

# Changing the Game: Monthly Technology Briefs

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**Internet, to Web, to Clouds:  
The Critical role of Standardization**

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## Internet, to Web, to Clouds – the Critical Role of Standardization

The evolutionary path of the new generation of technology based on services delivered from clouds began with the Internet as did the use of standards to ensure universal connectivity. The World Wide Web followed by extending this principle to provide universal content capabilities, and these two building blocks transformed the understanding of what technology could do. For the first time, a genuinely open external environment in which people could find and exchange content emerged around a relatively simple set of standards using a very different approach to the application-centric proprietary internal use of IT to automate business process.

The new Internet/Web model became the basis for further development leading to Web 2.0. This again promoted simple standards for accessibility that could support a growing range of services through which people could gain the new capability for human-centric universal interaction. The important point with both the Web and Web 2.0 was the manner in which standards allowed ‘any’ to ‘any’, or ‘any’ to ‘many’, and even ‘many’ to ‘many’ activities to be supported on-demand, with no pre-planned integration being required. This is a radical departure from the client-server application generation of internal IT, where the number of users of an application, and, its relationship to every other system must be established.

Client-server IT is based on a close-coupled, state full, deterministic architecture. Close-coupled is where the coupling between all elements must be pre-arranged to overcome incompatibilities, while the state refers to being data-centric and the need for ‘one version of the truth’, i.e. the single database that ERP introduced as an example. Deterministic, on the other hand, means that the numbers of users, the amounts of processing power, or storage are all determined in advance and allocated. The contrast with the Internet/Web and the true cloud model could not be greater, as every point is reversed.

The Architectural model is loose-coupled, stateless, and non-deterministic, meaning there is no pre-determined coupling. Instead standards ensure that each system and service can be invoked as and when needed (think of web browsing across the entirety of content available as an example). Stateless refers to there being no data centrality to be maintained, instead browsers obtain Representational State Transfers or REST sessions during which they have an image to use (think of Google Maps and compare this to a client-server geospatial application).

This point is very important in supporting the ability to scale way beyond anything that a conventional database can support, and in terms of security of data. As an example, primarily in the US, this has facilitated shared medical information systems to be implemented as there is no exchange of the actual data required, thus maintaining the law on data privacy. Finally, the non-deterministic element refers to the ability to support as many users and services as are required through scale up and down on demand. This last point lies behind the ever increasing use of Open Source, as traditional application licensing agreements simply cannot support this model.

But why the term **true** clouds? It was chosen as a name for the evolution of the Internet-Web architecture towards its next stage, the capability to support universal shared processes due to the characteristic of the loose-coupled, stateless, non-deterministic architecture inadequately represented by an Enterprise Architecture diagram. Whereas in close-coupled, state full, deterministic, it is possible to detail exactly what is connected to what, and for what purpose, using which protocols, etc., this is simply impossible with loose-coupled, stateless, non-deterministic

architecture. Here, the only possible way diagram can show which systems are connected to which, and offer what services, are via clouds.

By definition, a client-server architecture can never be a true cloud-based architecture. But using technology from the Internet/Web/services generation of technology such as virtualization to improve the operation efficiency of client-server is of great value, and this offers a range of new benefits often referred to as 'cloud'. The other issue is that, almost by definition, a true cloud will be operating around 'services' based on standards to support the 'any to any' and 'on demand' elements of the architecture.

'Services' - the latest evolution - introduces universal shared processes, an element conspicuously lacking on the web current when various ways of using forms on the content model are the only possibility. In much the same way as content is placed on a web server for consumption, services are made available together with an orchestration that determines what services, from where should be assembled on-demand, to produce a cohesive, and complex process that may extend across several enterprises.

The ability to add universal shared processes into the external inter-enterprise space marks a significant revolution in business commerce. This has led to a new generation of standards that go beyond just technology issues being formulated, as well as discussion at the levels of the World Economic Forum (WEF). A selection of important discussion papers and technology standards are given below.

