The second O'Reilly conference on peer-to-peer and web services

For developers, technical managers, entrepreneurs, investors, and legislators

- BUSINESS MODELS
- LEGISLATIVE / DIGITAL RIGHTS MANAGEMENT
- COLLABORATION
- WEB SERVICES
- OVERVIEW / INFRASTRUCTURE
- DISTRIBUTED COMPUTATION
- SECURITY
- WIRELESS
- FILE SHARING
- METADATA / SEARCH
- MESSAGING

Help shape the standards, legislation, and practices that will transform global computer interaction!

REGISTER TODAY:
conferences.oreilly.com/p2p
“Is P2P dead?” Not a chance. After the stunning success of the first O’Reilly Peer-to-Peer Conference in February 2001, the hype got so intense that any company that could squeeze under the P2P umbrella did so, leading to the inevitable backlash, with many P2P companies, venture capitalists, and the press asking this question.

The right question is not whether P2P is dead, or which label we’re going to use, but what’s next. Now decentralized applications and services signal the rise of a next-generation Internet operating system, and the stakes are high. Failing to understand the tectonic shifts we’re about to face can doom companies and markets. The corresponding opportunities are huge for those who understand the deep technological forces that are transforming the computer, information, and entertainment industries.

In planning the second O’Reilly Peer-to-Peer & Web Services Conference, we asked “Who is creating the software and services that will change the face of the Internet as we know it? What are the key lessons we can learn from the pioneers, and how can we take their work to the next level?” Please join me to explore these questions in Washington, D.C., September 18–21.

The first conference was an incredible gathering, and we expect the second to be even more exciting. The conference theme is “Inventing the Post-Web World.” Our speakers and exhibitors are literally inventing a new Internet, where peer-to-peer and web services collide and collaborate. We have twelve tutorials and over ninety sessions covering the deployment and customization of Groove, Jabber, JXTA, SOAP, HailStorm, Freenet, and Gnutella. You’ll be able to go deep into new technologies, and hear the latest ideas about business models, legislation, morality, security and digital rights management, right from the innovators who are making it all happen.

See you there,

Tim O’Reilly
Founder & President
O’Reilly & Associates, Inc.

Keynote Speakers

CLAY SHIRKY
Wednesday, 8:45AM–10:15AM • Regency Ballroom


THE GREAT RE-WIRING

Clay Shirky will discuss the Great Re-wiring—a chance to reconsider how the world’s devices connect to the Internet and to one another outside the browser/server framework.

LAWRENCE LESSIG
Thursday, 8:45AM–10:15AM • Regency Ballroom

Larry Lessig is a professor of law at Stanford Law School. He was the Berkman Professor of Law at Harvard Law School. His book, Code and Other Laws of Cyberspace, has been hailed as some of the most original thinking about law in the digital age.

PRESEVING THE INNOVATION COMMONS: WHAT’S REALLY AT STAKE

Larry Lessig will describe the changes in law and technology that threaten the innovation commons created by the Internet.

DAVID STUTZ
Friday, 8:45AM–10:15AM • Regency Ballroom

David Stutz is a software architect at Microsoft Corporation, focusing on peer-to-peer and distributed computing. During his career at Microsoft and Microsoft Research, he has designed programming languages, object technologies, systems, developer tools, and does lots of plumbing.

P2P – THE POSTMORTEM

David Stutz will describe when to use peer-to-peer techniques in applications and how web services improve peer-to-peer application interactions without corrupting their fundamental peerity. He’ll also describe the high-level .NET architecture with a focus on Microsoft’s framework support for creating peer-to-peer applications and web services.
Program Overview

The O’Reilly Peer-to-Peer and Web Services Conference explores the business, technical, and societal issues raised by the most revolutionary Internet technologies since the appearance of the Web. Gnutella, Groove, Jabber, .Net, Freenet, SOAP/XML-RPC, JXTA—you name it, they’ll all be there, under one roof, providing a unique opportunity to meet, mingle with, and learn from the innovators inventing the next generation of the Internet.

Discover the influence of new frameworks and applications:

COLLABORATION

A collaborative, interactive Web was part of Tim Berners-Lee’s original vision. But in the move to client-server architecture, collaboration and community went pretty much out the window. Peer-to-peer offers the potential to return the Web to its roots in collaboration and community, through collaborative journalism and Weblogs, Amazon-style customer reviews, and self-organizing portals. How does P2P and decentralization further this goal? P2P and web services offer the potential to know exactly who is online at a given time, thus enabling much stronger schemes for identity, authorization, collaboration, and community. The impacts are both utopian and Orwellian. Which vision will win out? And what are the paths to profitability for collaborative systems?

FILE SHARING

Napster took a simple idea—letting users keep their files on their own machines—added a naming scheme so that users would have unique identities regardless of their IP number, and the result was a system so powerful that only the full weight of the U.S. copyright system could crush it. Which it did. But could the legal outcome of RIAA v. Napster actually be a good thing, the impetus to move P2P file sharing from piracy to legitimate business models that reward artists as well as consumers?

DISTRIBUTED COMPUTATION

SETI@Home proved that unused cycles can be put to good use over the Net. But distributed computing startups are having trouble keeping the lights on as they try to turn this interesting concept into a paying business. What kinds of problems lend themselves to resource sharing? And where is the money?

