Cloud Computing 2014: ready for real business?

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Overview

• The Nexus forces (Information, Mobile, Cloud, Social) remain top priorities for CIOs

• The Nexus of Forces applies to people inside and outside the organization, in multiple roles

• Driven by the ongoing consumerisation of IT there are changes or tipping points occurring now and over the next three years that make the Nexus technologies newly strategic and applicable to a wider market
Nexus of Forces 2013

Where are we now?
Nexus of Forces 2013
Where are we now?

CIO Technology Priorities 2009-13

2009 2010 2011 2012 2013

CIO Ranking

Analytics and BI
Mobile
Cloud
Collaboration

Gartner introduces "Nexus of Forces" at Symposium 2011

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Evolution of the Nexus of Forces

BYOD → BYOx

Tech-centric → Business-centric

2011
- Isolated technical strategies
- Acceleration of mobile
- Internal cloud

2012
- Vendors and service providers build NOF strategies
- End Users put NOF into five-year plans
- Mobile reference architecture
- Advanced analytics splits from traditional BI approaches
- Mobile+cloud+info solutions gain traction

2013
- Mobile for Information
- Mobile reference architecture

2014
- Mobile for Transaction
- More data in the cloud

IT+OT Convergence → +Consumer Tech. → +Internet of Things

Physical+Virtual Convergence

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How does it affect you?

- Mobile apps set expectations for usability, appearance and behavior:
  - Touch first
  - "Simple" connected apps
  - Search and voice interfaces
- The experience flows to where you are and what you are doing in context:
  - Personal and device telemetry
  - Coordinated multiple devices
  - Cloud enables "portable" UX
- Development impact:
  - Multiplatform is inevitable
  - HTML5 helps, but is no panacea
  - New UI design skills needed
  - Native vs. mobile Web vs. hybrid
Information: From Descriptive to Prescriptive
Sourcing Information Broadly

Correlations and patterns from disparate, linked data sources yield the greatest insights and transformative opportunities.
Personal Cloud: Moving Beyond Personal Computing

Your Digital Life

Community

Content

Professional

Services

Comms.

Personal

Devices

Family

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Cloud: Hybrid, Managed, and Brokered

Cloud Strategy Elements

- Strategic Models for Cloud Service Consumption
- Adopt Cloud Techniques and/or Build Private Cloud Environments
- Secure, Manage and Govern Hybrid Cloud and Hybrid IT
- Adopt New Application Design and Architecture for Cloud
- Make Externally Facing Services Cloud Services

Mainstream Focus

- 2012-2014: Private Cloud Elements
  - Access Management
  - Service Management
  - Service Optimization
  - Resource Management
  - Resources

- 2010+: IT as a Service Broker
  - Cloud Services Broker
  - Private Svcs.
  - Public & Comm. Svcs.
  - Legacy Svcs.
  - Public & Comm. Svcs.

Cloud Decision Framework

- Benefit
  - Consider
  - Embrace Public
  - Avoid
  - Experiment

- Challenges
  - High and Clear
  - Low and Clear
  - High or Unmanageable
  - Low or Unmanageable

IT as a Service Broker

Who Will Be Responsible for Delivery of Cloud Services?

- CIO
- Designated IT Manager
- Cloud Services Provider
- Sponsor or Business Unit
- Telecommunications Provider
- Others

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What can we expect in the next few years?
Evolving Trends: 2013-2014

Top 10 Strategic Technology Trends for 2013:

- Personal Cloud
- Hybrid IT and Cloud Computing
- Internet of Things
- Enterprise App Stores
- Mobile Applications and HTML5
- Mobile Devices Battles
- Actionable Analytics
- Strategic Big Data
- Mainstream In-memory Computing
- Integrated Ecosystems

Top 10 Strategic Technology Trends for 2014:

- The Era of Personal Cloud
- Hybrid Cloud & IT as Service Broker
- The Internet of Everything
- Cloud/Client App Architecture
- Mobile Apps & Ecosystems
- Enterprise Mobile Platforms
- Smart Machines
- Software Defined Everything
- Web-Scale IT
- 3-D Printing
Mobile Platform Trends 2015
There's Space for Three Players

Greater China
Emerging APAC
Mature APAC
North America
Western Europe

Handsets

Feature phone
Other OS
BlackBerry
Windows
iOS
Android

Gartner, Forecast for Device Shipments by Operating System, Worldwide, 2Q13

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Mobile Apps and Ecosystems

• Richer UI models
  • Voice, Video & more
• Wearable Electronics expands the client world
• Microsoft, Google and Apple will battle for leadership
  • Connected apps
• Development challenges
  - New design skills
  - Responsive Design
  - Native apps vs. HTML5
Client/Cloud Architecture

