Cloud, Enterprise 2.0: Joining the Dots

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Introduction

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- ZDNet’s Enterprise Web 2.0
  - http://blogs.zdnet.com/Hinchcliffe
- Social Computing Journal – Editor-in-Chief
  - http://socialcomputingjournal.com
- ebizQ’s Next-Generation Enterprises
  - http://www.ebizq.net/blogs/enterprise
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The Converging Models of Open Computing

• **Cloud Computing**
  Open, network-based computing infrastructure and business models

• **Enterprise 2.0**
  Open, network-based collaborative models and data

• **Service-Oriented Architecture**
  Open, network-based shared services
Where business and IT change is happening today...

Product Development 2.0

Marketing

Sales

Customer Service

Line of Business

Operations | IT | Back Office

Enterprise 2.0 & Open Business Models

crowdsourcing

cloud computing, SOA, open APIs SaaS

online community

2.0 development platforms (Rails, Scala, etc.)

(social media in the enterprise)
Let’s start with Service-Oriented Architecture (SOA)

- The motivations for connecting systems together
- How we did it in the enterprise
- How we did it on the Web
- How it’s coming together
A Short History of Software
Connecting data (and people)

• SOA is a modular software architecture, and the modules are services designed to interact with each other.
  – Important Note: SOA also contains higher order constructs such as composite applications, orchestration, coordination, and more exist.
  – 80% of organizations use SOA principles to guide their enterprise efforts

• We tend to rely on open standards to encourage automatic interoperability of services designed separately.
  – A good SOA could still violate this rule however
  – See Thomas Erl and Seven Principles of SOA

– The Lesson of the 2000s: To deliver business value, SOA must intrinsically have reach. The Web has taught us how to achieve this.
There is demand, even an urgent need, for connecting systems

“48 percent of the CIOs we surveyed said that they plan to implement service-oriented architectures for integration with external trading partners this year.” – McKinsey & Co.
A Business Case for Cloud and SOA

The Cloud Service Overtakes the App

Bandwidth Consumed by Amazon Web Services vs. Bandwidth Consumed by Amazon’s Global Websites
A Strategic Goal of SOA: Turning Applications Into Platforms

• Openly exposing the features of software and data to customers, end-users, partners, and suppliers for reuse and remixing

• This strategy requires documenting, encouraging, and actively supporting the application as a platform
  − Has serious governance implications and achieving good ROI requires effective reach

• Provide legal, technical, and business reasons to enable this:
  − Fair licensing, pricing, & support models
  − A vast array of services that provide data that uses need
  − A way to apply these services to business problems rapidly and inexpensively.
How best to think about our cloud(s)?

Is it about the services and the data? Or is it about the business models?
It turns out that cloud computing, SOA, and Web 2.0 are birds of a feather.

Only some of the focus is different.
What happened to SOA?

- Low rates of adoption, failure to drive the business, and a technical approach designed before the Web evolved.
- The Web found better ways.
- For lack of a better term, we’re calling this Web-Oriented Architecture or WOA.

The High Levels of Success of Web 2.0 Models for Creating Software Ecosystems Helped “Discover” WOA and Inform SOA

- Turning Applications into Platforms
- Complex Standards: SOAP/WS-
- Interoperability and Reuse
- Driven by Enterprise Architecture
- Composite Applications

Web 2.0

- Creating Applications as Platforms
- Simple Models: REST, Syndication, Widgets, Open APIs
- Interoperability and Reuse
- Driven by Network Effects and Viral Adoption
- Mashups and Rich Internet Applications (RIA)
- Peer Production and Social Dynamics

SOA

- Web-Oriented Architecture
WOA vs. SOA

Most Web sites now use WOA and most cloud computing platforms as well.

Enterprises are catching up (most new SOA efforts use REST approach).
A View of Web-Oriented Architecture
circa 2009-2010

Distribution
Feeds, Parts, Discovery

Data as Hypertext
Web Resources & Links

Clients
Web Browsers & Apps

What we’ve learned:
The Cloud is our Global SOA
Allowing us to create our own private clouds

- Open APIs and WOA have informed the best approach to SOA
- And for much of cloud computing as well.
- But there is a new scenario that is creeping into our organizations:

  *Data explosion*
Enterprise 2.0

• The application of user generated Web technologies to create a WOA data ecosystem.

• CIO version:

Using social Web technologies to improve collaboration and data sharing.
Key Point: E-mail is not based on the architecture of the World Wide Web, but most of the Social Web is.
The Enterprise 2.0 Checklist

- SLATES
  - Search
  - Linking
  - Authorship
  - Tagging
  - Extensions
  - Signals
SLATES unboxed...