INSTANT MESSAGING

Instant messaging is not only a hugely popular P2P application, it also suggests important new paths for peer-to-peer communication. Text-based chat is just the tip of the iceberg. IM’s big breakthrough is in presence and identity management. IM systems know when you’re online and when you’re not, and thus when your system’s resources can be exploited, when you can receive downloads (perhaps of that movie you’ve been dying to see, but perhaps of spyware you didn’t even know existed). In short, IM ties together distributed computing, file sharing, and other crucial P2P memes.

SEARCH AND METADATA

Many of the key opportunities in decentralized computing arise from understanding the role of metadata and directory-style services for connecting users. A core competency of most peer-to-peer systems is managing the metadata associated with files, resources, or services. How will frameworks like SOAP, UDDI, and RDF address the issue of Internet-aware programs using the services that are offered by other programs? What is XML’s role in managing and routing data and services?

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“O’REILLY HAS BEEN THERE FIRST MORE TIMES THAN ANYONE ELSE.”
—Ed Kozel, former CTO, Cisco
P2P AND THE LEGISLATIVE SCENE
Napster has piqued the interest of several prominent members of Congress, including Senator and songwriter Orin Hatch. This panel brings together several D.C. insiders, each of whom has extensive experience with the making of copyright laws, to tell us what the prospects are for Congressional action on P2P.

P (THROUGH ISP) TO P: THE INTERNET’S OTHER INTERMEDIARIES
Internet service providers will face increased pressure to control the information that passes through their pipes to the Net, if peer-to-peer computing disperses the usual suspects. Legal or market threats to ISPs, and from them to users, could reimpose the centralization P2P was supposed to eliminate. How can users work with these unnoticed intermediaries to preserve unmediated Internet communications?

PEER-TO-PEER IS DEAD, LONG LIVE...WHAT?
The phrase peer-to-peer, originally coined to describe Napster and related architectures, has been stretched to, and perhaps past, the breaking point, to include distributed computing, instant messaging, and server-less groupware, as well as fuzzier ideas like peer-to-peer journalism, and even extensions of the existing client/server architecture in the form of the writeable web, web services, and dynamic DNS. Is this tent too big? Is all of this distribution and decentralization part of something larger where file sharing and real-time XML message passing and commodity supercomputers come together in a giant grid, or is peer-to-peer just a buzzword too far, a cousin of phrases like “interactivity” and “multimedia,” mere placeholders that only last for as long as it takes us to really understand what’s going on?

COLLABORATIVE JOURNALISM
Journalism has already been transformed by the Internet, with individual web publishers sometimes scooping Big Media, sometimes getting the story wrong. Does real-time collaboration change journalism even more? How do weblogs, collaborative authoring, and instant messaging further the graying of the lines between reporters and readers?

P2P MEETS WEB SERVICES
This panel discussion explores the nexus between peer-to-peer and web services. Are web services too web-centric to be considered true P2P? How is this related to today’s P2P applications employing their own little web servers? What problems do XML-based web services and decentralized P2P frameworks solve for one-another? Are SOAP and XML-RPC strong enough to provide some of the glue? This panel discussion focuses on finding the commonalties (and differences) in what seems to be a confluence of two ever-similar worldviews.

MORALITY
If we can find ways for content creators to make a living regardless of unauthorized distribution, is it okay? Or is it piracy no matter what the outcome? In hopes of moving conversation about file sharing beyond the standard rants, we’ll attempt a thoughtful dissection of a messy issue.

OPEN SERVICES
This panel discusses the challenges facing this growing phenomenon: privacy and security concerns on networks, legal concerns regarding what you do on your connection, technical concerns on interoperability, and more. Open services are gaining momentum on the Internet, and will surely be as integral to the Net as open source.

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Larry Lessig during a panel discussion at the first O’Reilly P2P Conference in San Francisco
An Introduction to Collaborative Computing
Rael Dornfest, Cory Doctorow, Wes Felter, Lucas Gonze, John Scott, Fred von Lohmann
Tuesday, 8:45AM—12:15PM • Regency Ballroom

Explore the collaborative computing landscape with members of the conference committee. This introductory tour, informed by the conference program, provides an overview of what you will see at the conference, clearly explaining the various concepts, applications, and issues. The session consists of:

► Collaborative computing, peer-to-peer, and web services
► An application tour
► Digging deeper into the plumbing
► The legislative scene
► Business methods
► Sociological impact

Groove Tool Development, Part I
Tuesday, 8:45AM—12:15PM • Ambassador

Groove Networks’ peer-computing platform, Groove, is designed so that third-party developers and system integrators can build customized peer-computing tools and applications. This one-day version of the Groove Tools Development course provides a technical introduction to the Groove platform architecture. It offers hands-on training for building and deploying Groove tools using standard Groove components. At the end of the two tutorials, participants will be able to:

► Describe the Groove architecture at a detailed level
► Define interactions between Groove tools and subsystems
► Describe the components of a tool template
► Modify an existing tool using the Tool Creator tool
► Develop a new tool from existing components
► Distribute new tools from a web server
► Describe how Groove can be used to extend centralized systems

This course is designed for a technical audience that includes tool developers, system integrators, and solution developers who are fluent in using the Groove Transceiver to communicate with other people. You should also have intermediate-level familiarity with Internet technologies and concepts including core technologies such as XML, HTML, JavaScript™ or VBScript. Ideally, you would have a general understanding of COM, perhaps as a result of Visual Basic or C++ programming experience.

