

Community Connections: Past Accomplishments and Future Directions

Christopher H. Brooks

1 Introduction

We have been developing a program known as Community Connections within the Computer Science department at USF. We began the program in 2003 with a focus on working with Bay Area nonprofits, providing technical support and system administration. In late 2003, we began thinking about how to expand the scope of the project beyond San Francisco to include an international component.

In Spring 2004, we worked with USF alumni Teresa Win and Alberto Yopez to take eight students and two faculty to Tacna, Peru, to install computers and networking equipment. This proved to be an excellent combination; Teresa and Alberto had been doing philanthropic work in Tacna previously, and were interested in expanding the scope of their work, and we were interested in conducting an international mission.

2 Tacna

We began planning for our Tacna trip in Fall 2003. We put out a call for applications from interested students, and selected nine (one later dropped out) from the 18 applications. Throughout the Fall and early Spring semester, we focused on gathering funding and acquiring equipment. We collected approximately 45 computers, 20 monitors, and cables and switches from USF, and purchased another 45 new computers. Another 10 computers, along with several networking switches, were received as a donation. The computers were set up and imaged here at USF and then packed into a shipping container. They were shipped from San Francisco to Peru in February 2004.

In March, 2004, we travelled to Tacna, Peru, where we worked at two schools, Cristo Rey and Colegio Miguel Pro. We installed approximately 45 computers at each school. In addition, we triaged and upgraded their existing computers, networked the primary buildings to create a LAN, and installed and configured server software. At the end of our week, the schools each had what Chaplain Fr. Fred Green

referred to as “the best computer labs in this part of the country.”

We feel that this trip was a great success on many levels. Most obviously, we were able to bring technology to a population that can benefit from it, thereby helping to bridge the digital divide. The experience was also an excellent one for our students. From a technical point of view, they got a chance to put ideas that they had learned in the classroom into action, and consider the real-life issues involved in setting up and configuring several buildings’ worth of computers. The students were also involved in the planning and organizational decisions, which provided them with leadership and team-building experience. They also received the experience of working in a developing nation, and giving their own time and energy to help others. We hope that this work acts as a transformative experience; one that encourages our students to make public service a continued part of their lives. In this way, we strive to live up to USF’s mission to “educate hearts and minds to change the world.”

3 Future Work

Given our initial success in Tacna, we have begun planning future work, including at least two return trips to Peru and also an initial expedition to Cuenca, Ecuador. Each of these projects are described below.

3.1 Tacna, July 2004

In July, 2004, we plan to have two students return to Tacna for 3-4 weeks to work with the teachers and students at both Miguel Pro and Cristo Rey, helping to train them in using and administering the computers and also helping them learn how to use technology effectively within their classrooms.

One of our biggest concerns in starting this project was that we would set up these computers, return to the U.S., and the machines would sit idle, with the teachers afraid to use them or unwilling to incorporate them into their classes. To address this, we plan to construct a set of tutorials and sample lessons and exercises and use them in working with the teachers at Cristo Rey and Miguel Pro to help them overcome their discomfort with technology and find ways to effectively integrate computers into their classes. We also plan to work with the students to involve them more directly in the administration and maintenance of the computer labs; we believe that one of the best ways for students to learn about technology is through hands-on experience.

3.2 Tacna, Phase 2: Spring 2005

In 2005, we plan to return to Tacna with another group of eight students. We will have two main goals on this trip: repair and setup of supplemental equipment, and the setup of wireless Internet, including a connection to the outside world.

Providing Internet to both schools will be a challenge. Cristo Rey School is in a relatively middle-class neighborhood, and can receive DSL. We have already wired the main buildings, but several outlying buildings, including the kindergarten and the auditorium, are not on the LAN, and are too far from the main complex to easily run cable. Instead, we plan to set up an omnidirectional wireless antenna that can broadcast to the Cristo Rey campus, along with directional antennas on each of the buildings. We have been working on a prototype of this system here at USF, based on a design used by SFLan and the Bay Area Research Wireless Network (BARWN).

At Miguel Pro, the problem is a bit more challenging. Miguel Pro is in the middle of a Habitat for Humanity development, and the local telecom provider is not likely to provide DSL to this neighborhood anytime in the near future. A local business, Ceticos, has offered the use of their bandwidth if a connection can be made to Miguel Pro, about 1 mile away. Therefore, we propose setting up two directional antennas, one at Ceticos and one at Miguel Pro, to bring the Internet to Miguel Pro. As with Cristo Rey, we would also set up an omnidirectional antenna over the Miguel Pro campus, bringing wireless Internet to all of the buildings.

We have also discussed the possibility of setting up a digital book bindery at one or both schools. The Internet Archive has conducted a project known as the Bookmobile, in which a van containing a computer, a high-speed printer and a binder is used to print and bind copies of public-domain books on demand. We would like to investigate the possibility of setting up a fixed Bookmobile in Tacna; acquisition of Spanish-language texts will be an issue.

3.3 Ecuador, Phase 1: January 2005

We are also interested in extending this project beyond Tacna. We have found that one of our primary strengths is the ability to cheaply deliver and install donated computers to needy schools. We are planning to partner with Proyecto Fondo Educativo, a San Francisco-based nonprofit that develops educational projects in Cuenca, Ecuador.

We are in the process of identifying schools in Cuenca that will be a good match for our program. We plan to set up small labs of 6-8 computers, along with software and tutorials in several local schools over the 2005 winter break.

4 Support Needed

This project would not be possible without outside support. There are a number of areas in which interested parties can help our project succeed. These include:

- **Funds.** We are projecting an operating cost of approximately \$90,000 for the coming year. Included in this cost are the following items:

- Travel and lodging to Tacna and Cuenca
 - Purchased equipment, such as routers, Ethernet cable, wireless networking equipment, digital bookmaking equipment, and monitors
 - Shipping of equipment, including customs fees and taxes
 - Staff salary. As our program grows, we would like to add a full-time coordinator position to help with logistical and organizational matters.
- Donated equipment. We are always interested in equipment donations. Approximately half of the computers we took to Tacna were donated by USF. We are particularly interested in relatively new computers, monitors, printers, and networking equipment.
 - Software. We are also in need of software for these schools. We are interested in software that is useful in an academic setting, including (but not limited to) office suites, graphics programs, and educational software. We are also very interested in Spanish-language software.

To donate to Community Connections or otherwise get involved, please contact Chris Brooks (cbrooks@cs.usfca.edu, 415 422-5221) or Dave Wolber (wolber@cs.usfca.edu, 415 422-6451).