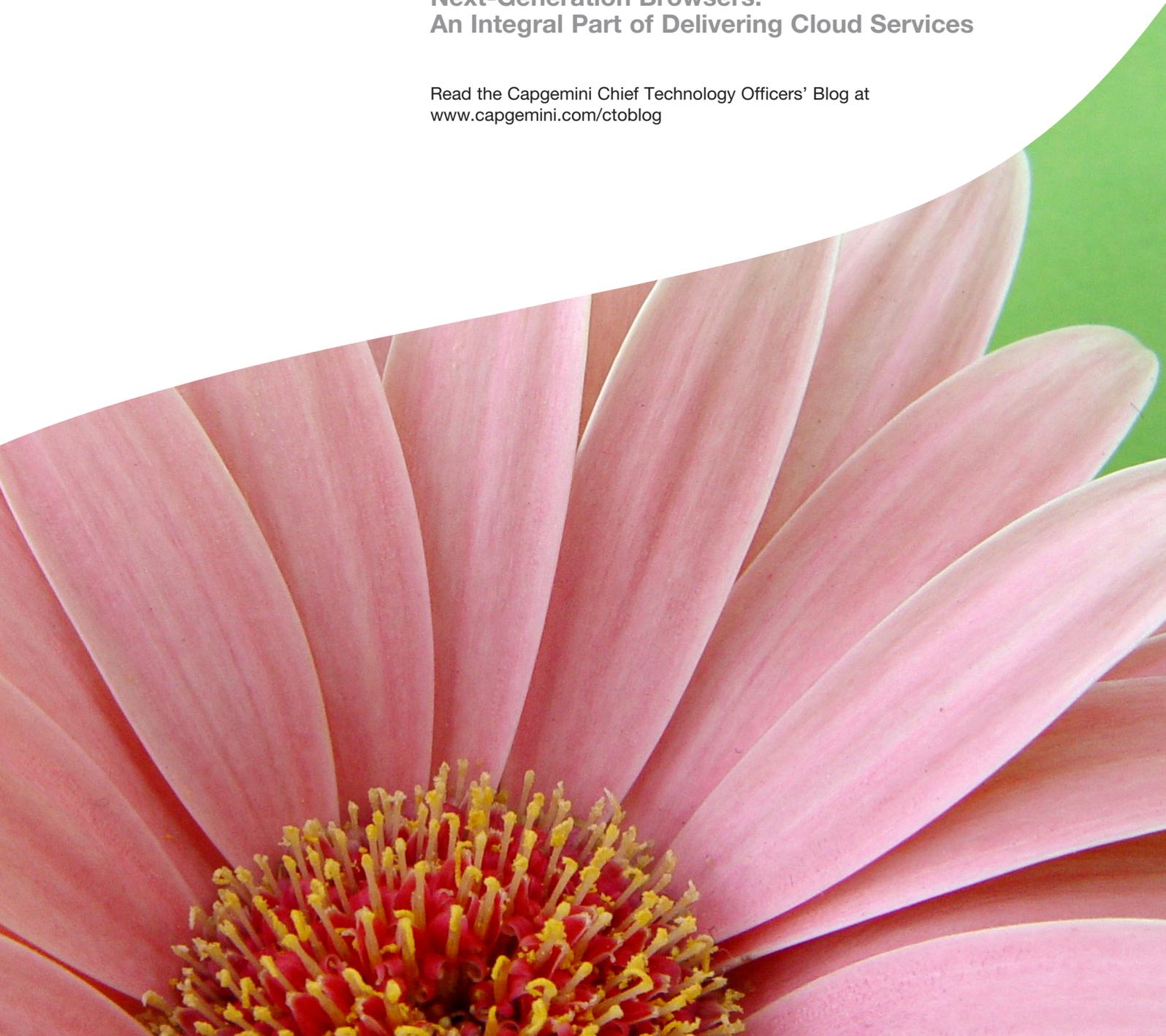


# Changing the Game: Monthly Technology Briefs

December 2010

**Next-Generation Browsers:  
An Integral Part of Delivering Cloud Services**

Read the Capgemini Chief Technology Officers' Blog at  
[www.capgemini.com/ctoblog](http://www.capgemini.com/ctoblog)



