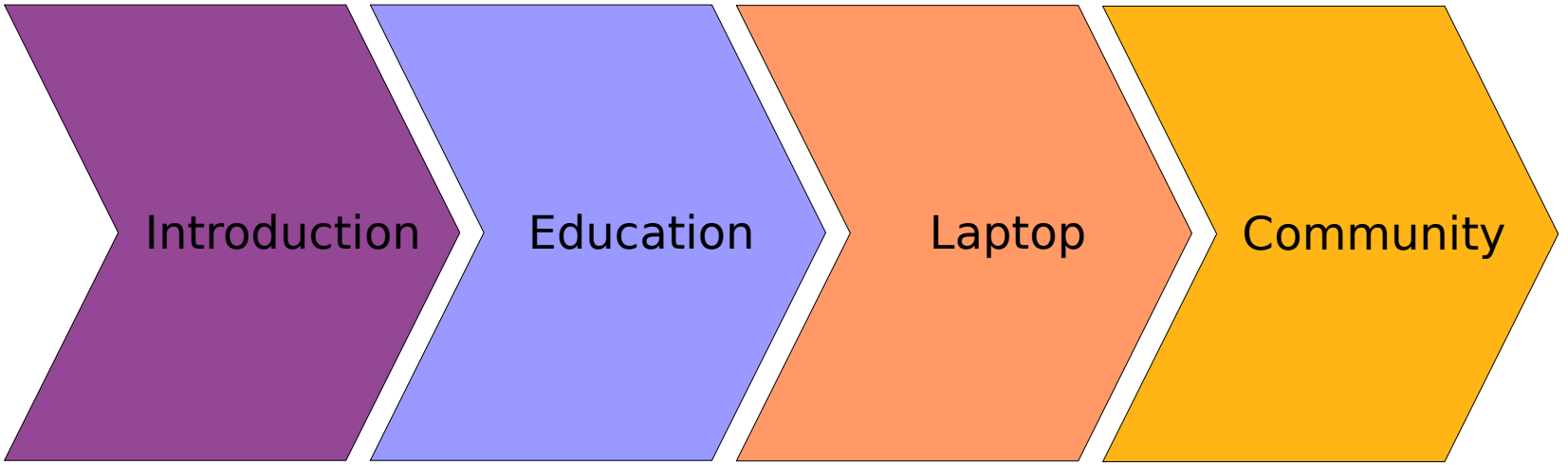
One Laptop Per Child

Exploring, Sharing, Reflecting, Learning

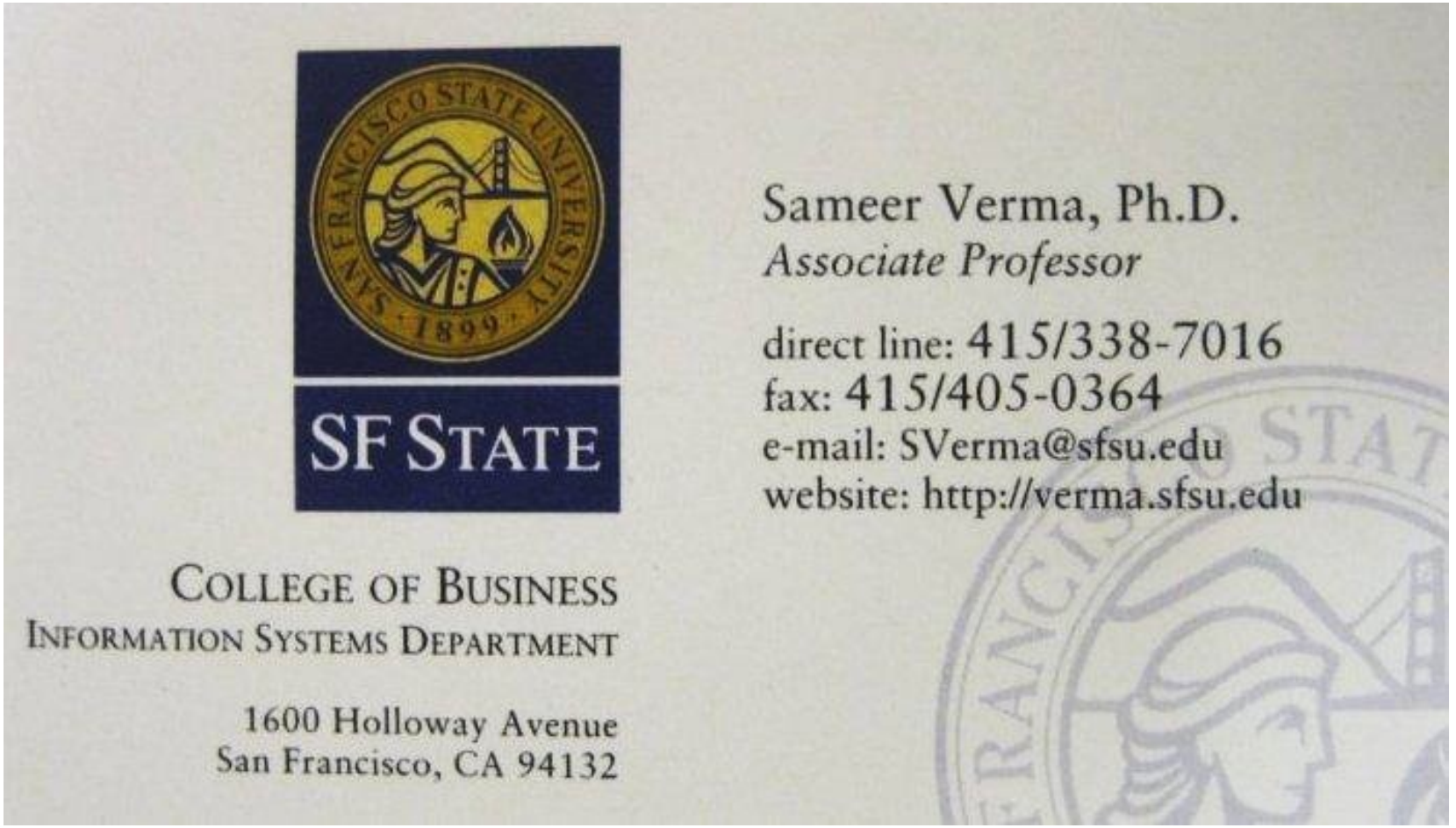
Sameer Verma, Ph.D.
sverma@sfsu.edu

Presentation at:
Mona School of Business
The University of the West Indies
Mona, Jamaica

Outline



About myself



San Francisco State University

- Part of the California State University system
  - 23 campuses, 450,000+ students, 24,000+ faculty
- San Francisco State University
  - 8 colleges
  - 30,000+ students
  - Undergraduate: 24,000 +
  - Graduate: 6,000 +
  - Faculty: 1,800 +

Disclaimer

- I do not work for OLPC!
- Enthusiast, researcher, developer
  - Interests
    - Free and Open Source Software and Content
    - Internationalization/Localization
    - User Interface Design
    - Networks
    - IT Sustainability

Disruptive

- OLPC: Excellent example of disruptive technology innovation
  - Education: learning is student-driven
  - Hardware: sustainable computing at its best
  - Software: power of Free and Open Source at work
  - Content: a public commons of content

Somebody is finally thinking of the children!

Education

- *Its an education project, not a laptop project.*
  - Nicholas Negroponte, Founder - OLPC
- OLPC's Goal:
  - *To provide children around the world with new opportunities to explore, experiment and express themselves.*

