



Case Study

Linden Lab:
Second Life

July 2008

The Challenge

As the creator of *Second Life*[®], Linden Lab[®] is a pioneer and the market leader in virtual worlds. An online 3D virtual world imagined, created, and owned by its Residents, *Second Life* has grown rapidly since it launched in 2003 and is inhabited today by hundreds of thousands of Residents from around the globe. It attracts not only individuals but also non-profits, universities, corporations and government agencies who use it as a tool for communication, collaboration, and education.

Linden Lab is focused on continuing *Second Life*'s strong growth in both the number of users and the time they spend in the virtual world. Joe Miller, Linden Lab's Vice President for Platform and Technology Development, saw the introduction of voice capabilities as an opportunity to drive this growth by enhancing socialization, immersion, and community for Residents of *Second Life*.

"We saw the integration of voice as a natural progression in the ongoing evolution of *Second Life*," explained Miller. "We envisioned that it could transform the way our Residents communicate and collaborate, strengthening community and social relationships and enabling consumers, businesses, and other organizations to use our platform in new ways."

Although some Residents were already using third-party voice services, Miller wanted to provide a more immersive experience by tightly integrating voice and designing it to reflect the three-dimensional aspects of the virtual world. In selecting a voice solution, he knew that Residents would expect high quality and reliability as well as full control over how they used the service. He also knew that Linden Lab needed a voice solution that could scale to the massive size of the *Second Life* Community.

The Solution

After evaluating available technologies, including the option of building their own voice solution, Miller and his team selected Vivox and the companies worked jointly to develop a powerful new integrated voice service for *Second Life*.

"We partnered with Vivox because they were the only provider with the capabilities needed to support the new communication features, immersive experience, and high level of quality we wanted for *Second Life*'s Residents."

Linden Lab and Vivox tightly integrated the voice service into *Second Life*'s environment, designing a custom user interface that gives Residents full control over their experience. For example, individuals and group moderators can adjust mute and volume levels for each speaker individually, and land owners can decide how voice will be used on their property. To ensure a life-like experience, Vivox developed 3D voice technology that identifies each speaker and adjusts their voice based on distance, direction, and other spatial characteristics.

Vivox's platform includes extensive communication capabilities that create valuable new experiences for Residents in *Second Life*. Voice support for group events of

almost any size allows businesses, educators, and other organizations to conduct lectures, training, and other activities far more effectively. And in the future as additional features such as PSTN inbound numbers, voice chat, and SMS are added, Residents will be able to stay connected and communicate more efficiently with their friends and colleagues both in and out of the virtual world.

Second Life's peak Resident usage is larger than that of any game or virtual world that runs from a single grid. The resiliency of the Vivox infrastructure allows the operations team to seamlessly handle the impact of rapid additions as Residents come back in-world and engage in voice communications. And since the network and servers used to support voice are separate from the main *Second Life* grid, the introduction of voice does not affect the overall performance of the virtual world.

The Results

Since launching voice chat in August 2007, Linden Lab has seen significant usage of the service. Feedback has been positive and adoption has been high, with over 35% of Residents talking in channel at any given time.

According to Miller, "We've received very positive feedback from *Second Life* Residents who are using voice as a more efficient way to communicate. We've also seen a rapid growth in new voice-enhanced experiences in *Second Life*, ranging from live musical performances to classroom training and recruiting."

By creating a more immersive experience for Residents, the new capabilities are supporting Linden Lab's business objectives of driving growth in users and average time spent in *Second Life*. In *Second Life* today, the Vivox voice service supports:

- A daily average of 600,000 minutes of peer-to-peer calls
- Over 1 billion minutes of voice communications per month
- Group events as large as 400 Residents

"Vivox's voice service is driving new value for *Second Life* residents and growth in our business. Through our continued partnership with Vivox we'll continue to add new voice capabilities to further enhance the *Second Life* experience."



2-4 Mercer Street
Natick, MA 01760
Toll free: 888.28.VIVOX (288-4869)
Phone: 508.650.3517
Fax: 508.650.3574
Email: info@vivox.com
<http://www.vivox.com>