## Next-Generation Browsers Needed to Deliver Cloud Services

The pre-release of the Microsoft Internet Explorer 9 (IE 9) browser at the end of September was the first in a series of releases that move the capabilities of the browser into a more suitable delivery vehicle for delivering cloud services. Google Chrome 7 is on the starting block, and Mozilla Firefox 4 is at beta release 6, while more specialized browsers such as Opera, popular for mobile devices, is also moving towards significant changes. These new releases are not just about boosting speed, though Google claims that Chrome 7 is up to sixty times faster, they are about supporting a new generation of Rich Internet Applications (RIAs) that go beyond the display of content from the Web that dominated the design of the current generation of browsers.

RIAs are in use today as improvements in graphics around content have been developing for some time, and lie behind the success of Adobe and the introduction of HTML 5. The goal now is to seamlessly blend content with process in a continuous uninterrupted flow that will enable browsers to smoothly scroll through and handle complex long-running interactions with content that will also be interspersed with application style transactions. The current progress through a series of web pages interspersed with relative long waits will become a thing of the past.

At the heart of these changes is the need for browsers to have new capabilities to carry out their role as the delivery mechanism for the more complex 'services', or orchestrations of 'services' that the shift to genuine cloud computing will provide. This requires the browser to move beyond being a simple display device for content and making few demands on the PC, or device, on which it is running to actually requiring both the operating system and the hardware to be designed to support it. In the case of Microsoft IE9, this means a Windows 7 operating system and the presence of a graphics processor unit as part of the hardware. It is unlikely to be a coincidence that the release of Google Chrome 7 comes at the same time as the launch of a full-scale Chrome operating system to supplement Android.

To date the simplicity of browsers has allowed new capabilities to be built and delivered as web-based services, and, therefore, to delay desktop refresh cycles. Now, ironically, it is likely that a switch to full-scale use of RIAs running as services invoked and delivered from clouds requiring new next-generation browsers will become the reason for many enterprises to bring forward their delayed desktop refreshment. However, this may not take the form of refreshment of like-for-like desktop PCs. Instead, this may be the moment when more liberal policies offering the opportunity to users to provision their own devices, or to choose to start a corporate move to switching to tablet PCs or smart phones, becomes a practical reality.

The real business reason underpinning these changes is not the browser, nor is it clouds in themselves, but it's the new business valuable capabilities that can be built and deployed using a combination of the two. However, first it is important to grasp how different this new environment is against the current IT environment. Think of browser/cloud as the new equivalent to client/server in terms of the approach with 'services' replacing applications, and orchestrated processes replacing ERP-style procedures to get a grasp of the breadth of the change. Correctly, this should be defined as browser/cloud is a 'loose-coupled and stateless' environment that is demand-driven and non-deterministic in its use of resources. By contrast, client/server is 'tight-coupled and stateless' and its use of resources can be allocated by calculating certain factors.

Understanding this difference reveals exactly why experts in cloud systems that are based on this new set of technologies are quick to point that an existing client/

server application delivered by Software as a Service (SaaS) is not part of a cloud. For that matter, it also explains why an existing data center whose operational efficiency to deliver its current client/server applications is improved by virtualizations is not part of a cloud either!

All of which returns to building and deploying 'services' based on RIAs as the game changer enabled by the browser/cloud model. So what does this look like? The Microsoft IE9 beta can be used with a pilot Amazon website called BookShelf that demonstrates the abilities. The same site can be viewed by an existing browser and the comparison is striking. Using an existing browser reveals a picture of books positioned on wooden shelves as a good piece of graphical content; viewed with IE9 it becomes an interactive mix of content, real-time data analysis, and process.

