

Hi and welcome. Thank you for coming today. I'm Avni Khatri and I'm here today to talk about an organization I am a part of – Kids on Computers.



Before I start – I do want to thank the o'reilly and oscon teams for supporting us. For our booth, Sarah's announcement this morning at the keynote, and for allowing me to speak about KOC here. They've been super helpful and nothing short of amazing.



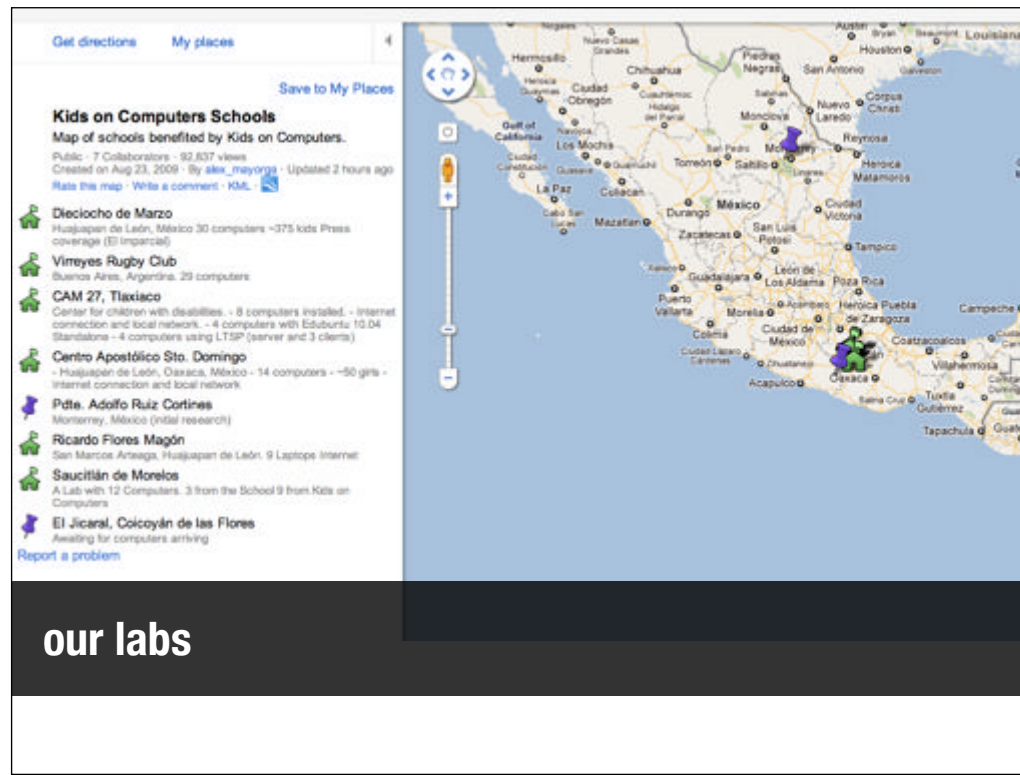
## who we are

- We're a non profit organization founded in early 2009, run entirely by volunteers.
- Our purpose is to build computer labs using donated equipment in where kids have no other access to technology and FOSS.
- Over the last 2+ years that we've been working we've worked on establishing a process in order to build the labs as efficiently as possible.
- In order for a school to be chosen - we require that there be a local contact (preferably technical) in the region to help communicate issues about the lab to us after we are gone.

For example in Mexico - we have Thomas - logistical contact - finding schools / principals for us to work with and Hermes - technical contact to setup and fix issues)

- We also require there to be strong community network. Parents and teachers have to be supportive of the lab.
  - For example one of the schools we have - 18 de Marzo -
  - The parents of the kids built the building which houses the computer lab with donated bricks.
  - The 500 families in the school donated a few dollars / month to pay for the teacher's salary for an entire year so they could run the lab we installed.
- In another - CAM 27 - a school for kids with disabilities -
  - A local business donates the internet. The kids use the lab during the day and at night -
  - It was funded by the government but the government didn't pay the bills and the electricity got cut off

These are the types of schools we're working with.



With this model – We have set up 6 labs so far.  
5 in the Huajuapán de León region of Oaxaca, Mexico  
1 in Buenos Aires, Argentina  
We are currently working on a lab in Zambia, Africa and will be working on a lab in India later this year.