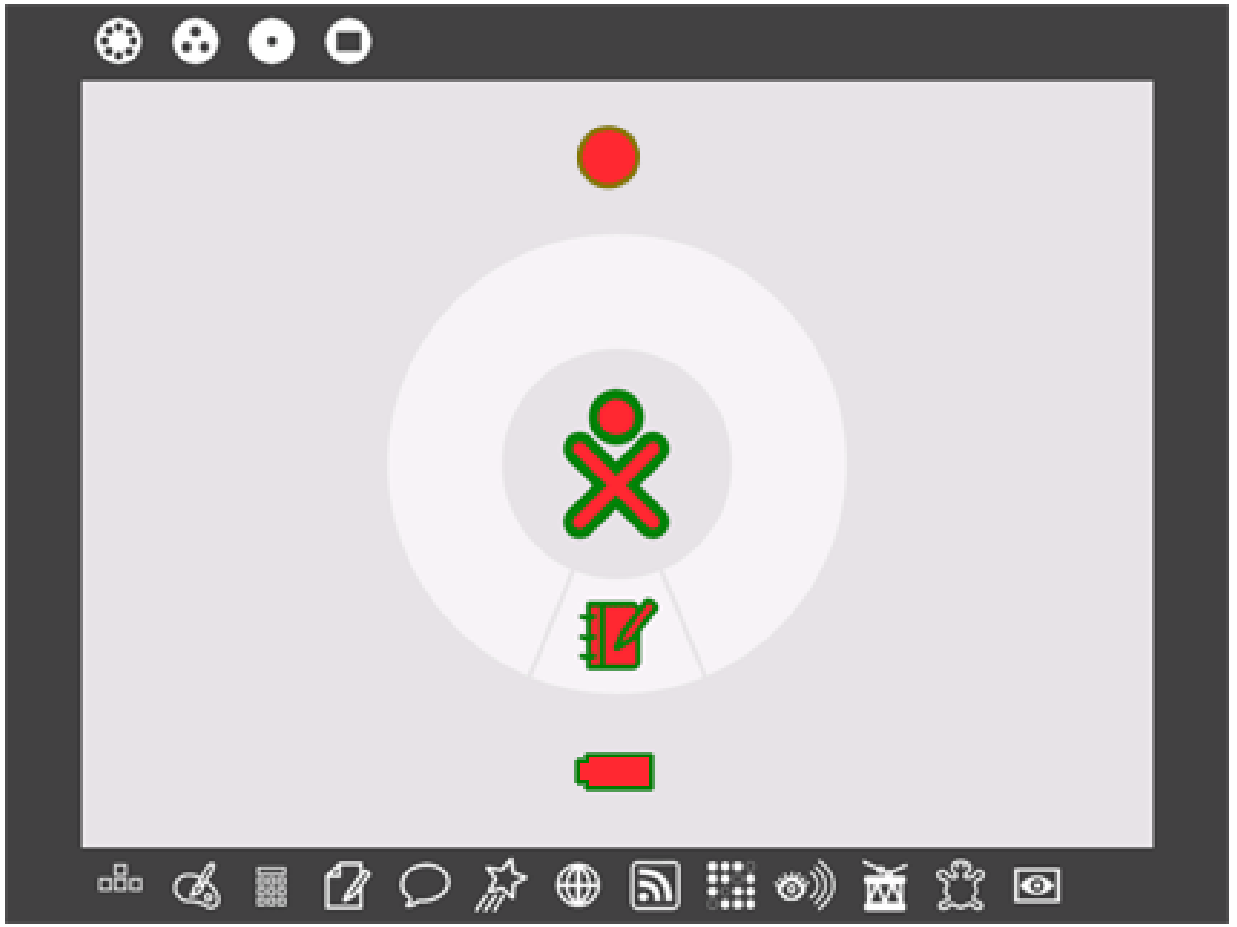
A different generation...

School Galadima, Abuja City, Nigeria
See http://wiki.laptop.org/go/Galadima

Samkha village located in the suburbs of northern Thailand
See http://wiki.laptop.org/go/OLPC_Thailand/Ban_Samkha