Rolling your hand, or browsing, along the bookcase allows a seamless scrolling across an apparently endless set of book shelves with each book displayed as a high-definition graphic cover, with no pauses for page refreshes. The area covered by the book case is defined by topic, and driven by your past preferences to decide what books Amazon will place on 'your' bookcase. As your hand passes over each book information and reviews are displayed, in turn relating to what others have said about the book. More crucially, this links to whether people who bought this book have purchased and liked other books that you have bought. This is real-time data with contextual linking embedded into continuous graphic reality, and even augmented reality when 3D projections can be provided. At the same time, decisions can be made to invoke transactional processes such as the entire process of buying and electronic delivery of the book, posting reviews, etc. All of this without leaving a set of pages or waiting for screen changes.

The effect comes from the continuous ability to combine granular 'services' into the processes that are flowing across the browser, which is supported by the real-time allocation of computational resources from the servers that make up the cloud. At the same time, the browser has to provide new services to interpret the user's moves to the 'services' and provide rapid, real-time, seamless refreshments. An excellent example of this can be seen in how specialist vendor Plantir already provides a mobile app that can interpret what an object in the camera view is, and then paste onto it all the relevant information known about that object. These are two examples of the revelation that browser/cloud 'services' is bringing to business capabilities and what is meant when the term 'combining People, Intelligence, and Processes' is used in connection with clouds.

However, it also means that browsers, together with devices and operating systems on which they run are also part of the changes that clouds bring, and that the ability to make full use of new business capabilities is now within reach.

The impact of this and other technologies is discussed in the [Capgemini CTO Blog](#).

## Leading Company Results (Revenues)

Leading Company Results (Revenues)	
Q4	<b>HP</b> ↑ 8% @ \$33.3bn
Q3	<b>Dell</b> ↑ 27% @ \$4.3bn
Q1	<b>Cisco</b> ↑ 19% @ \$10.75bn

### Movements by Industry Leaders

**Cisco SocialMiner** supports social client relationship management (CRM) by helping to find and respond to comments on Twitter, Facebook, etc. **Cisco Virtualization Experience Infrastructure (VXI)** aims to support collaborative working across virtualized systems and devices complete with governance and security by managing the end-to-end integrations and orchestrations. **Cisco and VMware have partnered** to provide a new set of **Desktop Virtualization capabilities** to create virtual desktops by combining Cisco Unified Computing System and VMware View 4.5. [www.cisco.com](http://www.cisco.com)

**Oracle GRC Controls 8.6** element of Oracle Fusion Governance, Risk, and Compliance provides continuous automated monitoring of both Oracle and non-Oracle applications. Oracle has taken a shareholding in **Mellanox Technologies**, a vendor of advanced connectivity switching fabric. Oracle **Sun Ray Software 5.1 update** adds support for a wider range of solutions including rich media from Adobe. Oracle **StorageTek Virtual Library Extension** supports IBM Mainframe Tape systems. Oracle is to **acquire eCommerce software vendor ATG**, a provider of all elements of a cohesive approach to doing business online. **Oracle SunRay 5.1** adds support for more audio-visual media formats amongst other upgrades. **Oracle Enterprise Manager 11g Ops Center** simplifies by integration between traditional, virtualized and cloud-based resources for operation including Oracle ExaData and ExaLogic appliances. **Oracle Tutor 14** integrates Business Process Management Suite 11g and Business Process Analysis Suite 11g into a single process documentation toolset. **Oracle Solaris 11 Express** updates the Solaris Operating System with new faster bootups, online patch management, etc. **Oracle Real Application Clusters** have new VM templates. [www.oracle.com](http://www.oracle.com)

**HP Instant-On** is a package of services that allow applications to be redeployed on virtualized infrastructure or to be shifted to new infrastructure to allow enterprises to be able to move more quickly towards adopting the benefits of new infrastructure. **HP Collaborative ePrint & Share** for Technical Design Professionals bundles AutoCAD with web-based printing. HP has created **six new Global Delivery Hubs** to underpin its best shore strategy for HP enterprise services. **HP Digital Signage** adds two new models under the mp8000 designation. **HP StorageWorks X1000 and X3000 G2** network storage systems are Windows Storage Server 2008R2-based mid-sized storage systems. **HP Visual Collaboration** extends the existing Halo Video Conferencing products to include desktops. [www.hp.com](http://www.hp.com)