Along the way – we’ve met some fantastic people and delighted some amazing kids and we’ve also encountered some interesting issues. One of those issues being...



Partimus – donated computers for girls school

System 76 – laptops (being used in san marcos; laptops will be sent to zambia)  
buy a computer from System 76 – you can send in your old one.

- Mexican Bank
- Volunteers and people like you
- So now that we've collected all this equipment– What do we do with all of it?



## storage and inventory management

- We have equipment all over the country so we find volunteer's houses or volunteer's friends and family houses to store the equipment in until we're ready for our trip. This is great and we're so appreciative to our friends who help us store, but it becomes difficult to track all of our inventory.
- We decided in addition to collecting donations - we need to also track - so we know who donated what - where it ends up and the current state its in.



- We are planning a project for the grace hopper conference open source codeathon in November where participants will build an inventory management system for us to use for our equipment.
- We're currently looking for an open source framework to build the inventory management system on. If you have any ideas, please let me know.



- Another challenging issue we've encountered is getting donated equipment to the country.



One option is shipping:

- FedEx grant in 2009 which helped us ship computers and monitors to 18 de Marzo
  - computers got stuck in customs
  - we had volunteers to install, but no computers
- the school ended up paying customs fee (~\$300)

- Another time we shipped equipment to Mexico and it was shipped back to us, because Mexico customs wouldn't allow it to be thrown away

Another option is taking the equipment when we go down there.

- May 2011 - 6 of us were stuck in customs for 3 hours in Oaxaca City while they manually inventoried all of our equipment (wrote serial numbers by hand)
- we were only able to get laptops out, not desktops
- "official letters haven't helped"

Third option -

YEF grant - Netbooks



- Our standard install consists of the following software - edubuntu, gcompris suite, tux suite, khan academy videos.
- We go in with the idea that ok every computer needs this - this should be easy.
  - We get there and find some systems are too old to have the latest version of edubuntu so we need install disks for older versions.
  - Certain version of gcompris and tux games don't work on some computers
  - The Khan Academy videos are wmv files so we need to install VLC and the right VLC drivers -so we end up in dependency hell.

#### Lessons Learned

- upgrade is harder than an install
  - we need 5 copies of each OS on different media - CD/DVD/ USB
- When we start in and do an install fest here and then take the laptops pre-installed to the country- like we did for the san marcos school- lab up and running in an hour

#### open questions

- custom distribution?



- the most challenging aspect of hardware is bad RAM and also keeping track of what a system currently has.
- pixie boot -
- Some computers their, cd / dvd drive didn't work nor did their usb drives, so there was no way to connect to them
- we haven't had a lot of issues, but the ones we've had have been annoying.
- one example where we had an interesting challenge was in saucitlan de morales



## saucitlan de morales

- saucitlan de morales
- we went to the school and had been told the computers are all set up, all you have to do is plug them in.
- we took a taxi to a remote dirt road – with the taxi driver not knowing where the school was.
- 1.5 hours and we were able to give enough directions for us to arrive.
- we get to the school and it's locked – we weren't sure where to find someone who works with the school – so we ask this young woman. She thinks for a moment and then hops in the taxi with us.
- this school is 1.5 hours from the main city , it has no phone lines –
- goats – someone
- no hard drives
- 3 computers in the principle's had hard drives
  - made them into servers
  - each computer would serve 3 computers + itself for a total of 12 computers
- In the mean time we decided to test each computer to make sure it would boot. A lot of them didn't so we spent the day swapping RAM and monitors.
- 2 days later – we made the 3 computers with hard drives into LTSP servers and the computers w/o hard drives into LTSP clients.
- 1 day of work for 7 people



internet

- we take internet for granted here now, but one thing I learned on my trip to Mexico in May is that a lot of places don't have internet, a lot of places don't even know what that means. I mean we're going to towns where they don't even have phone lines.



easier example –

santo domingo girls school –

we don't have any religious affiliations at all, but most of the schools we work with are public schools, but we decided to work with this school – because they take in girls from difficult situations.

downstairs – main office with 2 computers – cable modem with multiple ports

internet paid for by shop owner

Hermes pulled cable from downstairs to upstairs to 2 switches

All the computers in the classroom were connected to the switches

System configured with static IPs – but cable modem reconfigured – and we didn't have password reconfigured with DHCP – DHCP better because the school doesn't have to keep track of the static IPs they have limited technical support so the simpler the better