Create and Consume Web Services Using Scripting Languages
Dr. Kam Lee
Tuesday, 8:45AM—12:15PM • Empire

This tutorial is aimed at programmers and managers who want to learn more about the power of using scripting languages to create and consume web services. Web services are platform-independent software components programmatically accessible across the Web using Internet protocols. Scripting languages, such as Perl and Python with their extensive support of dynamic typing/binding and core facilities for Internet protocols and XML, not only provide a strong foundation for the rapid creation of web service components, but also provide the glue for the seamless integration of web services components in real applications. We will:

► Consider a model of the service-oriented architecture
► Review the underlying open protocols (SOAP, WSDL, and UDDI)
► Examine the support of these protocols in scripting languages
► Discuss the use of Perl/Python to build, deploy, and manage server-side web services components
► Cover the use of Perl/Python to compose, debug, and test client-side web services-based applications
► Introduce some of the scripting language-based tools designed to simplify the life of web service programmers and application developers

SOAP: The Power of Simplicity
Paul Kulchenko
Tuesday, 8:45AM—12:15PM • Hampton

This session covers the SOAP protocol, UDDI, and the different transports for SOAP protocols. You’ll learn how to build SOAP client and server implementations in a portable, platform independent fashion in minutes.

Techniques include:

► XML serialization, rules and limitations
► SOAP clients: RPC and OO implementations
► Web services on the Internet
► SOAP servers, different implementations: CGI, mod_perl, mod_soap, Apache::Registry, daemon, POP3, Installation and configuration
► Security: SSL, authentication, cookies, access control
► Toolkits and SOAP interoperability
► SOAP transports: HTTP/HTTPS, SMTP, POP3, TCP, Jabber, MQSeries
► SOAP and XML-RPC: the best sides of both worlds
► UDDI::Lite: inquiry and publishing API for UDDI repositories

Running Your Own Jabber Server
Tuesday, 8:45AM—12:15PM • Palladian

This tutorial provides an in-depth look at setting up, tuning, and plugging modules into a Jabber server. The attendee will learn about the limitless development possibilities of Jabber.

Reputation Management How-To
Lucas Gonze
Tuesday, 1:30pm—5:00pm • Regency Ballroom

Explore the basic issues of reputation management in the real world, drawing from the example of the WorldOS reputation toolkit. Emphasis is on minimalist technology and practical solutions. This tutorial covers:

► Reputation expressions: what kind of attributes do they need to have?
  Includes an overview of the math and proposes a template formula
► Identification of nodes: anonymous but persistent pseudonyms;
  sign-in mechanisms; bootstrapping unknown and/or new users;
  non-cryptographic methods like behavioral signatures
► Gaming the system: what tricks do you have to know about?
► Transitive reputation: how do you handle third-party reputation data?
  This includes compound reputation expressions, where you combine the reputation of a rater with the reputation data they provided

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Creating P2P Applications with JXTA
Juan Carlos Soto
Tuesday, 1:30 PM–5:00 PM • Empire

This hands-on tutorial describes the design of the JXTA Shell and demonstrates how to extend it. The JXTA Shell implementation allows new commands to be easily added. Shell commands can be combined across peers to create new P2P services and applications “on the fly,” which are available to other peers.

Custom OpenCola Folder in an Afternoon!
Andy Flinn, John Henson
Tuesday, 1:30 PM–5:00 PM • Hampton

OpenCola Folders SDK is a tool for building custom P2P collaborative filters in a hurry. In this tutorial, OpenCola’s chief hackist, Andy Flinn, and chief scientist, John Henson, build a custom OC Folders implementation whose purpose is to collaboratively filter O’Reilly Safari. Safari Folders are trained by identifying one or more helpful documents from Safari. Thereafter, your Safari Folder constantly seeks to identify other Safari users who value similar documents, and brings to your attention new documents and articles from O’Reilly’s online documentation projects and Safari itself.

New documents are chosen by examining the document consumption of your peers on the network. Your behavior on receipt of those documents (you pay attention to them, you throw them away) is used to refine your peer group. Your peers’ computers and your own computers team up to spider O’Reilly’s sites and others that are identified by any qualified peer.

This tool can be generalized to collaboratively filter any domain of knowledge or information resource, from online auctions to MP3 collections to OS patches.