**Intel will play a leading role in the Open Data Center Alliance** to create standards and best practices for public and private cloud data centers to ensure interoperability of services. **Intel WiFi Direct Card** allows multiple devices to connect to a single WiFi Direct card using WiFi instead of BlueTooth. Intel, Microsoft, and NEC are joining forces to build 'next-generation digital signage solutions'. A new generation of **customizable Atom processors** equipped with a Field Programmable Gate Array to allow customization of Input/Output interfaces. [www.intel.com](http://www.intel.com)

**IBM Information of Demand event** embraced a vision of unstructured data from Video, email, and text which IBM senior VP Steve Mills claims now makes up 80 percent of Enterprise Data and is driving their new products. **IBM DB2 10**

**Database update** for System z is claimed to boost performance by up to 40 percent as well as adding new features to suit today's changes in use. **IBM Case Manager** manages and automates unstructured data into processes that can be used by Social Collaboration tools. **IBM General Parallel File System – Shared Nothing Cluster** is a new approach to storage for cloud environments requiring access to vast amounts of data online. [www.ibm.com](http://www.ibm.com)

**Microsoft Office for Mac 2011** bundles the latest versions of Word, Excel, PowerPoint, Messenger, and Outlook to run on Mac OS X. **Microsoft Lync 2010** update pack for Office Communications Server and Communicator Platform is now available providing full integration of various messaging formats with Office. The final release candidate (beta) for **Windows 7 SP1** has been made available for public trial. **Microsoft roadmap for Azure** adds a new Azure Virtual Machine with the capability to run Windows Server R2 in the Azure Cloud with a beta before year end, and new tools that include automatic conversion of apps to run on Azure during 2011. **Microsoft Kinect for Xbox 360** introduces interaction with games directly by tracking body movement with no controller/mouse etc. Microsoft **SQL Server 2008 R2 Parallel Data Warehouse** introduces new higher levels of scalability and critical support for data warehouses. **Microsoft Lync Converged Communications Platform** is now shipping with the client side called simply Lync 2010 and the server side changes the Office Communications Server into the Lync Server 2010. **Microsoft Dynamics GP2010 R2** adds a new user interface and personalization for BI dashboards, workflow, and other features. **Microsoft IE9 Platform Preview 7** updates the current test release with claims for improved performance. [www.microsoft.com](http://www.microsoft.com)

**SAP Business One is now available on iPhone** as a free download to any SAP customer with Business One 8.8 patch level 12 or higher. **SAP Bus Objects Planning and Consolidation** application gains a new process kit to integrate components for liquidity planning. [www.sap.com](http://www.sap.com)

**Google security bug reporting** from researchers will in future attract bounty payments as the current reporting scheme has been very successful in finding deeply buried weaknesses. **Google Mobile Search** for iPhones and Android has been upgraded to include Google Instant. **Google Preview** allows a webpage to be seen as part of the search findings to save users having to open each page to see if it is the answer they want. Google have publically trialed a **plug-in to Google Docs for Microsoft Office** based on DocVerse technology. [www.google.com](http://www.google.com)

**Apple are partnering with Unisys** to offer enterprise maintenance support to capitalize on the popularity of Apple products with Enterprise users. **Apple's fight with Adobe over RIAs** standards has now seen Adobe Flash being dropped from the MacBook Air in favor of the Apple led HTML5 standard. **Apple iOS 4.2 Firmware** is released to the Apple Developers Community. **Apple Xserve** range of rack mounted servers will be discontinued at the end of January 2011, with its replacement being a new version of the Mac Pro Tower. **Apple iOS 4.2 update** offering multi tasking and much improved user interfaces and extensions is now available for download. [www.apple.com](http://www.apple.com)

#### Open Source Update

**Ubuntu will adopt Unity User** for its next Linux Platform with the aim of rebuilding the user interface to broaden its attraction to a wider user basis. [www.ubuntu.com](http://www.ubuntu.com)

**RedHat Enterprise Linux 6** is an important update claimed to layout the structure of Linux for new roles in multi-processor, high availability, and high-performance systems with new enhancements to the kernel for these tasks. [www.redhat.com](http://www.redhat.com)

