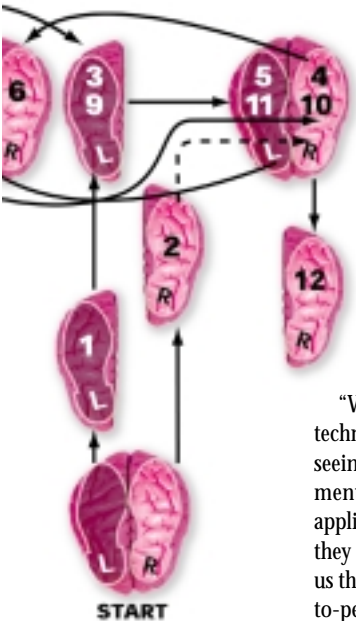


Left Brain/Right Brain

*How Will Peer-to-Peer
Affect Web-Based Applications?*





LEFT BRAIN / RIGHT BRAIN

How Will Peer-to-Peer Affect Web-Based Applications?

Ray Ozzie, creator of Lotus Notes and founder of Groove Networks, Inc.

“We don’t see the peer-to-peer model as a totally disruptive technology. We see it as more evolutionary. For example, we’re seeing businesses that have a customer relationship management system, or a partner extranet, which is a web-based application that shares content among their employees and that they extend out to select customers and partners. They’re telling us they want peer-to-peer to add an extra dimension of person-to-person interaction in real time.

“There’s a lot of value to that. Instead of using phones, faxes, or emails, you can have a working group of say 8 or 10 people, looking at the same product design file, marking it up together, communicating by voice or with text in real time. You can go out to a website, bring up a page, and all see it together, react to the information, and work collaboratively.

“If you’re looking to move information to large numbers of people, the web model is still the best. But for real-time collaboration in working groups, then peer-to-peer is ideal.”

David Gelernter, professor of computer science at Yale University and a leading authority on peer-to-peer and distributed computing

“Peer-to-peer will transform the network landscape, but it won’t necessarily change the character of software or network services. It will change the way these services are implemented.

“Take any system consisting of a server and some clients. You can always transform the server into a collection of ‘in-the-field’ mini-servers, one per client. You unplug the physical server, and the distributed mini-servers take over all its functions. Instead of 100 desktop machines and a server, you have 100 desktop machines. If the software is done right, the result

can be better performance. Because the server is local, not remote, it’s never a bottleneck.

“Another benefit is that you can make a server appear out of thin air anywhere you want one. You can draw a line around any group of machines and cause a ‘server’ to appear there, which makes it particularly easy to support flexible, ad hoc information-sharing groups.

“Of course, this all assumes that communication is fast, processors are fast, and storage is dirt cheap—all safe assumptions.”

John F. Whitehead, Director of Business Development for Cisco Systems’ New Markets and Technology Division

“Peer-to-peer technologies are interesting more for their potential to create new ways of doing business than to replace existing ones. Exchanges and the traditional client/server model will remain important for processes that need central control, like supply chain management or the distribution of closely managed content. Peer-to-peer is more interesting for ad hoc and dynamic activities, such as collaboration, distributed processing and storage, file sharing, information management, communications, and gaming.

“Also, as many tools in our work and home environment go online—from mobile communication devices to everyday appliances—peer-to-peer will be a way to scale in order to meet the increased amount of information that needs to be shared. Peer-to-peer will take the hierarchical, ‘organized chaos’ of the Internet and evolve it to a new level of decentralization and complexity of interactions. This will not replace the web or big servers, but will extend them in ways that we are only beginning to realize.”

Bob Knighen, Chief Peer-to-Peer Evangelist at Intel

“We believe that peer-to-peer is going to be very valuable. We’re using it now in experimental mode in areas where we believe it will be advantageous. We’re doing most of this work in what we call edge services, without the edge server.

“For example, we’re moving most of our training materials to multimedia files, and we have a lot of offices all over the world, many with not such good connectivity. So rather than build a typical network with sufficient bandwidth, which is very costly, we want to deliver those files on something that works like Napster or

Gnutella. The first person to use it downloads it from the server, then the next person takes it right off the first machine to use it.

“There are other things we can see already, like collaboration on projects, but my big pitch is I think we are now at a time with peer-to-peer that is analogous to the way the web was a few years ago when Mosaic had just come on the scene, and before Netscape came about. At that time, it was very hard to predict what the web would be like. We are convinced that P2P is going to be a very big change, even though we’re not sure what the change will mean.”

Interviews conducted by Insight Articles Editor Michael Cohen