Programming Freenet
Brandon Wiley, Steven A. Hazel, Eric Ries
Tuesday, 1:30 PM–5:00 PM • Palladian

Freenet is a large-scale peer-to-peer network that pools the power of member computers around the world to create a massive virtual information store open to anyone to freely, privately, and securely publish and retrieve content. Freenet has also received much attention of late as a development platform. Freenet developers Wiley and Hazel, and FreeS9QL’s Ries guide you through:

- The fundamentals of the Freenet infrastructure
- The basics of writing a functional Freenet node
- Freenet’s XML-RPC interface for hooking into web services
- The ins and outs of writing applications over Freenet

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A New Way of Understanding P2P
Cory Doctorow
Wednesday, 10:45 AM–11:30 AM
Regency Ballroom

Financial analysts and technical people both miss the boat on what's important in P2P. The way to group and understand P2P offerings is to examine what makes them "cool." Doctorow examines themes such as doing an end-run around sysadmins; foiling censorship; letting anyone talk to anyone; letting industrial processes proceed on human-generated routes; trust through topology; and more.

Panel: Dark Matter, Sheep, and the Cluster: Resolving Metaphor Collision in P2P
Moderator: Cory Doctorow
Wednesday, 11:30 AM–12:15 PM
Regency Ballroom

See page 4 for panel description.

Network-Centric Warfare
Michael R. Macedonia, Ph.D.
Wednesday, 2:15 PM–3:00 PM
Regency Ballroom

The U.S. military is rapidly attempting to adapt P2P under the concept of network-centric warfare, where the computer is a part of everything and everything is part of the Net. "Everything" includes individual soldiers and their vehicles and aircraft. Macedonia examines the role of P2P in the operation of US forces in conflict, and in the speed of decision making in foreign policy. He explores new military possibilities we are only beginning to understand.

Is File Sharing Stealing?
Lucas Gonze
Wednesday, 3:30 PM–4:15 PM • Regency Ballroom

Since law is often formed as a way of approximating ideals, Gonze discusses what the relevant ideals are. The attempts to impose material scarcity on the digital world compare to the unabomber’s attempt to recreate an agrarian society. Gonze explores whether Richard Stallman said anything interesting about bits—"don’t fight it"—fits in.

Panel: Morality
Lucas Gonze, Moderator
Wednesday, 4:15 PM–5:00 PM
Regency Ballroom

WEB SERVICES

See page 4 for panel description.

OVERVIEW / INFRASTRUCTURE TRACK

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Peering into the Enterprise
Ray Ozzie
Wednesday, 10:45AM–11:30AM • Ambassador
Ray Ozzie, CEO of Groove Networks, will discuss the ways in which peer computing applications can bring value to corporations, using real-life examples of his company’s software integrated into enterprises. Ozzie will explore peer-based solutions that enhance business processes, while seamlessly integrating with existing back-end systems such as customer relationship management, document management, product design, or enterprise resource planning.

Building a Successful P2P Business Model
Geoff Cohen
Wednesday, 11:30AM–12:15PM • Ambassador
Geoff Cohen explores the key elements of a compelling P2P business model. A good P2P business model must pursue three strategies: it must leverage the network effects of increasing numbers, it must allow for innovation, and it must build on (not fight) other important trends such as Moore’s Law, the need for privacy and security, and interoperability.

The Future of Business Method Patents
Scott M. Alter, Esq.
Wednesday, 2:15PM–3:00PM • Ambassador
See page 4 for panel description.

Distributed Computing Track

Distributed Computing for a Large Pharmaceutical Company
William S. Hayes, Ph.D.
Wednesday, 10:45AM–11:30AM • Empire
Dr. Hayes explores GlaxoSmithKline’s process of determining how to take advantage of unused PC cpu cycles on the intranet. The talk covers the many aspects considered for product selection, and presents a checklist for deployment of a PC desktop distributed computing solution. Hayes further considers the possibilities for use of the Internet in extending computational opportunity.

A Distributed Sound Processing Architecture
Steven A. Hazel
Wednesday, 11:30AM–12:15PM • Empire
This talk describes a distributed sound processing architecture for both collaborative control of sound devices and the application of computationally intensive audio effects. The timing, bandwidth, and computational demands of sound processing make it an interesting case study for distributed systems design.

Adaptive Distributed Computing
Ray Ozzie
Wednesday, 2:15PM–3:00PM • Empire
Ray Ozzie, CEO of Groove Networks, explores the nature of adaptive distributed computing systems and discusses the centralized and edge-based technologies required to support such robust computing systems. Ozzie provides his vision for how the emergence of a survivable computing ecosystem will affect future business processes.

Distributed Computing and the New World Order of Enterprise Networks
Dr. Andrew Grimshaw
Wednesday, 4:15PM–5:00PM • Empire
Dr. Andrew Grimshaw discusses the present and future of distributed computing, and introduces a new concept that combines distributed, peer-oriented and pervasive computing to help the enterprise environment accomplish huge tasks. He will discuss how enterprises can share the power of all of their resources and create an “edge-of-the-network” environment that will help them set new standards and achieve goals efficiently and effectively.

Collaboration Track

OpenData—Collaborative Creation and Decentralized Ownership of Data
Bruce A. Epstein
Wednesday, 10:45AM–11:30AM • Hampton
OpenData is a radically different approach to database creation and management. Learn how OpenData can help ensure timely, accurate, cost-effective creation of databases. Explore the mechanisms necessary for unadministered, collaborative database management, including techniques to ensure accuracy and data integrity.

