

National Radio Astronomy Observatory Probes for Collaboration

National Radio Astronomy Observatory

Kevin Long has always held a fascination with stars, galaxies, and vast numbers. As a student, the Tucson, Arizona native volunteered his time at the local planetarium and for a few years operated a 12-meter telescope in Kitpeak. He eventually became a self-realized amateur astronomer familiar enough with the science to land a job as an IT systems analyst for a branch of the National Radio Astronomy Observatory.

Comprised of hundreds of scientists and astronomers worldwide and funded by the National Science Foundation, NRAO designs, builds and operates the world's most sophisticated and advanced radio telescopes used to probe cool gas clouds to study the origins of life itself – the formation of stars, planets and so-called 'mysterious objects' millions or even billions of light-years away.

Yet unlike our solar system, Long's position at NRAO Tucson was short lived, as the office had announced a two-year phase-out plan. They say every cloud has a silver lining, and for Kevin it was a job relocation offer to work 5500 miles away at the base of the glacier-capped Andes in cosmopolitan Santiago, Chile. "I asked my girlfriend to marry me and the decision was made to move to Santiago," beamed the 31-year old newlywed.

National Radio Astronomy Observatory's charter in Santiago is to develop an array of 64 radio telescopes in the Atacama plateau. Considered the driest desert on earth, its soil comparable to that found on Mars, the Atacama occupies an inter-mountainous region that is 50 times more arid than Death Valley. "Water vapor is the enemy of radio astronomy," explained Long. Records show 40-year periods without rain.

For the Longs, making the technology transition from Tucson to the 30-person Santiago office in terms of moving server applications was easier than learning a foreign language. Unable to find private bilingual tutors, the Longs used flash cards to memorize Spanish vocabulary.

Unfortunately this technique would not work in the office, where Long was responsible for managing a repository of scientific research comprising of some 19,000 documents saved in a dozen file formats and equating approximately 30GB in size – important R&D data shared among 400-700 NRAO supporters located across seven time zones in Europe, Japan and North America.

In addition to dealing with 19,000 kilobyte files, at issue was the problem of finding a document management system that would allow his scientists to collaborate on important research. With turf wars being a factor in any large organization, it was important the system featured access control based upon an individual's role, to streamline approval cycles and set up workflow scenarios and business processes.

Organization: National Radio Astronomy Observatory, based in Santiago, Chile

Industry: Scientific Research and Engineering Design

Business Problem: Needed a secure, collaboration solution for sharing discussions and editing/managing document workflows among a large team of globally-dispersed research scientists and engineers.

Website: <http://www.nrao.edu/>

Problems Solved:

- More secure method of sharing information among researchers.
- Improved document editing, workflow, storage and retrieval
- Facilitates project management

The Forum Implementation:

- SiteScape Forum
- 400users

The Bottom Line: SiteScape Forum provides an easy to administer, easy to use collaboration and workflow solution for radio astronomy scientists and engineers to share documents and manage projects.

A system was needed that would also translate well among a mix of highly discriminating scientists and engineers representing multiple cultures and ways of conducting business tasks. What's more, the system had to have utmost security, support the ability to facilitate document sharing and threaded discussions, and be flexible enough for customization.

Among other criteria, Long's list included cost and training requirements. Ideally, he was looking for something relatively easy to administer and self-evident enough not to require hours of training. An ability for potential integration of a real-time web and voice conferencing service within the application, where it would reside safely behind the firewall, was also considered.

Long eventually settled on an enterprise-level collaboration tool developed by SiteScape, Inc., a 10-year old software vendor based in Maynard, Mass., which counts the National Institute of Environmental Health Sciences, Shell International, and the Department of Health's Centers for Disease Control among its nearly 200 customers and one million users. "With customers of that ilk, SiteScape seemed made to order," said Long, who also cited the product's client-less architecture a benefit for his scientists who could readily gain controlled access to secured document stores and structured group forums via Mozilla Firefox or MS Explorer browsers.

To satisfy the demands of his 400 users, Long configured the SiteScape system into 30 workspaces and 250 user forums. Access control is managed by group membership among 180 distinct groups that had all agreed on a global template. A 10-step workflow process was established that defined rules for document modification and approvals.

Collaboration was tightly aligned with best practices, yet open enough to allow for ad-hoc communications, including the option for Instant Messaging. As documents -- some as large as 50MB -- moved through workflows, the system would trigger emails to notify team members on status updates.

With such a large repository and archive, a search engine was mandatory and resident in the program, giving users the ability to search by author, document number or by the latest publisher.

Project teams were divided into subgroups and each group was allocated a private forum in which to conduct threaded discussions. "Everybody got into the act," said Long. "Astronomers, electrical engineers, software developers, upper management... the only people not using the application are the janitors."

"SiteScape is the best collaboration tool we've used. We live and die by these documents, without which the Atacama project could not exist."