NComputing

Reduce the digital divide, expand horizons, and save the Amazon?

YACHANA FOUNDATION

Challenge

Experiential education to the local communities is proving to improve lives and employment. Hands on computer classes to youths and adults in the area resulted in an enhanced program of learning for the mestizo and indigenous populations in the Ecuadorian Amazon.

Look into a brighter future.

Since 2005, Yachana Foundation has been providing computer training to mestizos and indigenous youth from six different ethnic groups in 80+ communities. But providing a cutting edge technology 25-monitor computer learning facility in the Ecuadorian Amazon was an ambitious goal.

Tablets: 'Not a viable option'

Use of tablets was not meeting the need to teach computer skills required by any young person going out into the world today, regardless of where they live, even more so in the middle of the Amazon.

The Yachana Training Center is located in the Napo Province of Ecuador where farm incomes are less than $2/day and 150,000+ acres of rainforest are lost every year. It is a challenge to encourage the youth of the region to remain in the area, support their families and help save the Ecuadorian Rainforest. This year the Yachana Foundation developed a curriculum and conducted classes in the Yachana Training Center for 166 students of the region. These students do not have computers or Internet access at home. Students are required to take computerized tests in school yearly yet receive no formal computer instruction as part of their normal classes.

Solution

A 25 thin-client computer lab was built through donations from Inter-American Development Bank and Rotary International utilizing *NComputing*'s desktop virtualization solutions. With dramatically low energy consumption this facility now serves 200+ people in the local communities.

For Yachana, the answer was to install a computer laboratory with as many workstations as possible and offer basic computer instructions to the youth attending Yachana Training Center. Requirements for a successful installation were low power consumption, reliability and cost and these became the drivers in the final design of the laboratory. Funding sources through grants were limited and being so remote repair and maintenance needs were a major consideration. A Virtual Desktop Thin Clients design offered by *NComputing* was the right solution.

NComputing

![NComputing logo] **Yachana Training Center**

Results

Yachana Training Center now has the capabilities to conduct basic computer skills classes for the communities. The cost and energy savings over an installation of 25 individual CPU's has made this computer center possible.

There is no IT support available to Yachana out in this remote Amazon region which required the system operate flawlessly. This lab has operated for six months with almost zero down time.

Business Partner

MUNDO DIGITAL
Smart Click MDSC S.A.

Deployment architecture:

Virtual Desktop Thin Clients:
• *NComputing* **L300**
Host:
• Brand: White box
• Processor: Core i7
• RAM memory: 16 GB
• HDD: 1 TB
• Network: 10/100
• OS: Windows 2008 R2
Peripherals:
• Monitors: 19" (1920 x 1080 resolution)
• USB Keyboard and Mouse
Applications:
• Local office applications
• Web and client-server

For Douglas McMeekin, Executive Director of Yachana, the purchase of stand-alone workstations was not an option. "We needed to apply the latest technology, instead of having the traditional 25 individual CPU's or servers," McMeekin said. "By using just the one terabyte server we have also reduced the heat that would have normally been generated by so many individual CPU's; a big plus working in a tropical environment."
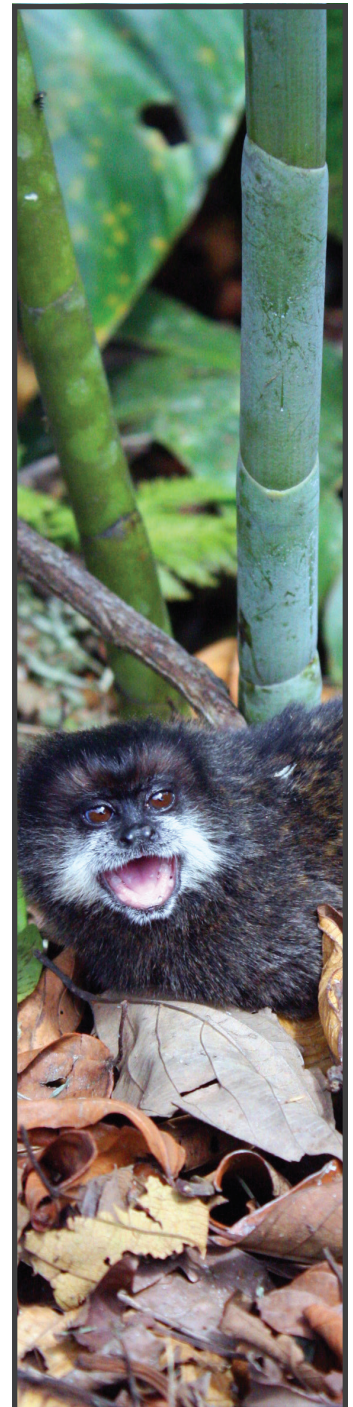
High performance and efficiency for less cost