The Free Haven Reputation System
Roger Dingledine
Wednesday, 11:30AM–12:15PM • Hampton
Roger Dingledine probes the issues involved in building a robust reputation system over a P2P system like Free Haven. These include personalized (local) reputations, rater credibility, and reputation categories (inferring performance for one context from performance in others). He examines related reputation systems such as eBay and Advogato, and lessons for other P2P systems (e.g., Mojo Nation).

Weblogs as Peer-to-Peer Journalism: Subverting Traditional Media
Meg Hourihan
Wednesday, 2:15PM–3:00PM • Hampton
Everyone’s been talking about weblogs, but why? Applying P2P concepts and philosophy to the way media and news are created and distributed, weblogs move beyond the traditional definition of web pages to create distributed conversations.
Meg Hourihan, lead Blogger developer, discusses the next step in journalism and what happens when the readers are also the writers.

Panel: Collaborative Journalism
Moderator: Dan Gillmor
Wednesday, 3:30 PM–4:15 PM • Hampton
See page 4 for panel description.

Yenta: A Distributed, Privacy-Protecting Coalition Formation System
Leonard Foner
Wednesday, 4:15 PM–5:00 PM • Hampton
The Yenta system is a fully-distributed, peer-to-peer coalition-formation system that was first announced in 1995. It autonomously determines users’ interests and then automatically forms discussion groups in which users who share interests may send secure real-time messages. This talk describes Yenta’s political motivations, details of its architecture, some lessons learned, and how Yenta compares with more recent P2P systems.

WEB SERVICES TRACK

Web Services: Looking Beyond the Basics
R.V. Guha
Wednesday, 10:45 AM–11:30 AM • Palladian
This session covers data translation and data aggregation. Data translation will be vital to getting computers to not just exchange data, but also digest that data. Data aggregation will be as important to this new Web as spiders and search engines are to the old Web.

SOAP Routing and Message Path Modeling
Henrik Frystyk Nielsen
Wednesday, 11:30 AM–12:15 PM • Palladian
This session explores combining a simple SOAP routing extension with the SOAP message model. The result is a very flexible SOAP message-based infrastructure supporting a wide variety of message exchange patterns ranging from one-way, request/response, over dialogs and P2P scenarios.

Project JXTA and Web Services
Kelly Truelove
Wednesday, 2:15 PM–3:00 PM • Palladian
This session provides an overview of the JXTA platform for peer-to-peer applications, as well as the web services standards (WSDL, UDDI, SOAP). You’ll learn how JXTA and web services standards relate to each other, and what an application utilizing a combination of the standards would look like.

Building Peer to Peer Systems with Java and SOAP
Rob Englander
Wednesday, 3:30 PM–4:15 PM, Palladian
This session explores an architecture for building web services, and the rules and mechanisms for combining those services into useful applications. The discussion covers the big picture of distributed and peer-to-peer systems, and focuses on how to build such a system using Java and SOAP.

METADATA/SEARCH TRACK

P2P Search That Scales
Lada A. Adamic
Wednesday, 10:45 AM–11:30 AM • Capitol
Decentralized peer-to-peer networks tend to have a power-law structure, where a few nodes have very high degree and many with low degree. This feature can be exploited to keep search costs down as the size of the peer-to-peer network increases. Our proposed search strategy scales well, takes advantage of the existing network structure, and incurs a relatively small additional cost for nodes.

The MusicBrainz Community Metadata Project
Robert Kaye
Wednesday, 11:30 AM–12:15 PM • Capitol
The MusicBrainz project aims to create an open, user-contributed music metadatabase. Its web and RDF interfaces allow access to advanced metadata search capabilities. Founded on open source principles, MusicBrainz welcomes any participants and has formed commercial alliances with Bitzi and Reliable. MusicBrainz plans to distribute the metadata across a web of trust to ensure public availability of the data.

Searching Freenet
Brandon Wiley
Wednesday, 2:15 PM–3:00 PM • Capitol
People frequently ask Freenet developers how and when we’re going to have searching. The answer, from this Freenet project codeveloper, is “right about now.” This talk covers the up-and-coming search features for Freenet, including how they are implemented and how their limitations compare to the searchability of other systems.

JXTA Search Technology for P2P and the Web
Steve Waterhouse
Wednesday, 3:30 PM–4:15 PM • Capitol
This talk explores the expanded Web, use of search protocols, and their place in the JXTA Technology framework. Potential areas for developing applications exist in a wide variety of domains, including publicly accessible web search, private networks of trading partners, and interaction between distributed services and applications.

Bits about Bits—Bitzi and the Business of Metadata
Gordon Mohr
Wednesday, 4:15 PM–5:00 PM • Capitol
For Bitzi, metadata isn’t an afterthought—it’s a standalone business that directly addresses the shortcomings of decentralized file sharing. Bitzi’s “community catalog” approach harnesses the power of peer-to-peer communities to create a massive, reliable directory valuable to creators and consumers of all kinds of digital works.
Peer-to-Peer is Not Always Decentralized: When Centralization is Good
Nelson Minor
Thursday, 10:45 AM–11:30 AM • Regency Ballroom
Explore the tradeoffs between centralization and decentralization in building peer-to-peer systems. While peer-to-peer is often identified with decentralization, in reality many current systems are centralized in design, or use a hybrid approach. Nelson examines four basic patterns for distributed systems design, with examples from current practice. The talk does not assume prior knowledge of any particular system.