1. The [World Economic Forum](#) has recently conducted a survey and number of publications on the topic of Cloud Computing among its many interests including climate change and economic growth.
2. **Security guideline standards** - [Cloud Security Alliance](#) (CSA) is a significant standards body that has led to the development of identification, authentication, authorization, encryption and secure access to personal and corporate data and assets.
3. **Grid Computing and cloud projects**, [Globus Project](#) [OGSA](#) [Open Grid Services Architecture](#) (OGF), [Nebula Cloud](#) (NASA) , [eScience](#) [Open Science Data Cloud](#), [Reservoir fp7 project](#), [OpenStack](#) , and others.
4. API standards – for access to cloud resources can be split into open and closed or proprietary APIs.
  - OCCI Open Cloud Computing Interface – from [OpenGridForum](#) or OGF.
  - Cloud Data Management Interface or CDMI from [Storage Network Industry Association](#) (SNIA)
  - Open Cloud API - Python, Java – [Apache Libcloud](#) development.
5. **Open Data Center Alliance** – the standardization of the data center and its capability to support cloud services.

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

## Leading Company Results (Revenues)

Leading Company Results (Revenues)			
Q4	Oracle ↑ 36% @ \$10.8bn		
Q1	RIM ↓ 12% @ \$4.9bn	RedHat ↑ 27% @ \$267.4mn	

### Movements by Industry Leaders

**Cisco and SAP are partnering** to deliver the SAP High Performance Analytic Appliance (HANA) using the **Cisco Unified** Computing System. **Cisco Cius** is claimed to be a combination phone and PC, likely to become the chief user device supported by a Cisco online Apps Store of trusted applications for homes. **Cisco Telepresence MX200** is a new out-of-the-box auto set-up Teleconferencing unit for SMEs. [www.cisco.com](http://www.cisco.com)

**Oracle JavaFX 2.0 SDK** is now available as a beta download adding Flash 2.0, a new graphics engine and embedded HTML **Oracle Retail Merchandising Analytics** an out-of-the-box business intelligence application that combines multiple data streams to provide new realtime data. **Oracle Insurance Policy Administration for Life and Annuity** now delivers new performance improvements with its new format to run on Oracle Database Machine X2-2. **Oracle Insurance Revenue Management and Billing 2.2.3** adds integration with **Oracle Business Intelligence Publisher** as well as a range of extended features. **Oracle Financial Services Hedge Management and IFRS Valuations** is new and aimed at supporting US regulatory requirements and is an extension to Oracle Financial Services Analytical Applications Suite. **Oracle Infrastructure as a Service** is a new brand under which Oracle will provide on-demand computational resources based on Oracle Linux managed by Oracle Enterprise Manager 11g. **Oracle VM Server for SPARC 2.1** provides up to 128 virtual machines from a SPARC chip. **Oracle Entitlements Server 11g** provides a separate in-depth management capability for corporate governance as part of Oracle Fusion Middleware 11g. **Oracle Health Services InForm Global Trial Management 5.5** update for managing clinical trials. **Oracle Insurance Insbridge Rating and Underwriting 4.5** updates the single risk management application adding international capabilities around multiple languages. **Oracle JDeveloper 11g R2** and **Oracle Application Development Framework 11g** add support for newer standards and improvements to the Integration. **Oracle is suing Google** for 'billions' alleging patent infringement of Java. **Oracle Enterprise Taxation and Policy Management 2.3** updates revenue collection optimization. [www.oracle.com](http://www.oracle.com)