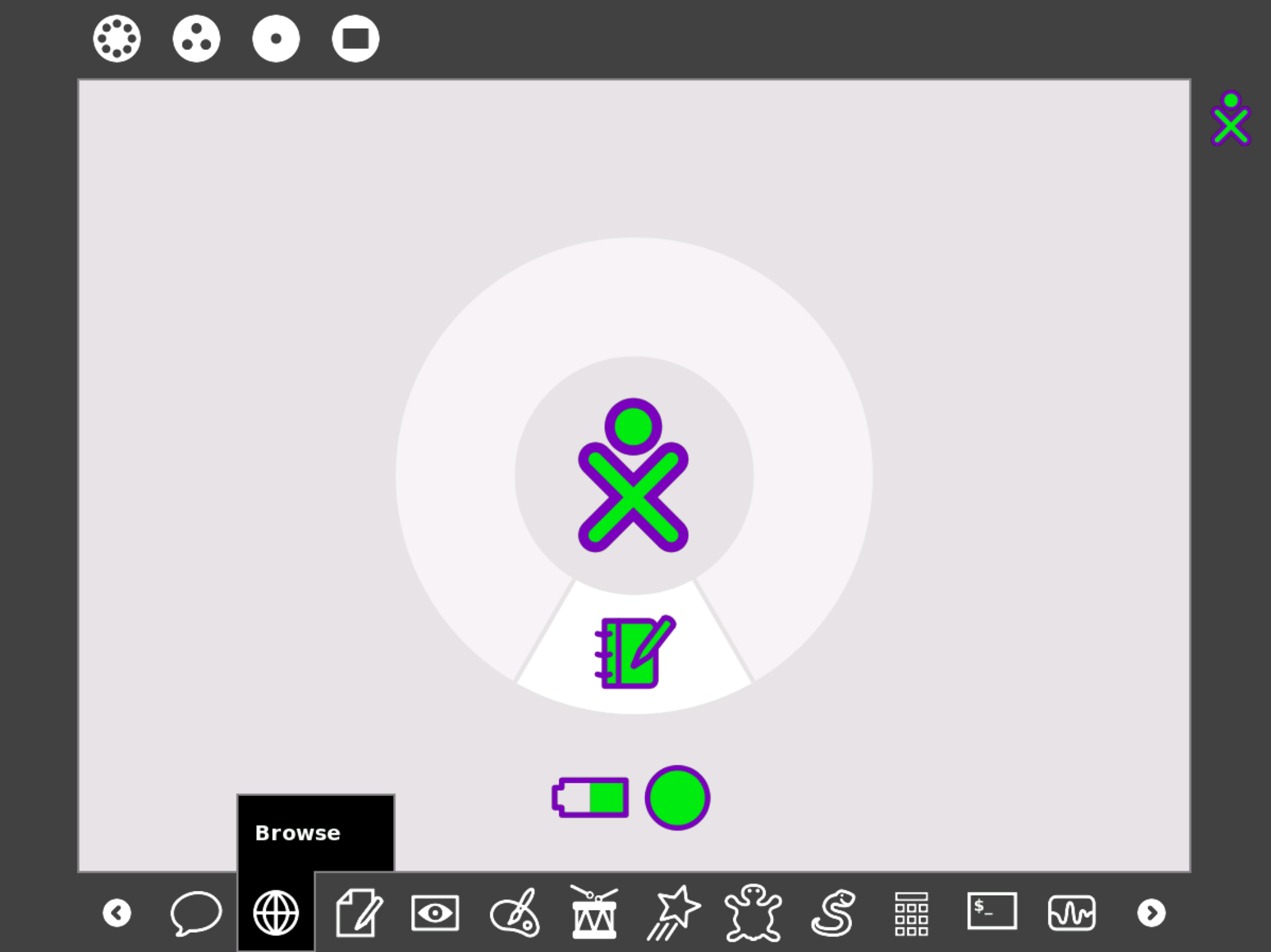
Khairat school is India's pilot site.
See http://wiki.laptop.org/go/OLPC_India

Sugar: a different interface



The XO laptop runs on Linux, a free and open-source operating system. OLPC's commitment to software freedom gives children the opportunity to use their laptops on their own terms. The children—and their teachers—have the freedom to reshape, reinvent, and reapply their software, hardware, and content. There's even a button located on the keyboard that allows children to view the programming behind certain applications. The XO laptop's revolutionary interface, Sugar, also promotes sharing and learning.