Reduce, Reuse, Recycle
Rael Dornfest
Thursday, 11:30 AM–12:15 PM • Regency Ballroom
Much of the current wave of peer-to-peer infrastructure development, while borrowing ideas from existing technologies, is not extracting all there is to offer. Dornfest applies the “reduce, reuse, and recycle” creed to email, Usenet (NNTP), Internet Relay Chat (IRC), Wide-Area Information Servers (WAIS), and other familiar friends and lost acquaintances.

Project JXTA: A Technology Overview
Li Gong
Thursday, 2:15 PM–3:00 PM • Regency Ballroom
Li Gong introduces the JXTA platform: design concepts, protocols overview, features, applications, and future direction. JXTA technology addresses the need for an open, generalized protocol that interoperates with any peer on the network, including PCs, servers, and other connected devices.

Building on JXTA
Jeff Schneider
Thursday, 3:30 PM–4:15 PM • Regency Ballroom
Jeff Schneider describes the JXTA platform for advanced P2P developers. He reviews how to build industrial strength applications on top of JXTA, discusses what was intentionally left out of JXTA, and looks at frameworks that sit on top of JXTA. He presents examples that use the Java bindings.

Partner Panel: P2P Innovation with JXTA
Matt Reid, Moderator
Thursday, 4:15 PM–5:00 PM • Regency Ballroom
Sun and several key partners discuss opportunities for developing services and applications using JXTA.

Secure Peer-to-Peer Communication
Jim Lowrey
Thursday, 10:45 AM–11:30 AM • Ambassador
Do you know who’s reading your IM chat today? Crypto engineer Jim Lowrey discusses secure chat, instant messages, file transfers, and e-commerce in light of the Magi peer-to-peer architecture. The talk covers how to make X509 certificates, key registration and revocation, message integrity, message authentication, symmetric key negotiation, and asynchronous secure communication.

P2PSEC—Hype or Reality?
Richard Forno
Thursday, 11:30 AM–12:15 PM • Ambassador
This session investigates P2P security issues and how they compare to client-server security. Is the firewall truly dead? What countermeasures can greatly increase security and trust in P2P environments inside an organization and across the Internet? Where is the security industry currently positioning P2PSEC technologies? What are the real security issues with P2P?
Nimisha Asthagiri
Thursday, 2:15pm–3:00pm • Ambassador
Asthagiri, a Groove Networks developer, discusses the contrast between peer-to-peer and client/server access control and describes Groove’s architectural approach to access and role. The talk covers data replication within Groove, and public and private keys. Asthagiri explains how developers/users can securely implement tools into a peer-to-peer environment like Groove.

Attacking P2P Networks
Scott Miller, Oskar Sandberg
Thursday, 3:30pm–4:15pm • Ambassador
Miller and Sandberg provide a technical analysis of possible attacks against P2P information infrastructures. The talk explores simulation results from a network simulator they wrote. The presenters are both core developers for the Freenet project. The talk includes a study of attacks against Freenet and several other P2P architectures.

Panel: Circumventing Firewalls and NAT
Moderator: Wes Felter
Thursday, 4:15pm–5:00pm • Ambassador
See page 4 for panel description.

WEB SERVICES

Semantic Web or Services Web?
R.V. Guha
Thursday, 10:45AM–11:30AM • Palladian
R.V. Guha demonstrates the “Semantic Web” and “Web Services” and how they are actually two sides of the same coin. Most of the web services being developed are actually creating the semantic web. Similarly, activities in the semantic web community can profitably be used by the web services community.

The Accidental Web Service: How XML-RPC United Two Systems 3000 Miles Apart
Tim Allwine, Joe Johnston
Thursday, 2:15PM–3:00PM • Palladian
This session is a case study of an XML-RPC service that bridged two separately developed applications after both were deployed (Digital Asset Management Viewer and AmaRank). Although code examples will be shown in Perl and XML-RPC, the concepts presented here apply to any web service.

COLLABORATION TRACK

Soft Security—Safety in Numbers
Sunir Shah
Thursday, 10:45AM–11:30AM • Hampton
Sunir Shah explores soft security, which builds security by relying on social forces and is remarkably effective in practice. Using his experience with MeatballWiki and the other wikis, Shah covers the principles necessary to create a human-friendly space—concepts that are strikingly missing from today’s regulated Internet. This talk is an important counterpoint to many common reactions that serve to alienate audiences throughout the Internet.

XSLT and Web Services
Chris Dix
Thursday, 3:30PM–4:15PM • Palladian
Chris Dix looks at several ways XSLT can be used to work with web services and introduces a framework for building web services entirely in XSLT, a language that allows developers to transform one XML document into another XML document. This capability makes XSLT a valuable tool for web service developers working with SOAP, XML-RPC, or WSDL.

Building Web Services: What Tools Will it Take?
Stans Kleijnjen
Thursday, 4:15PM–5:00PM • Palladian
Stans Kleijnjen outlines the tools needed to build web services. The Internet has changed everything—including requirements for developer tools. Many IT organizations are evolving legacy applications into a collection of Internet services that can be accessed by any new application. There is little doubt that building applications that leverage a web services-based application architecture poses a series of challenges. What’s needed: a new generation of Internet tools with services-specific capabilities.