**HP is acquiring Printelligent**, a managed print services provider into the SME market place, to upgrade their abilities to service the SME sector. **HP T5335Z and T5565z thin** clients provide hardware that supports thin clients and virtualization from several vendors including Microsoft, Citrix and VMware. A further version 6360t supports embedded Windows and is for mobile users. **HP Battery recall** hits 162,000 batteries in various PCs, a list of affected models is on the HP website. **HP has sold its Halo Video Conferencing business** to Polycom – see entry under Polycom name. **HP IT Performance Suite** is a new approach from HP to providing senior IT management with an Executive scorecard on the effectiveness of their network services. **HP WebOS Platform will be opened up** to encourage developers to use WebOS for their work as HP reaffirms that all their devices will ship with WebOS, meaning a market of 100 million devices claims HP. **HP App Systems Appliances range** has new products including Vertica Analytics System for real-time data analysis, and a new SQL Server Data Warehouse Appliance. **HP Storage is the new brand** for what was HP StorageWorks and new products including the high-end **P6000 Enterprise**

**Virtual Array System** for 480 Terrabytes. **HP CloudSystem**, a key part of the HP strategy, offers not only virtual machines but also application ready machines, back-up burst support and white label capabilities for service companies to use to support their own customers. **HP CEO Leo Apotheker says the cloud is a massive disruption** and that HP will invest \$2 billion in building its portfolio of services to support hybrid clouds mixing public and private services. **HP Probook range of notebooks** now includes new models using the new AMD A series Advanced Processor Units. **HP WebOS powered devices, PC, Tablet, and Smartphone will all support Near Field Communications**, thus joining in a move by Google Android and RIM Blackberry to develop this market place which Apple has so far declined to support. **HP Vertica 5.0 Analytics Platform** upgrade improves performance, use of cloud resources and adds new SQL analytic capabilities that scale to Petabyte levels. [www.hp.com](http://www.hp.com)

**Intel AppUp Small Business Service** introduces a new business model in which Intel own label servers will be leased on a three-year basis to SMEs, complete with Intel Software and Cloud Services store, to be able to operate their own in-house IT on a pay-as-you-go basis. **Intel Medfield 32nm platform** forms the basis for a new class of 'ultra book' Intel is promoting for next generation Tablets and Smartphones to fight back at ARM's dominance in this market sector. Intel has shown its **new Super Computing Platform** based on Many Integrated Cores (MIC) and using x86 code at the annual International Super Computing Conference. [www.intel.com](http://www.intel.com)

**IBM stated its Cloud Strategy would aim at providing 'common vanilla' services** that are required for everyone in a specific industry sector. **IBM Health Analytics Solution center** is to have new technology and offer a wider range of services. In a similar move, **IBM Service Provider Delivery Environment** will add to its capabilities to support Communications Services Providers. **IBM Smarter Commerce Initiative** will be expanded to encourage the building of industry and partner ecosystems in more vertical sectors. **IBM Rational Team Concert provides collaboration tools** to manage the interactions and activities of development teams and **IBM Collaborative Lifecycle Management 3.0** allows dynamic assessment of changes to development with the effects being analyzed and shown. **IBM High Performance Computing (HPC)** systems are now offered with cloud services to enable them to work with other IBM systems. **IBM is 100 years old this month.** **IBM Resilience Suite for Clouds** now adds to SmartCloud Managed BackUp two new services; **SmartCloud Virtualized Server Recovery and SmartCloud Archive**. A partnership with Actiance extends **IBM Connections Platform** to be able to track and analysis social activity for compliance purposes. **IBM Netezza High Capacity Appliance** is a modular system that scales up to Petabytes to offer high-end database analytics. [www.ibm.com](http://www.ibm.com)

**Microsoft** is keen to preview its **next major release of Windows Phone called Mango**, which will be a free upgrade to Windows Phone 7 customers, and is claimed to offer more than 500 new features that 'push the boundaries' of the Smartphone experience. **Microsoft Dynamics AX 2012** gains new features targeting the public sector. **Microsoft Windows Mobile App store and My Phone Service** both set up to service the needs of the market two years ago are to be shut as Microsoft moves to consolidate its one platform approach. **Microsoft C++Accelerated Massive Programming, C++AMP**, is a new approach to C++ development that is claimed to make applications run up to 100 times faster by using massive parallel computing supported by cloud resources. A limited distribution **free beta Developers' kit of Kinect for Windows** has been made to start interest in developing gesture controlled apps. **Microsoft SkyDrive** update provides a new User Interface with simpler navigation and adds support for new content forms including HTML 5 video. **Microsoft Azure upload charge** for adding data to an existing platform is to be ended from July 1. [www.microsoft.com](http://www.microsoft.com)

