

10 TOP TECH TOWNS

W
I
R
E
D
15.01

W

W
I
R
E
D

JANUARY 2007 **CURIOSLY STRONG**

- BIONICS
- GENETICS
- DRUGS

BEYOND THE body

THE SCIENCE OF HUMAN ENHANCEMENT



**DECODING
THE MYSTERY
OF THE INCA**

**HOW NASA LOST
THE APOLLO VIDEO**

**GO GREEN!
WIRED HOME '07**

W
W
I
R
E
D
C
O
M

POSTS

Dispatches from the Wired frontier



trackback

here's a thought

Be a Good Host

“ Free Web apps – Hotmail, TypePad, Facebook, Flickr – come with a hidden price: You are storing your private data on someone else’s servers. Many people trust these companies to safeguard their data, but the best way to garner trust is to tell people that they own their data and have the right to put it anywhere they want. Whoever takes a leadership position on this issue will get a lot of good karma from users as a result.

Posted on www.avc.blogs.com ”
Fred Wilson, partner, Union Square Ventures

Two Cows, No Bull

“ Google: You have two cows. One is sponsored; the other is irrelevant.

WordPress: You can change your cows’ skin and add many helpful features to make milking them easier.

del.icio.us: You have two cows. You call them: calf, bovine, dinner, hamburger, black and white, milk, moo, cow, cows, meat, meal.

reddit: You had a delicious cow for dinner, and you digg the other cow. ”

Posted on www.ginitiative.com
Ilan L., Internet entrepreneur



CONNECTIVITY

Icy Reception

THE COMPUTER ROOM IN THE

Amundsen-Scott South Pole Station still smells of fresh paint and new furniture. With its gray carpets, soft lighting, and a couple of artificial plants, it could be the lobby of a modestly prosperous law firm. But the brutal white reflection of an ice desert filtering through tiny tinted windows reminds me that I’m at the bottom of the globe, a long way from everywhere.

Even so, I click Send and an email message – with an ego shot of me standing at the metal post that marks the actual pole’s location – flits off to the Internet. A year ago, it wouldn’t have been so easy. Back then, messages downloaded at glacial speeds. (I know, I know. But that’s what passes for humor down here.)

“Now we’re transmitting 15 gigs per day, and every room has a data port with Ethernet service,” says Pat Smith, manager of technology development for Antarctic infrastructures and logistics at the National Science Foundation. In 2005, the phones were upgraded to voice over IP. “It’s been quite a ride. I mean, I was here in 1985 putting in the very first satellite links we had,”

Smith says. “Then we had a whopping 200 kilobytes a day.” That’s about 3 percent the size of an MP3 of “Smells Like Teen Spirit.”

Like the rest of us, the 150 people who spend summers at the Pole always crave more bandwidth. They’d sure like to have BitTorrent to help endure winter’s eternal night. But really, it’s work that’s pushing the scientists to build out connectivity at the station – a collection of facilities raised on hydraulic stilts that seems like the prototype for a Mars colony. By 2014, when a 33-foot-diameter submillimeter radio telescope, a neutrino detector, and other equipment come online, researchers expect to be generating a terabyte of data each day. “These telescope numbers are something that we would never have conceived of 10 years ago,” Smith says, pointing at a chart of rapidly climbing red bars. “This is really driving what we’re doing.”

It’s not an easy job. The Pole – aka 90 South – is 3,000 miles from the closest submarine cable connection in New Zealand. Amundsen-Scott relies on the aging Iridium communications constellation plus three miscellaneous satellites wobbling far enough out of their geosynchronous orbits to exchange signals with the station. For now, they provide high-speed service some 11 hours a day and low-speed connectivity the rest of the time. “People can check their bank accounts, pay bills, and buy stock over the Internet,” says Erik Kawasaki, a network engineer. “In November, the satellite pass begins at around 3 am New Zealand time, so they have to wake up early to use it. That is about the only gripe.”

After a three-hour plane ride back to McMurdo Station – the main US base in Antarctica – I settle in at one of 300 workstations to email yet another picture of me on the ice. The furniture at McMurdo is older, and the station is more crowded – less like Mars and more like a state university. But every so often, the same bone-chilling sense of distance seeps in. Clad in his Carhartt parka, laborer Edgardo Alfonso Vega leans over from the neighboring desk: “Once this season, we were cut off from the world for 27 hours. Something happened, and there was no off-continent connectivity. No phones, no Internet, no nothing,” he says. “That’s when we felt really, really isolated.”