L I G H T N I N G T A L K S

Get a whirlwind tour of the companies in the peer-to-peer space. Each Lightning Talk session gives a dozen companies and projects an opportunity to deliver a 5-minute elevator pitch—what you’d say about your company or project to a VC, angel, or potential customer if you had only five minutes between floors.
The ICQ Story—The First Instant Messaging
Yair Goldfinger
Thursday, 3:30 PM–4:15 PM • Regency Ballroom
This is a start-to-finish history of ICQ, from the founder’s point of view. Goldfinger includes a technical walk-through on how it all came together, and explores the reasons for choosing a P2P architecture for the ICQ application. He covers the solutions to a variety of P2P and scalability problems encountered as ICQ was built.

The Jabber Foundation
Michael Bauer
Thursday, 4:15 PM–5:00 PM • Regency Ballroom
This session introduces the Jabber Foundation, a not-for-profit, membership-based organization dedicated to supporting the Jabber Open Source Community. Modeled after the Apache Foundation, the Jabber Foundation provides both organizational and technical support to transform Jabber from an open source standard for Instant Messaging to a real-time connectivity infrastructure for the Internet.

Visualizing and Analyzing Peer-to-Peer Networks
Alex Iskold
Friday, 3:30 PM–4:15 PM • Regency Ballroom
Current research leads to rough classification of peer-to-peer network types: chaotic, sparse, and clustered (or small-world). Iskold demonstrates these different network types through visualization. He presents Java applications that show paths of simple queries in different graphs and compare processing time and other graph-theoretic metrics.

OVERVIEW/INFRASTRUCTURE TRACK
P2P Content Delivery
Damien Stolarz
Friday, 1:30 PM–2:15 PM • Regency Ballroom
This session analyzes the many content-delivery solutions being developed with peer-to-peer technologies to create cost-effective, scalable media delivery on the Internet. While more and more bandwidth is the perennial brute force solution to streaming media, peer-to-peer networking is the first elegant solution to arrive in a while.

OVERVIEW/EMERGING TOPICS TRACK
Understanding HailStorm
David Chappell
Thursday, 10:45 AM–11:30 AM • Capitol
The forthcoming HailStorm technology has certainly lived up to its name: Microsoft has generated a raging storm of controversy around such issues as privacy and openness. David Chappell will provide a technical overview of this technology, officially called the .NET Services, along with an examination of some of the larger issues it raises.

The Jabber Foundation
Michael Bauer
Thursday, 4:15 PM–5:00 PM • Capitol
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Register online at conferences.oreilly.com/p2p
EMERGING TOPICS TRACK

This track will be finalized just a month before the conference, giving attendees and presenters the opportunity to discuss the very latest developments in the P2P and web services spaces.

LEGISLATION/DIGITAL RIGHTS MANAGEMENT TRACK

Privacy vs. Piracy
Sonia Kumari Katyal
Friday, 10:45AM–11:30AM • Empire

Probe the legal issues at stake in analyzing peer-to-peer liability from a constitutional and criminal perspective. Katyal discusses the growing tension between copyright/trademark piracy and the privacy issues raised by enforcement strategies. She’ll pay special emphasis to how courts, commentators, and law enforcement have responded to allegations of invasions of privacy—and what issues were left unsolved by the Napster decision regarding ISP liability and the Digital Millennium Copyright Act.

FILE SHARING TRACK

Comparing P2P File Sharing Technologies
David Strom
Friday, 10:45AM–11:30AM • Hampton

Strom evaluates a variety of P2P file sharing technologies for corporate and individual use, based on his own tests and extensive experience with these and similar technologies. But which one(s) really are usable, reliable, and workable solutions? Which ones are more appropriate for individuals, and which ones are appropriate for more corporate setting?

Tarzan: A Decentralized Stream-based Anonymizing Network
Roger Dingledine, Michael J. Freedman
Friday, 11:30AM–12:15PM • Hampton

Tarzan is a decentralized network that emphasizes simplicity and extensibility and allows anonymous streaming connections between peers. It’s designed to be a low-level infrastructure that provides either one-way or two-way streams, where one or both endpoints can be behind firewalls. Learn techniques for using Tarzan as an anonymizing back-end for both clients and servers in other P2P file sharing systems including Freenet, Free Haven, and Publius.

The History of Inter-Library Loan
Daniel Chudnov
Friday, 1:30PM–2:15PM • Hampton

Chudnov examines libraries as collection boundary-less community content providers. How does the case for libraries as backbone P2P file sharing infrastructure stack up? In some niches, quite well. Chudnov examines specific niches of content and services which are likely to always best be served by libraries, and why libraries might have a leg up on some for-profit P2P file sharing infrastructure providers.

WEB SERVICES

Panel: Open Services
Moderator: Gene Kan
Friday, 10:45AM–11:30AM • Palladian

See page 4 for panel description.