**SAP is partnering with Palantir** to offer a new set of intelligence analysis capabilities for emergency and security forces. **SAP Crystal Reports becomes Crystal Server 2011** and is now positioned as an entry level device for Business Intelligence shipping with extra capabilities such as Business Objects Explorer. **Business Objects Edge 4.0**, out later in the year, now adds unstructured data analysis and social networks data analysis. **SAP NetWeaver Single Sign-on** based on the acquired Secude Software includes third party authentication. **SAP NetWeaver 7.3 provides a substantial upgrade** unifying all Java elements, simplifying new implementations, process changes, extending integration to other SAP elements such as NetWeaver Portal and Business Warehouse, and adding external integration to Microsoft Excel. **SAP HANA** in-memory computing method to delivery high performance real-time decision making is now available. [www.sap.com](http://www.sap.com)

**Google Wallet App, a form of pre-payment card** accepted at a claimed 150,000 US stores is now available on the Nexus S Smartphone. **Google Gmail People Widget** adds a sidebar with information about the people and events that relate to the email being read. **Google Apps** will no longer support several older browsers including Microsoft IE7, Firefox 3.5 and Apple Safari 3. **Google is acquiring Admeld**, the advertising management company, and will link it to Google DoubleClick to allow advertisers to understand the effectiveness of their advertising and make alterations more simply. **Google Chromebook** from Samsung is first to go on sale via Amazon in the US. The latest **Chromium Platform** has a new set of protections for scripting attacks based on 'man in the middle' attack prevention. [www.google.com](http://www.google.com)

**Apple iCloud offers a set of services that link everything Apple together** which means devices from Mac, iPod, iPhone iPad, through to MobileMe, iTunes, iBook and everything in the App Store in a manner that renders the cloud a provider of personal user-oriented services/devices. Other services include iCloud Backup automatically backing up and synchronizing, iCloud Storage as a common shared repository, and Photo Stream to provide a single shared cache of photos. **Apple iOS5 beta** is now available for downloading by developer program members offering more commonality between iPhone, iPad, and iPod features together, with a new iMessaging capability allowing rich content interchange between iOS 5 devices. [www.apple.com](http://www.apple.com)

**Amazon Software Application Store** is offering more than 250 downloadable Apps in competition to Apple App Store in the latest round of their fight over use of the term App Shop as much as the competition in the market to sell downloadable Apps. [www.amazon.com](http://www.amazon.com)

#### Open Source Update

**Project Olympus, an OpenStack based version of Citrix** for cloud deployment supported by Dell, Rackspace, and about seventy other partners. [www.citrix.com](http://www.citrix.com)

**Apache Software Foundation LibCloud project** now claims to support 20 cloud platforms with a Python library that allows developers to use APIs to deploy via chosen clouds. [www.apache.org](http://www.apache.org)

**Mozilla FireFox 5.0** is now available for download and includes support for Windows, Apple Mac and Linux Operating Systems, and is a continuation of the accelerated development path that shortens time between updates. [www.mozilla.com](http://www.mozilla.com)

**OpenOffice has been passed to Apache Software Foundation** by Oracle thus creating a permanent split with the faction that left OpenOffice to form the LibreOffice project. IBM has stated that it will take an active role in supporting OpenOffice now it is under the Apache Foundation. [www.openoffice.org](http://www.openoffice.org)

**The Document Foundation** supporter of the Libre Office Project is establishing an Advisory Board to ensure impartial governance of its various Open Source Projects. [www.documentfoundation.org](http://www.documentfoundation.org)

#### Standards Watch

**The Open Visual Communication Consortium (OVCC)** has been launched by Polycom to persuade various teleconferencing providers of the benefits of interoperability and the creation of a common standard.