• The cloud is the control point and system of record
• Applications span multiple client devices
  - Thin & thick, connected & disconnected
• The Application is in the cloud … Apps expose capabilities on the client.
• The experience flows to where you are and what you are doing in context
• Applications will use multiple client endpoints simultaneously
The Personal Cloud Will Become *More* Personal

- **Sync Me**: Store copies of my digital assets and keep it in sync across all end points and contexts.
- **See Me**: Know where I am (and have been) on the internet and in the real world. Understand my mood and context to better align services.
- **Know Me**: Understand what I want and need and proactively present it to me.
- **Be Me**: Act on my behalf based on learned or explicit rules.

*Prepare for the wave of Cognizant Computing*

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Software Defined Everything
The Journey to Programmable Infrastructure

Characteristics:
- Function defined through software not hardware
- A policy based approach

Benefits:
- Standardization
- Faster (re)configuration
- Higher agility
- Higher utilization
It’s ALL about the interface – API’s Rule!

• Every infrastructure and services vendor has own APIs; not guaranteed to be consistent across product lines or backward compatible
• Vendor functionality varies, ie normalization is difficult
• Few standards and for limited degree of functionality, ie SMIS, OpenStack, OpenFlow
• Current vendor initiatives are about control, ie OpenStack is partly about traditional IT vendors wrestling control from Amazon APIs. VMware and EMC Software Defined is about defining first so that others follow
• Some CMPs (like ServiceMesh) have an API abstraction layer to try and normalize one vendor’s APIs to another
• Some advanced private cloud customers have built teams of 100s of engineers to write to vendor APIs in a standardized reusable way.
• CMPs write to APIs on a customer demand basis
Web-scale IT –
Thinking Like A Cloud Service Provider

Web-scale IT is a pattern of global-class computing that delivers the capabilities of large cloud services providers within an enterprise IT setting by rethinking positions across several dimensions.

“DevOps”

<table>
<thead>
<tr>
<th>Industrial Data Centers</th>
<th>Web-Oriented Architectures</th>
<th>Programmable Management</th>
<th>Agile Processes</th>
<th>Collaborative Organization</th>
<th>Learning Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale out</td>
<td>API-driven</td>
<td>Do It Yourself</td>
<td>Velocity-oriented</td>
<td>Everyone a peer</td>
<td>Innovative</td>
</tr>
<tr>
<td>Custom design</td>
<td>Stateless</td>
<td>Integrate-able</td>
<td>Test-driven</td>
<td>Accepts failure</td>
<td></td>
</tr>
<tr>
<td>Commodity h/w</td>
<td>Asynchronous</td>
<td>Extendable</td>
<td>Continuous</td>
<td>Service-aligned</td>
<td>Adaptable</td>
</tr>
<tr>
<td>No virtualization</td>
<td>Cache-oriented</td>
<td>Versioned</td>
<td>Lean</td>
<td>Cross functional</td>
<td>Self-directed</td>
</tr>
<tr>
<td>Energy efficient</td>
<td>In-memory comp.</td>
<td>Automated</td>
<td>Repeatable</td>
<td>Shared metrics</td>
<td>Results-focused</td>
</tr>
<tr>
<td>Open architecture</td>
<td>Eventually consist</td>
<td>Life cycle-oriented</td>
<td>Measurable</td>
<td>No blame games</td>
<td></td>
</tr>
</tbody>
</table>
In the next five years, enterprises will spend $921 billion on public cloud services (2013-2017)

Source: Gartner, Public Cloud Services Forecast, September 2013 (G00248730)
Public Cloud Services as a Percentage of Overall IT Spending

Public Cloud Services grows from 3% to 6% of overall IT Spending

Billions of Dollars

CAGR 3%

Overall IT Spending
Public Cloud Services

Billions of Dollars

CAGR 17%

Public Cloud Services

Source: Gartner, IT Spending Forecast, 3Q13 Update, Public Cloud Services Forecast 3Q13 Update, September 2013
Public Cloud Services Subsegments
5-year CAGRs, 2012-2017