Jabber and SOAP
Richard Broman
Friday, 11:30AM–12:15PM • Palladian

An overview and demonstration of SOAP (Simple Object Access Protocol) within the context of Jabber, an open source instant messaging system. Code examples are provided. SOAP and Jabber are conceptually very different, but if combined can create an XML Messaging Interface to web services. The results have interesting applications for web service programmers who decide to start supporting Jabber.

Will Peer-to-Peer Unravel the Web?
Noah Mendelsohn
Friday, 1:30PM–2:15PM • Palladian

Tim Berners-Lee’s vision is for the World Wide Web to integrate all the information on computer networks everywhere. Some P2P innovations work within the framework of the Web, but others such as Napster and Gnutella do not. This talk makes the case that we can and indeed must integrate such new P2P systems into the World Wide Web.

Panel: P2P Meets Web Services
Moderator: Rael Dornfest
Friday, 2:15PM–3:00PM • Palladian

See page 4 for panel description.

Next Generation Peer-to-Peer Content Networks—Syndicating the Dark Matter
Ram Sadasiv
Friday, 3:30PM–4:15PM • Palladian

This session explores next generation content networks, which must address the issue of unique and dynamic content on occasionally connected and mobile content providers. Building these types of applications requires a store and forward messaging architecture to negotiate presence, and the ability to redirect requests from logical addresses to physical addresses. The discussion covers proposed changes to the Gnutella 0.4 protocol, and more.

WIRELESS TRACK

Cybiko: Wireless Instant Messaging and Entertainment for the Schoolyard and Beyond
David Yang
Friday, 11:30AM–12:15PM • Capital

Cybiko is a completely peer-to-peer system of cheap ($99) handheld devices that transmit, walkie-talkie style, on cordless phone frequency. Used by hundreds of thousands of kids, it presents some interesting lessons. How do the packets flow? What are the dynamics of nomadic information exchange? How is the architecture built, given the small footprint of the system (1MB onboard and the kernel is 70K)?

Anonymous Wireless Peer-to-Peer File Sharing
Rob Flickenger, Schuyler Erle
Friday, 1:30PM–3:00PM • Capital

Imagine this: You pull up to a stop light in your car. The person in the next car is listening to a song by one of your favorite bands, on MP3. When you pull away from the light, you are listening to the same song in your own car. This session describes how it’s possible to build portable, anonymous, wireless, peer-to-peer file sharing networks, using off-the-shelf technologies such as 802.11b, IP networking, HTTP services, and ordinary notebook PCs.

Hughes Spaceway: A Unique Satellite Peer-to-Peer Enabling Technology
Richard Smallcomb
Friday, 3:30PM–4:15PM • Capital

Smallcomb describes a new global broadband communications satellite service under development at Hughes Electronics. The Spaceway system will provide inexpensive broadband services with small satellite dishes, with data rates ranging from 512Kbps upstream and up to 30Mbps downstream. Applications will include Internet access (with a strong multi-media component) and LAN/WAN solutions. The service will be initiated in North America in 2003.

PLENARY

Town Hall
Tim O’Reilly, Clay Shirky, the Program Committee
Friday, 4:15PM–5:00PM • Regency Ballroom

In a tradition carried over from the O’Reilly Perl Conference, Tim O’Reilly, Clay Shirky, and Rael Dornfest will host a “town meeting.” A panel of speakers from the conference (and potentially prominent audience members) will respond to the concerns and questions of the audience. This is our chance, as a community, to air what’s on our minds and to get a “sense of the crowd” about future directions for the technology, and what we liked and didn’t like about the conference.

Bill Joy delivers a keynote at the first O’Reilly Peer-to-Peer Conference.

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TRAVEL ASSISTANCE
For discounted airline tickets, car reservations, or hotels (other than the conference hotel), attendees are encouraged to call the official O’Reilly conference travel planner: Vivian Russell of Vivian Russell Travel Services, 182 Farmers Lane, Suite 102C, Santa Rosa, CA 95405, phone: 707-525-0550, fax: 707-525-0560, email: vivian@metro.net

ON-SITE REGISTRATION & MATERIALS PICKUP:
For your convenience, on-site registration begins Monday, September 17, 4:00PM–9:00PM
Daily hours are Tuesday–Friday, 7:00AM–5:30PM

O’REILLY AUTHOR SIGNING EVENT
Emerging Technologies and the Innovators
Get acquainted with O’Reilly authors and introduce yourself to all our great books. We showcase Programming Web Services with XML-RPC, Beyond Contact, and the most complete book on P2P, Peer-to-Peer: Harnessing the Power of Disruptive Technologies, edited by Andy Oram. Meet Andy and the contributors to these excellent books.

Location: Exhibition Hall, in the O’Reilly Bookstore
Date & Time: Thursday, September 20, 5:00PM–6:00PM

Amenities at the Omni Shoreham Hotel
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The Washington, D.C., location of the O’Reilly Peer-to-Peer & Web Services Conference offers speakers and attendees a great opportunity to tour our nation’s Capitol.
► Visit a plethora of memorials and monuments
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► Learn about our currency at the Bureau of Engraving & Printing
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Programming Web Services with XML-RPC
ISBN 0-596-00119-3

Beyond Contact: A Guide to SETI and Communicating with Alien Civilizations

Peer-to-Peer: Harnessing the Power of Disruptive Technologies
### Conference Fees

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