

# The Environment is the Application

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#### Roadmap

- Who is BEA (Someone Has to Pay...)
- Innovation
- Where are we w.r.t. communications applications
- The SOA
- SOA in communications
- Web 2.0
- Telco-Web 2.0
- Summary







- WebLogic Server is the predominant application server in telecom service providers
- 50 of the top 50 global service providers use BEA technology
- The majority of leading network equipment providers use BEA solutions in their product suites and network deployments



#### What Do These People Have in Common?



Thomas Edison



Nikola Tesla



George Eastman



Harvey Firestone



Henry Ford



Howard Schultz



Steve Jobs



Larry Page and Sergey Brin



Linux Torvalds





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#### Is it Their Inventions?



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#### Inventors?



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#### Innovators



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Think liquid."



#### **Sustainable Innovation**



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Think liquid."

#### Cultivating Next Practices through "Value Denials" Innovation

Goods :	Service :	Experience :
Roasted & Ground	Brewed & Served	Special Treat
	PISK UP HERE MASALA TEA AND COFFEE AVAILABLE HERE \$0.75-\$1.50 per cup	STARBUCKS COFFEE \$2.00-5.00 per Cup
Merchandise: Retail or	Service : Plans	Experience :
VoIP	& Options	Special Treat
	Can't we all be friends?	

Think liquid.™



#### What Is Our State-of-the-Art?

- Old: TDM New: IP
- Old: Wireless Intelligent Network (WIN) New: IP Multimedia Subsystem (IMS)
- Old: Command-and-control, CHILL, C, C++ for application development
   New: Stimulus/Markup, Java, C++, Scripting

Success: 18 Month Development Cycle Becomes 12 Weeks









#### How Successful Are We? Not Very...

- In the lab, we can create applications in hours
  - Why does it take 18 months for a typical service provider to deploy?
- In the lab, we can create interesting, converged applications
  - Why do we not see very many converged applications from communication service providers?
- In the lab, anyone who has time to learn the development environment can create applications
  - Where are all the developers?



## Application Deployment Challenges

- Application is a network service that does something for me
- Service is something:
  - I can order
  - Network can provision
  - Provider can manage
  - Someone pays for it
- These things are hard
  - Custom development
  - Changes to business process and payment flows
  - Changes to operating applications
- Drive service providers to Service-Oriented Architecture



#### What is SOA?



#### Service-Oriented Architecture

SOA is an architectural approach that enables the creation of loosely coupled, **interoperable business services** that can be easily shared within and between enterprises to **meet business needs**.

#### And Why Is It So Valuable?

... because expressing functionality as services evolves how functionality is delivered, and in consequence the value that it brings.





#### SOA is Not Just Web Services

- Web Services very important as least-common denominator
  - Enables Service Bus
- Requires governance
  - Service repository
  - Data access policy
  - Data marshalling
  - Service marshalling





![](_page_16_Picture_0.jpeg)

#### Is SOA Enough? No.

• SOA fixes the time-to-market service provider problem

- Much faster OSS/BSS deployment
- Much faster application development (e.g., O2 find Pizza Hut)
- Does not address fundamental communication service provider problem
  - Culture of network engineering

• Where will the new applications come from?

![](_page_16_Picture_8.jpeg)

Providing new services to increase ARPU

Serving new customer segments and markets

Leverage Existing Applications Into Next Generation Networks

#### Enabling faster deployment of new services

![](_page_21_Figure_0.jpeg)

Providing new multimedia services that blend features

# Reducing cost to deploy new services

![](_page_24_Picture_0.jpeg)

![](_page_25_Picture_0.jpeg)

Web 2.0

![](_page_25_Picture_2.jpeg)

![](_page_26_Picture_0.jpeg)

#### Web 2.0 "Classic"

- Opportunity to share user generated content (UGC)
  - MySpace
  - Flikr
  - LinkedIn
  - FaceBook
  - Yelp
  - Amazon (ratings)
  - Google (ranking)
- Wait! Original Web:
  - Document sharing!

![](_page_26_Picture_12.jpeg)

#### What is Different? Is it Different?

- Certainly rich media
- Certainly easier to use
  - Type a blog, contribute to a wiki
  - Much easier than hacking HTML
- Is it fundamentally different?
  - Conceptually identical
  - Higher level of the stack
  - Lots of work bringing Web 2.0 to, for example, mobile devices

![](_page_27_Picture_9.jpeg)

![](_page_28_Picture_0.jpeg)

#### Key Web 2.0 Differentiator

- User generated content + user generated applications
  - ▶ igoogle
  - FaceBook
  - Web Widgets
- Users participating in creating applications, not just content
  - User Widgets
  - User Mashups
  - User / provider aggregation

![](_page_28_Picture_10.jpeg)

### Who will create the new applications?

- Will it be the service providers?
- Will it be the network equipment manufacturers?
- Will it be the independent equipment manufacturers?
- Will it be the trusted independent software vendors?