– Angela Posada-Swofford



ELECTRONICA

Grinding the Organ

IT'S LATE WEDNESDAY MORNING, and First Church of Christ, Scientist in Carmel, California, is empty. So, naturally, Michael Nesmith wants to fill it with music. He taps on a computer keyboard for a minute and notches up the volume – not quite to 11, but loud enough to feel in your bones. The piece, Tomas Albinoni's Adagio for Strings, is familiar – it was used as theme music in *Gallipoli* – but Nesmith and Calvin, the virtual pipe organ he designed, have transformed it into something spectacular.

Calvin – short for computer-aided live venue instrument – consists of a Dell computer, six powered JBL speakers, and an 18-inch subwoofer. Its modest wooden cabinet sits a couple feet from the console of the church's regular

organ, with its floor-to-ceiling pipes. But Calvin's sonic range dwarfs that of its neighbor. “It sounds like the organ, but it's so much better,” Nesmith says, as Albinoni's piece, ethereal and startlingly crisp, swirls around us.

Traditional pipe organs are one-man orchestras, versatile instruments that can mimic the sounds of violins, cellos, woodwinds, and brass. But even the most dexterous organist, limited to 10 fingers and two feet, couldn't take on a complex, layered piece like the Adagio. “The organ could play it, but the organist couldn't,” Nesmith says.

Calvin, however, can play just about anything, and Nesmith has programmed in church hymns, Mozart, and, for kicks, Sting's “Fields of Gold.” Calvin's secret is a database from NDB, a Hungarian company that recorded more than 3,000 tones from two of the world's finest organs, capturing every sound in their Budapest cathedrals, including the reverb of the music off the stone walls. Teaching Calvin a new piece means matching these organ samples to the original instrumentation. Adagio for Strings is usually played by a 50-piece orchestra. To make it work on Calvin, Nesmith programmed a series of digital files that tell the system to select organ sounds that best represent each of those instruments. Some files for individual instruments are available online, and all Nesmith has to do is rearrange and mix them. Other times, Nesmith “plays” the information in himself. The result is not quite the same as live music, but it's far better than a CD. Closing my eyes during Calvin's performance of Bach's Passacaglia and Fugue in C Minor, I'm briefly transported from this wood-paneled, teal-carpeted church in Carmel to a soaring cathedral in Budapest.

Nesmith – yes, we're talking about the former member of the Monkees – is a bona fide digital media visionary. A pioneer of music television and an author of early hypertext fiction, he also helped produce the films *Repo Man* and *Tapeheads* and started the seminal home video company Pacific Arts. Not surprisingly, his current project has met some resistance. Most of the Carmel congregation seems to appreciate Calvin (Nesmith says some wept during its first performance of the Adagio), but a few churchgoers have grumbled. Machine-made music in their place of worship? No thanks. Plus, the regular

SMALLTOWN OREGON LOGS ON

The True Story of Bandwidth in Bandon



The rugged Oregon coast is the last place you'd expect to find America's first 2.5 gigabit-connected town. But here's where it all started, thanks to fiber-to-the-home technology from Hitachi.

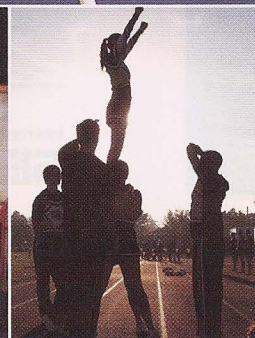
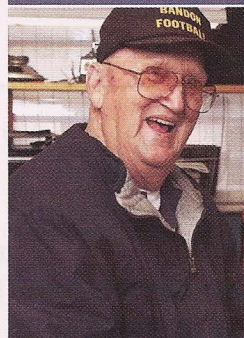
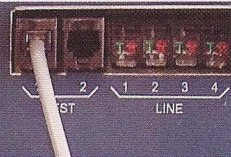
Watch what happens when the world opens up to the tiny town of Bandon through the country's fastest broadband connection.

HITACHI

AMN 1220

AMN ADVANCED MULTISERVICE MODE

GST/GIGABIT SINGLE TERMINAL



Watch the film series at hitachi.com/truestories

HITACHI
Inspire the Next