**Mozilla Firefox 4 Beta 7** is now available and is reckoned to be 3 to 5 times faster than before, with a quicker boot-up time as changes to this beta. **Mozilla Firefox 4** release is now delayed till early 2011 after problems with the last beta led to more issues to be addressed than expected. [www.firefox.com](http://www.firefox.com)

**Consumer Electronics Linux Forum (CELF)** is to merge with the Linux Foundation to create a single group supporting embedded Linux code. [www.linuxfoundation.org](http://www.linuxfoundation.org)

**MeeGo 1.1 Mobile Phone project** update supports touch-based Tablets as well as phones together with a reference architecture. **AMD is joining** the MeeGo project and plans to take an active role in assisting the project with its chip design knowledge. [www.meego.com](http://www.meego.com)

**OpenOffice has seen mass resignations** with 33 members blaming Oracle for its unhelpful attitude as the reason for their en masse defection to LibreOffice as a separate entity to continue the work. [www.openoffice.org](http://www.openoffice.org)

**The Symbian Foundation** is to hand full commercial control to Nokia in early 2011 though Symbian will remain a legal entity to license and manage the Intellectual Property of Symbain. [www.symbian.org](http://www.symbian.org)

**SugarCRM Sugar 6** now adds support for social media sources such as LinkedIn and Twitter as well as for Smart Phones. [www.sugarcrm.com](http://www.sugarcrm.com)

**Novell Vibe Collaboration tool** brings together Novell Pulse and Teaming software into a cloud deployable solution that provides enterprise synchronization as well as personal tools. [www.novell.com](http://www.novell.com)

**Oracle and Apple OpenJDK Project for MAC OS X** is a new move with Apple providing technology requirements for a Java SE 7 built on Mac OS X. [www.apple.com](http://www.apple.com) [www.oracle.com](http://www.oracle.com)

**Avaya IP Office 6.1** moves the entire communication platform to being based on a Linux Operation System, previously based on Microsoft, and along with the usual range of feature improvements there is a claim to greatly reduced cost of ownership. [www.avaya.com](http://www.avaya.com)

#### Standards Watch

**The Payment Card Industry Security Standards Council (PCI-SSC)** has produced version 2.0 of its Data Security Standard and Payment Application Data Security Standard. <https://www.pcisecuritystandards.org/>

**PCI Express (PCIe) standard** is the basis for a new attempt to standardize form factor and interfacing for high performance Solid State Drives (SSDs) with Intel, IBM, EMC, Dell, and others collaborating on the feasibility. [www.pcisig.com](http://www.pcisig.com)

**Cloud Industry Forum (CIF)** has launched a code of practice for the governance of cloud data centers to build trust in security and operating standards. [www.cloudindustryforum.org](http://www.cloudindustryforum.org)

#### More Noteworthy News

**VMware and Cisco have partnered** to provide a new set of Desktop Virtualization capabilities to create virtual desktops by combining Cisco Unified Computing System and VMware View 4.5. [www.vmware.com](http://www.vmware.com)

**The annual AdobeMax event** introduced major new moves; **InMarket** is a Software Development Kit for use by developers to create Apps for resale via the Adobe InMarket site with Adobe managing all the commercial transactions in exchange for a 30 percent commission. **Adobe Mobile Advertising Platform** is supported by six advertising groups based on FS-video. Adobe **Digital Publishing Suite** aim specifically to provide high-grade digital magazines on Tablets including Apple iPad and Android. **Adobe Connect 8 Meeting** place update is claimed to completely change the collaboration experience. **Adobe Acrobat X**, the latest version of the ubiquitous PDF tool is now available as the high end purchased application with the free download version following in a few weeks. [www.adobe.com](http://www.adobe.com)

**EMC are acquiring Isilon Systems** in support of their 'big data' concept using Isilon leadership in scale out Network Attached Storage (NAS) to supplement their own products. [www.emc.com](http://www.emc.com)

**Juniper Networks Junos Pulse Mobile Security Suite** adds a comprehensive mobility security platform covering service providers to enterprise and providing access management with device policy management. **Juniper T4000 Core Router** is the new top of the range unit offering 240Gbit per chassis slot and more than twice as fast as their previous high-end unit. Juniper is to **acquire wireless networks vendor Trapeze Networks** to add wireless LAN products to its networking line up. [www.juniper.com](http://www.juniper.com)