![](_page_29_Picture_5.jpeg)

![](_page_30_Picture_0.jpeg)

#### Web UI Trend

- Breaking down the Web into small, portable pieces is the smart trend that everyone from Nokia to Google is betting on.
  - Om Malik, Business 2.0 Magazine, October 2006

To-Do List		Gmail	
New Item: high Define web2.0	Add	Inbox (12) Hide preview Compose Mail DAVID - Ewd: EWC leremy Clarkson quotes - Before acting on this email or one	12:30am
Leadership Quote of the Day		PIXmania. com - GPS Special: get great guidance! - In order to receive our em Jet2. com Cities - Sun in the city fm £14.99 with Jet2.com! - Jet2.com The low	Jul 31 Jul 31
"Every organization must be prepared to abandon everything it		Figure - what you see is what you pay - if you have trouble viewing this erhan, on Frank - WWW-tickets2 - Hi Folks. Just quickie pre-golf4warding note re ticket	Jul 31
does to survive in the future." ~ Peter Drucker		Google Finance Portfolios Market summary - hide Dow 13 242 39 +30 40	(D 23%)
		Nasdaq         2,538.30         -7.97 (           S&P 500         1,452.86         -2.41 (	(0.23%) (0.31%) (-0.17%)
Search Craigslist		My Portfolio - hide	Vikt Cap
San francisco for sale ♥ ▶		SUNW         5.11         +0.01 (0.18%)           BEAS         12.64         +0.26 (2.10%)           Enter symbol         Add	18.24B 4.95B

- 2008 will mark the start of a new paradigm in the way people access the Internet on the move = mobile widgets.
  - David Pollington, Vodafone Group R&D, May 2007

![](_page_30_Picture_7.jpeg)

#### **End Consumers Gain Control**

- In Web 2.0 users gain control
  - Many services present UI that can be incorporated into the user's workflow by the user themselves
- Mobile screens get bigger and smaller
  - Service providers must reach the end user on the device in a customizable way to enable mash-up, independent of enterprise or Telco
  - The presentation of a given application UI becomes a matter of the device's capabilities – the services don't necessarily change, but the user's interaction and composition will
- Web 2.0 is the true convergence of information and communication systems
  - Usage of Web 2.0 applications breaks out of the "single device" paradigm – your phone, PC, TV, stereo can all participate in an application session, with each manifesting the parts of the User Interface that are relevant

![](_page_31_Picture_8.jpeg)

#### The "Real" Web is Going Mobile

- Access to the 'real Web' on the client device
  - Devices that offer capabilities which mirror those of traditional PCs are proliferating, with form factors that mimic those of last-generation appliances, from mobile phones to set-top boxes
- The notion of "Software-as-a-Service" has already been popularized and is likely to be expanded to "Operating-System-as-a-Service", where the actual OS is merely the host for the Web UI container
- Availability of consumer interfaces with the capabilities that correspond to user needs accelerates product consumption
  - The right widget at the right time to enrich my current task

![](_page_32_Picture_6.jpeg)

![](_page_32_Picture_7.jpeg)

![](_page_33_Picture_0.jpeg)

#### Telco-Web 2.0

![](_page_33_Picture_2.jpeg)

### Meaning for Next Generation Applications

- Is, "Can we create applications faster?" the right question?
- What is a "killer application"?
- Years of "The environment enables us to easily create applications"
  - Value proposition: Can continuously try out new applications
  - Expand solution space to converge on killer application
  - IMS value proposition: reduce cost of being wrong and right
  - Inexpensive to create applications to address the "long tail"

![](_page_34_Picture_8.jpeg)

![](_page_35_Picture_0.jpeg)

- Communication Service Provider culture
- ISV culture
- Users
  - Many may look like companies in the end
  - Many will be companies
  - Many will be enterprises
- Interesting application is no longer the interesting application
  - It is ability for user to create their own application, to use or share

![](_page_35_Picture_9.jpeg)

![](_page_36_Picture_0.jpeg)

# What does this mean for you?

![](_page_36_Picture_2.jpeg)

#### Research Areas for Mobile Applications, Services, and Technologies

- Identity management, third-party trust, trust assignment
- Adaptations for mobile environment
  - Limited bandwidth, limited power, intermittent connectivity
- Improvements to mobile environment
  - Coding, power management, display technology, input technology
- Frameworks for UGC / UGA more important than UGC applications

![](_page_37_Picture_7.jpeg)

![](_page_38_Picture_0.jpeg)

#### Thank You

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