In the search for an alternative, McMeekin discovered *NComputing* and Ecuadorian partner Mundo Digital Smart Click was the answer to accomplishing the objectives of energy efficient hardware and 25-seat computer access for dramatically less cost. *NComputing* employs thin client technology to enable virtualized desktops. But unlike traditional thin client technology, *NComputing* delivers better user performance at a lower cost.

"With *NComputing*, I can offer computer instruction to more students simultaneously at a very reasonable cost, and reduce my energy consumption by 3,120 watts making operation possible in the Amazon. This was my only viable option," McMeekin said.

Using funding provided by Inter-American Development Bank and Rotary International, *NComputing* **L300** solution was installed at the training center. The **L-series** taps the unused capacity of a PC or server so that users can simultaneously share a single computer. With the **L300**s, Yachana runs 25 Windows workstations off a single server. By the end of the school year over 130 of the students were able to take a computerized demographic survey. The results were presented to funding groups and showed that within a few months the diverse student base had progressed from no computer skills to being functional on a computer. "At this rate we will help several thousand youth become better equipped to live locally and be computer literate within 10 years," said McMeekin.

Yachana Training Center has successfully rolled out *NComputing* in a remote province in the Ecuadorian Amazon enabling the engagement of students to experience hands-on computer training essential for critical life skills to local youth. And soon, Yachana will become the first organization in the area to offer weekend computer classes to young people and adults in this same facility.

NComputing® | Yachana Training Center

> *"With NComputing, I can build a computer laboratory at a cost my donors can afford, and when it's time for a technology refresh or expansion, the costs will be minimal compared to any other solution. This works for me."*
>
> **Douglas McMeekin**
> Executive Director Yachana Foundation Ecuadorian Amazon

Boosting student achievement and education performance

Yachana students showed a higher overall performance as compared with the rest of the students from the province as a result of a practical hands-on environment and positive academic reinforcement of which computer training was vital part of the program. In the fall of 2014 Yachana Foundation in a cooperative initiative with Yachana Inti, a Ministry of Education/Missionary program, will continue the academic reinforcement project and will expand the program to both day and boarding students in the area. The director of the Yachana Inti program, Esthela Llerena, concludes that this hybrid program would be highly beneficial to her students.

"The Yachana Foundation in Ecuador has gone through a lot of changes during the past three years and adding this state-of-the-art computer laboratory was a great achievement. Student engagement is growing. We can now offer personalized hands-on computer classes that includes mouse and keyboard handling skills, basic typing and writing simple correspondence letters. This is unprecedented in our region! Yachana is constantly striving to apply technology or inventions designed for those living at the Base of the Economic Pyramid in its operations and the *NComputing* installation is helping us achieve this goal," said McMeekin.

Helping to save the Amazon will never stop

Without the efficiency of *NComputing*, Yachana Foundation would be taxing the environment of the Amazon through larger power consumption. While this is small a part to the important conservation issue, the larger more important aspect of this project is that our teaching-through-example vocational training in the computer laboratory will help more than 800 people yearly improve their lives, nutrition and incomes. Young people need to remain in the Amazon and help protect the rainforest and Save the Amazon. This is a major step toward making this occur and is a never-ending story.

Now with *NComputing* **L300** units, Yachana can continue to increase the number of local people that pass through its computer classroom yearly. In the spring of 2014 the *NComputing* installation serviced the teaching program with zero downtime. This is an amazing statistic given that the system operated in a hot and humid location with no environmental control in the classroom. Rotary International purchased a UPS to assure computer operation on all class days even when power was not available due to local outages.

As Yachana grows Executive Director McMeekin hopes to be offering more computer opportunities to the people of the area. Introduction of computerized ESL reinforcement lessons, accounting and Internet research will reinforce classroom learning through practical applications that can be replicated in local communities to improve agricultural techniques, nutrition, generate income and preserve the rainforest.