**Dell is to acquire Boomi**, a SaaS provider of expertise offering similar skills to 3PAR who HP bought after Dell lost a bidding war last month. **Dell Streak is now upgraded to Android 2.2** with significant changes in capabilities including Adobe 10.1 flash, Skype, and WiFi hotspot support. [www.dell.com](http://www.dell.com)

**Infor has appointed Charles Phillips** as its new CEO with the challenge of radically growing the little known ERP software vendor. [www.infor.com](http://www.infor.com)

**Ray Ozzie has published his vision** for a post-PC world called 'Dawn of a new day' defining a world of constantly connected devices supporting and supplied by services. <http://ozzie.net/docs/dawn-of-a-new-day/>

**BlackBerry Enterprise Server Express** has a free upgrade to connect BlackBerry users to IBM Lotus Domino. **BlackBerry Bold 9780** is an updated version of the existing 9700 based on the BlackBerry 6 Operating system to add multi-tasking and social feeds integration amongst other features. [www.blackberry.com](http://www.blackberry.com)

**Compuware CloudSleuth** builds on the federated nature of the cloud by creating a partnership in which various technology providers can work to provide best practices with initial of OpSource, GoGrid, and CDNworks. [www.compuware.com](http://www.compuware.com)

**Twitter will be placing adverts into Tweet threads** between users in its search to monetize its popular service in addition to the current practice of including adverts in search results. [www.twitter.com](http://www.twitter.com)

**RSA Data Protection Manager** is a new and revised product based on the older RSA Key Manager but adding a wider range of security and encryption tools to form a larger integrated suite. [www.rsa.com](http://www.rsa.com)

**Opera Mobile 10.1 Browser** is now available as a beta for Android devices and can be obtained from the Android store. [www.symantec.com](http://www.symantec.com)

**ARM Mali Graphics Processor Unit** aims to bring high performance graphics for games and RIAs to Smart Phones, TV set top boxes, and embedded systems.

[www.arm.com](http://www.arm.com)

**Riverbed Technology Steelhead Appliance** performance optimizers now cover cloud-based solutions based on Amazon's Elastic Cloud and Virtual Private Cloud platforms. [www.riverbed.com](http://www.riverbed.com)

**Hitachi UltraStar SSD400S** is a new range of Solid State Drive (SSD) based storage systems for Enterprise use and are claimed to offer a first in providing both SAS and Fiber Channel connectivity. [www.hitachi.com](http://www.hitachi.com)

**Brocade VDX 6720 Data Center Switch** offers 10 Gigabit Ethernet port switching with a claimed low latency. [www.brocade.com](http://www.brocade.com)

**Ariba is acquiring Quadrem**, a fellow supply chain manager specializing in certain vertical markets with products based on SAP SRM. [www.ariba.com](http://www.ariba.com)

**Attachmate is to acquire Novell** through buying its assets to form two trading blocks, one focused on Suse Linux and the other on its remaining products.

**Microsoft will buy certain other assets** relating to past agreements around Linux. [www.attachmate.com](http://www.attachmate.com)

**Capgemini has acquired Thesys Technologies**, an Indian IT Services specialist in banking solutions with a focus on T24 Temenos delivery management.

[www.capgemini.com](http://www.capgemini.com)



## About Capgemini and the Collaborative Business Experience™

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies. Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working, the Collaborative Business Experience™. The Group relies on its global delivery model

called Rightshore®, which aims to get the right balance of the best talent from multiple locations, working as one team to create and deliver the optimum solution for clients. Present in more than 35 countries, Capgemini reported 2009 global revenues of EUR 8.4 billion and employs over 100,000 people worldwide.

More information is available at [www.capgemini.com](http://www.capgemini.com)

### Andy Mulholland

Global Chief Technology Officer, Capgemini

Tel. +44 (0)207 434 2171

[andy.mulholland@capgemini.com](mailto:andy.mulholland@capgemini.com)