[http://www.polycom.com/company/industry\\_affiliations/ovcc/index.html](http://www.polycom.com/company/industry_affiliations/ovcc/index.html)

#### More Noteworthy News

**IDC report on Smartphone Q1/11 market shares** in Europe with Apple overtaking Nokia to become first with 21%. Nokia is at 20% but, at third place, Android's sales are increasing at a rate that suggests that it could well be number one by the end of 2011. [www.idc.com](http://www.idc.com)

**Gartner report Security Software market** grew by 12% in 2010 to become a \$16.5bn market with most of the growth firmly focused on new types of security requirements associated with new devices and new ways of securing information/data. [www.gartner.com](http://www.gartner.com)

**Ovum report the Global IT Services market** grew by just 2% in 2010 and forecast continued slow growth rising to 4.5% growth in 2013. IBM remains market leader followed by HP and Fujitsu but all experienced decreases in revenue in 2010; by contrast Indian players still continued to grow.

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

**IHS iSuppli reported PC sales fell by 11 million units in Q1 2011.** HP retains first place, Dell second, Acer third, and Lenovo fourth. The consensus was that the Tablet and Smartphone boom were taking sales from the PC market.

[www.isuppli.com](http://www.isuppli.com) Conversely, **Gartner reported the Server market in 2010 grew by 8.5%** with HP in first place, closely followed by IBM at 30.2 and 29.7% respectively, followed by Dell at 14.9% and Oracle with 6.3%, but with the fastest growth up 33.6%. [www.gartner.com](http://www.gartner.com)

**Dell EqualLogic FS7500** network attached storage system offers a new architecture called Fluid Data, which is claimed to increase scaling abilities providing up to 510 Terrabytes storage. **Dell Vostro 260** is a new SME PC line with so-called 'out of the box', ready-to-use set-up that sees a full set of software and support services preloaded and price bundled with the Dell hardware.

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

**Cray new supercomputer XK6** is based on AMD Opteron processors and Nvidia Tesla Graphic Processors, and is claimed to have a performance of 50 Petaflops.

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

**Citrix annual Synergy Conference** focused on the 'post PC era' which their CEO defined as being defined by personal, private and public cloud and that their strategy had driven new products and upgrades to support this. **XenClient 2 desktop** Virtualization upgrade now covers hardware not using Intel vPro. A specialized security version called **XenClient XT** will follow, as will a new version of Citrix GoToMeeting with high grade video, and another on their **Project Olympus** open stack based cloud project. [www.citrix.com](http://www.citrix.com)

**Opera Mini 6 Browser** for Apple iOS devices is now available and offers a section of hot buttons to connect to Facebook, Twitter, etc. [www.opera.com](http://www.opera.com)

**Twitter is to acquire TweetDeck**, a developer of Twitter user software, that has already gained an extensive user base amongst those looking to organize or monitor Tweets. **Twitter has added a new feature** that amends posted urls into unique nineteen character addresses as a security feature to stop tweets redirecting people to malicious sites. [www.twitter.com](http://www.twitter.com)

**Sage Software upgrades ERP X3** adding support for iPad, social networking, and search to an updated core ERP package. [www.sage.com](http://www.sage.com)

**Aerohive HiveManager 4.0 WiFi Network hotspot manager** has been upgraded with new tools to manage iPads, Smartphones and Tablets by providing auto-detection and authentication with policy management. [www.aerohive.com](http://www.aerohive.com)

**Polycom has acquired HP Video conferencing business unit** in a deal that not only acquires the product set and the technology but also provides on-going support to the existing HP customers for Halo systems. **Polycom Unified Communications product line** has been extended to add a new Intelligent Core for service providers that can support 25,000 simultaneously, the OTX100 a simple low-cost telepresence single screen unit as well as new hosted services for Video Content Management. [www.polycom.com](http://www.polycom.com)