- Database Management Systems: 39.8%
- Office Suites: 39.4%
- IT Operations Management: 39.1%
- Compute: 38.3%
- Digital Content Creation: 36.1%
- Storage: 33.2%
- Business Intelligence Platform: 29.7%
- Print: 28.6%
- Project and Portfolio Management: 27.6%
- Storage Management: 25.5%
- Business Intelligence Applications: 25.2%
- Application Infrastructure and Middleware: 24.4%
- Customer Relationship Management: 22.6%
- Supply Chain Management: 21.1%
- Security: 19.7%
- Application Development: 19.4%
- Other Application Software: 17.2%
- Enterprise Content Management: 16.0%
- Enterprise Resource Planning: 15.5%
- Cloud Advertising: 14.9%
- Cloud Payments: 13.4%
- Industry Operations: 13.3%
- E-Commerce Enablement: 12.4%
- Customer Management: 12.0%
- Finance & Accounting: 11.1%
- Supply Management: 10.3%
- Web Conferencing, Teaming Platforms, and Social Software Suites: 10.1%
- Human Resources: 7.6%

Source: Gartner, Public Cloud Services Forecast, September 2013 (G00248730)
Public Cloud Services, By Region
Total Spending (2012 and 2017) and 5-year CAGR

Source: Gartner, Public Cloud Services Forecast, September 2013 (G00248730)
Public Cloud Services, By Region
5-Year CAGR (2012-2017)

- Emerging Asia/Pacific: 32.8%
- Greater China: 28.2%
- Eurasia: 25.3%
- Latin America: 24.8%
- Eastern Europe: 23.6%
- Sub-Saharan Africa: 21.8%
- Middle East and North Africa: 21.0%
- North America: 17.6%
- Mature Asia/Pacific: 13.1%
- Western Europe: 12.5%
- Worldwide: 16.9%

Source: Gartner, Public Cloud Services Forecast, September 2013 (G00248730)
Performance Gap in Ability to Deliver Solutions Now

Q05. Using a 7-point scale, how does your organization perceive the potential value for its customers.
Q06. Using a 7-point scale, How would you rate your organization’s ability to deliver solutions NOW that feature these combination(s)?
The Bottom Line

• The Nexus of forces continues to drive change and create new opportunities

• *Mobile*-centric trends and technologies increasingly define the client environment and the core end-user app and experience.

• *Cloud* is becoming a mainstream computing style and delivery option with hybrid cloud, cloud brokerage and new delivery, management and security options accelerating adoption.

• *Cloud and Mobile* combine to drive new application architectures and a new user experience called “personal cloud”

• *Cloud, Mobile and Information* trends support the emergence of the “internet of everything” and set the stage for smart machines

• *The Nexus* forces create demand for advanced programmable infrastructure that can execute at web-scale
In Summary, the Nexus of Forces

- Introduces new business opportunities
- Is moving faster than IT's (and providers') ability to respond
- Is a platform for engagement with external and internal parties
- Increasingly incorporates the Internet of Things
- Requires a reset of security and risk management approaches
What Should You Do Tomorrow!

Do:
- ✔ Focus on business outcomes.
- ✔ Explore innovations from other industries.
- ✔ Look for disruptive opportunities at the intersection of the Nexus of Forces.

Don't Do:
- ✗ Focus on technologies first.
- ✗ Focus on technology strategies in isolation.
- ✗ Expect old approaches to IT delivery to support Nexus scenarios.

Redo:
- ↨ Your individual development plan: What do you need to do to be indispensable in a Nexus world?
- ↨ Your internal PR plan: What can a reset IT department offer to the business?

Undo:
- ⇣ What the rest of your organization thinks of IT.
- ⇣ Prescriptive IT.
- ⇣ Techno-speak.
Recommended Gartner Research

- **Examining the Depth of the Nexus of Forces**  
  Daryl C. Plummer, Valentin T. Sribar and others (G00239390)

- **Create I&O's Future by Embracing the Nexus of Forces**  
  Donna Scott (G00255028)

- **Market Trends: New Imperatives for Application Modernization to Support Business-Led Value**  
  Allie Young, Patrick J. Sullivan (G00251422)

- **Tech Go-to-Market: The Future of IT Sales and Factors Driving This Evolution**  
  Tiffani Bova (G00251860)

- **The Nexus of Forces and IT's Sense of Control**  
  Jack Santos (G00247194)
Recommended Gartner Research


- Forecast Overview: Public Cloud Services, Worldwide, 2013 Update Ed Anderson (G00248602) publishes in Oct 2013

- Forecast Analysis: Public Cloud Services, Worldwide, 3Q13 Update Ed Anderson (G00256400) publishes in Oct 2013

- Market Definitions and Methodology: Public Cloud Services Ed Anderson (G00234813)

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