**Search** — Discoverability of information drives reuse, leverage, and ROI.

**Links** — Using URIs to forge thousands of deep interconnections between enterprise content 24/7.

**Authorship** — Ensuring every worker has easy access to Enterprise 2.0 platforms.

**Tags** — Allowing natural, organic, on-the-fly organization of data from every point of view.

**Extensions** — Extend knowledge by mining patterns and user activity.

**Signals** — Make information consumption efficient by pushing out changes.
Enterprise 2.0 Ecosystem

Enterprise 2.0 Applications
- Blogs and Wikis (Social Media)
- Crowdsourcing (External and Internal)
- Enterprise Social Network
- Industry Social Network
- Customer Community
- Other SaaS and Cloud Tools
- Enterprise Social Network

Peer Produced Intranet
- participation
- deeply linked structure (WOA)
- consumption

Traditional Enterprise Systems
- SOA
- Enterprise Mashups
- Internal Business Applications and Databases
  - ERP
  - SCM
  - HRM
  - CRM
  - Other Backoffice

Consumption
- Customer Community
- Enterprise Federated Search

Connectors
The higher order framework: Social Business
A Data-Centric View of Enterprise 2.0 *In Situ*

This is how your IT department will look at where Enterprise 2.0 fits in.
But the enterprise is not the Web

- We want to replicate the positive aspects of today’s wildly successful data architecture in the enterprise.

- But our infrastructure is usually not very Web-like, creating significant impedance and diluted results.

- Requires augmentation and adaptation to reproduce the same or similar results.
The real issue is this:

- Most of the vast repositories of data in enterprises is not accessible in any practical manner by most people.
- Enterprise 2.0 is changing that.
- Web and WOA-based cloud infrastructure will create a visible surface area of data that is orders of magnitude greater than what we see today.
One Emergent Solution: Mashups
Empowering The User To Self-Service & Create

- Cut-and-Paste deployment anywhere on the Intranet
- Consumption of the SOA in any application that can use a URL
- Discovery of data via search
- Integration moves out of the spreadsheet
- Bringing business data and SOA to the masses

**Case Study:** Government Crises Center
Mashups

• Strong preference for reuse over coding
  – Innovation in assembly is the core value instead of ingenuity in coding

• Disruptive delivery model: Web-based with no install, no plug-ins, no admin rights, etc.

• Design focus is at the glue instead of the functionality

• Emphasis on simple, easy-to-use Web technologies, SaaS services, and cloud computing capabilities instead of complex enterprise technologies
Lightweight user-driven application development (aka mashups)

- Full resources of the Web and the Intranet
- Enterprise context around management, security, privacy, etc.
- Gives everyone in the organization the ability to leverage the SOA.
- Lightweight, simple model.
- Inexpensive and extremely rapid results
Situating mashups in the workplace
The Latest Trend - App Stores

Software From the Cloud
Key Aspects of App Stores

- Way to create an easy to use trusted conduit of software (and services & data)
- Model is widely understood by both consumers and developers of software
- Provides centralized control + value add including monetization, security, safety with wide distribution and easy-on-boarding
- An increasingly expected model for software acquisition in the future for businesses
Modern Distribution Methods Are Bringing Mashups to the Masses
The Enterprise App Store

Benefits:
- Reduced backlog
- Higher adoption
- Better IT solutions
- Improved quality
- Lower costs

Distributing SOA, SaaS, & Mashups with The Enterprise App Store

From http://www.ebizq.net/blogs/enterprise by Dion Hinchcliffe
Implications for Enterprises

• Provides a much-needed distribution model cloud and internal SOA solutions

• Makes it easy for apps to be built and shared by anyone

• Can greatly increase the reach of SOA, ESB, cloud services, and open APIs

• Enables compelling internal business scenarios including chargebacks, innovation, high levels of reuse, better IT adoption, and improved agility
App Stores Unleash Developer, End-User, and Business Potential
Implications for E2.0, SOA, and Cloud

• Up until now, SOA has had highly technical or ineffective distribution models to bring solutions and access to data to the masses

• The broad adoption globally of Enterprise 2.0 is going to create an open data landscape like we’ve never seen before

• Cloud computing is going to be the definitive architecture and delivery model and for Enterprise 2.0 and SOA
How to embrace cloudy E2.0 and SOA:

• The simple rules for 21st century IT:
  • Whatever you do, **don’t** break WOA
  • **Do** put the whole data ecosystem in the hands of everyone (enable self-service)
  • **Don’t** make difficult to reverse decisions about your cloud tech (standards, products, architecture)
  • **Do** apply enterprise requirements on top of Web models for data (security, audit, archiving, etc.)
Questions?

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