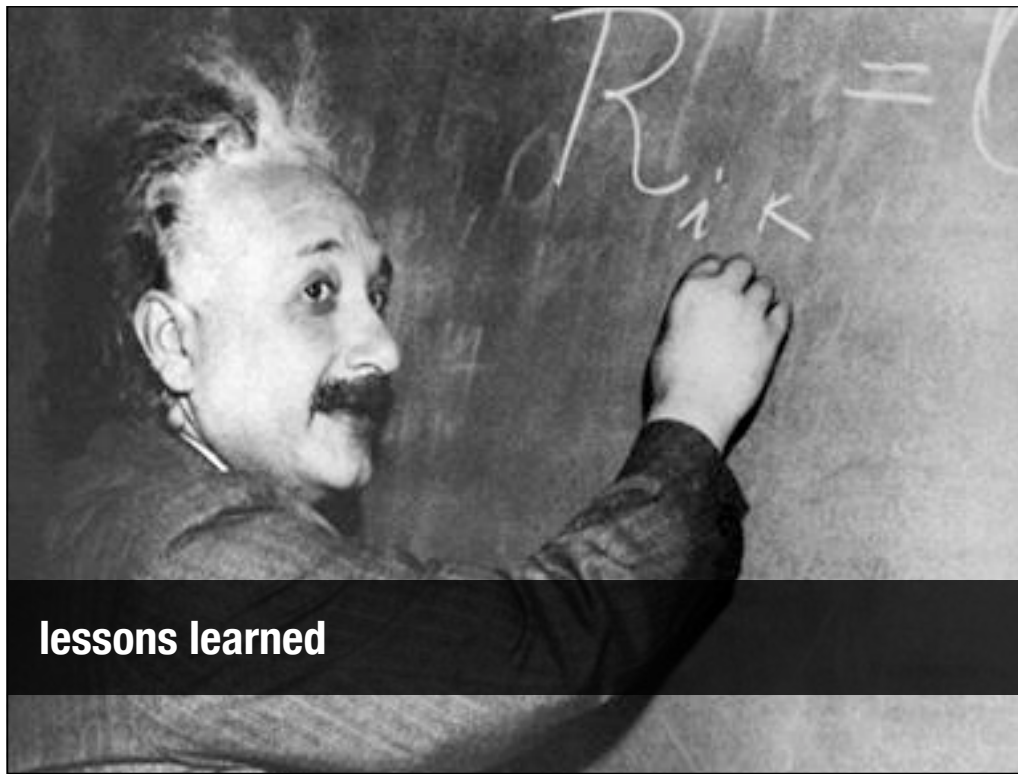


school in san marcos –

- city hall had satellite link coming down into the office (very slow connection) – 2 Mbps – pulled into a modem
- modem connected to a 100 Mbps switch
- serving 5 computers in 2 offices in city hall
- from that switch we pulled a cable to the top of city hall across the street to the top of the school house.
- we dropped the line down into the computer lab and connected it to wifi-bridge (router) which created a WAP for the laptops (system

76)

- problems
  1. we didn't have long enough ethernet cable – Thomas made trip for the cable but forgot crimping tool
  2. no ethernet connectors – stripped connectors from old cables
  3. no crimpers –
  4. no router
- after we resolved that and climbed on the roof – the internet for the lab set up pretty easily



### lessons learned

- communication is vital
- bring all necessary equipment with you where ever you go -
- we take things for granted here.
  - need good list of equipment,
  - initial planning to know to bring, especially if the nearest shops are 2.5 hours away



Come join us. Come travel to exciting locations If you want to learn more about us – come visit our booth in the Expo Hall.

We're accepting old computer equipment and monetary donations here. We're also having an install-fest tomorrow at our booth from 1-4pm so please stop buy if you can help!

kidsoncomputers@lists.kidsoncomputers.org  
join us: <http://bit.ly/mOVenI>  
questions: avni@avni.net

We've currently worked with 6 schools ~2000 kids in a little over 2 years. We want to continue at this rate.  
We have a lot of fun, we're always learning, we've changed the world and we're going to do it again. Join us.

# Thank You!

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