**Lenovo is acquiring Medion**, a German supplier of laptops and allied devices, to strengthen its presence in Europe. **Lenovo add ThinkServers TS130 and TS430** to provide low-cost servers based on the ThinkPad design for SMEs and a new **ThinkCenter M71e Desktop** system. [www.lenovo.com](http://www.lenovo.com)

**HTC Android based OpenSense** Software Developers' Kit has been launched to encourage developers to maximize use of the popular and effective HTC Sense User Interface to Android. [www.htc.com](http://www.htc.com)

**Adobe claims Flash can now run on Apple iOS** as a standalone application in an Adobe Air Window and Adobe is now fully committed to HTML 5.0 as a longer term solution that will solve the current Apple v Adobe issues. **Adobe Flash Builder 4.5/Flex 4.5** now adds developer tools for Apple iPhone and iPad, plus Blackberry Playbook. [www.adobe.com](http://www.adobe.com)

**MobileIron Virtual Smartphone Platform** aims to provide an app store and control for user-owned devices that is managed by their Enterprise IT to ensure good quality apps and security is maintained. [www.mobileiron.com](http://www.mobileiron.com)

**Informatica 9.1 Platform** supports most Data Warehouses and can be used to integrate and manage data trends across multiple data warehouses with Hadoop scalable processing. [www.informatica.com](http://www.informatica.com)

**Facebook Face Recognition feature** has caused controversy as its rollout and user controls were deemed insufficient and resulted in privacy risks. [www.facebook.com](http://www.facebook.com)

**AMD Fusion A series** configured for laptops and desktops in the mainstream boosts performance towards visual performance including video, and 3D presentations. AMD Development Tools have been extended to **support OpenCL** with four specific tools. [www.amd.com](http://www.amd.com)

**SAS Fraud Management 3.2** adds a new twist to the increasing tendency to claim 'out of the box' usability instead the product will be custom tailored at a SAS specialized center by working through with customers exactly what and how they want the solution to work in their enterprise. [www.sas.com](http://www.sas.com)

**Nuance Communications Dragon NaturallySpeaking 11.5** update now adds support for Apple iOS devices to act as remote microphones passing the speech back to a server running the speech recognition software which in turn forwards it back to the Apple device as text. [www.nuance.com](http://www.nuance.com)

**Cellcrypt Mobile for Android** adds voice encryption for calls from Android 2.3 devices over both cellular and WiFi connections. [www.cellcrypt.com](http://www.cellcrypt.com)

**A shared and very new M-Commerce Initiative** between Vodafone, O2, and Everything Everywhere, provides the basis for the development of a common and shared market to locate and pay for goods using a SIM based 'wallet'. The market is open to all participants from other service operators to banks, as well as those selling products and services. <http://www.mobilenewscwp.co.uk/2011/06/ee-o2-and-vodafone-in-standalone-m-commerce-jv/>

**Sega Games Pass hacked for 1.29 million** user details including passwords. [www.sega.com](http://www.sega.com)

**Nokia N9 Smartphone** introduces gesture-based user interface and Near Field Communications (NFC) all based on the MeeGo operating system using a unique system of three major user screens for easy navigation. [www.nokia.com](http://www.nokia.com)

**McAfee Mobile Security Suite** adds new capabilities to McAfee SiteAdvisor to integrate all security services into a consistent platform covering Mobile and Conventional Devices, whilst WaveSecure adds new capabilities to support Android-based devices. [www.mcafee.com](http://www.mcafee.com)

**Capgemini is acquiring Praxis Technology**, a Chinese provider of IT services and Business Process Outsourcing with a specialty in the utilities market, in line with its strategy of increasingly its position in new high growth markets and the utility sector. [www.capgemini.com](http://www.capgemini.com)



### About Capgemini and the Collaborative Business Experience™

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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 40 countries, Capgemini reported 2010 global revenues of EUR 8.7 billion and employs over 112,000 people worldwide.

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

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