http://laptopgiving.org/en/software-and-interface.php


Browse

Sugar

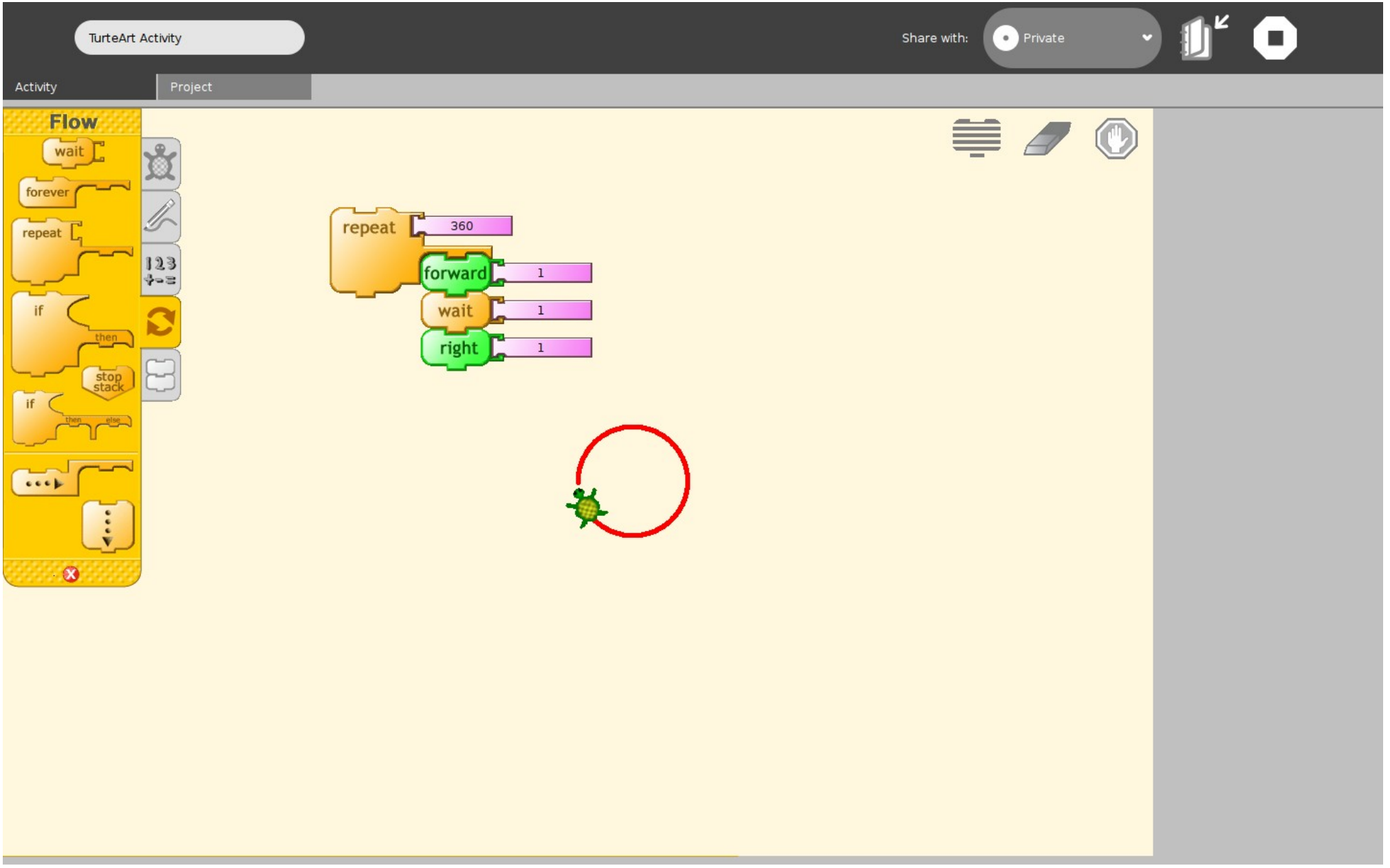
- Focus on activities, not applications
  - “Write” a letter vs. “use” Microsoft Word
  - Educational vs. Vocational
- Run your own Sugar environment!
  - Download ISO image at http://wiki.laptop.org/go/LiveCD
  - Burn to CD.
  - Boot computer with CD. No installation required!

Activities

- Write
  - *A simple word processor*
- Chat
  - *XMPP based. Same as Google Talk*
- Browse
  - *Firefox-based + flash + AJAX*
- Record
  - *stills and video*

More activities... http://wiki.laptop.org/go/Activities

One forward, One right



the XO laptop

Laptop

- 7.5 inch diagonal screen at 1200x900 (200 dpi)
  - Sunlight readable!
- Wi-Fi, USB, microphone, speakers, camera, SD card slot
- Screen rotates to tablet mode
- Water resistant keyboard
- Dust resistant design

More laptop

- Laptop, turned on its head
  - All electronics are in the upper section, except the keyboard.
  - Easy to replace components
  - Carry handle also acts as base stabilizer
  - Wi-Fi rabbit ears double up as latches and increase range
  - Any 11 to 24 volt power supply will do
    - wall charger, car battery, crank/yoyo power, solar panel

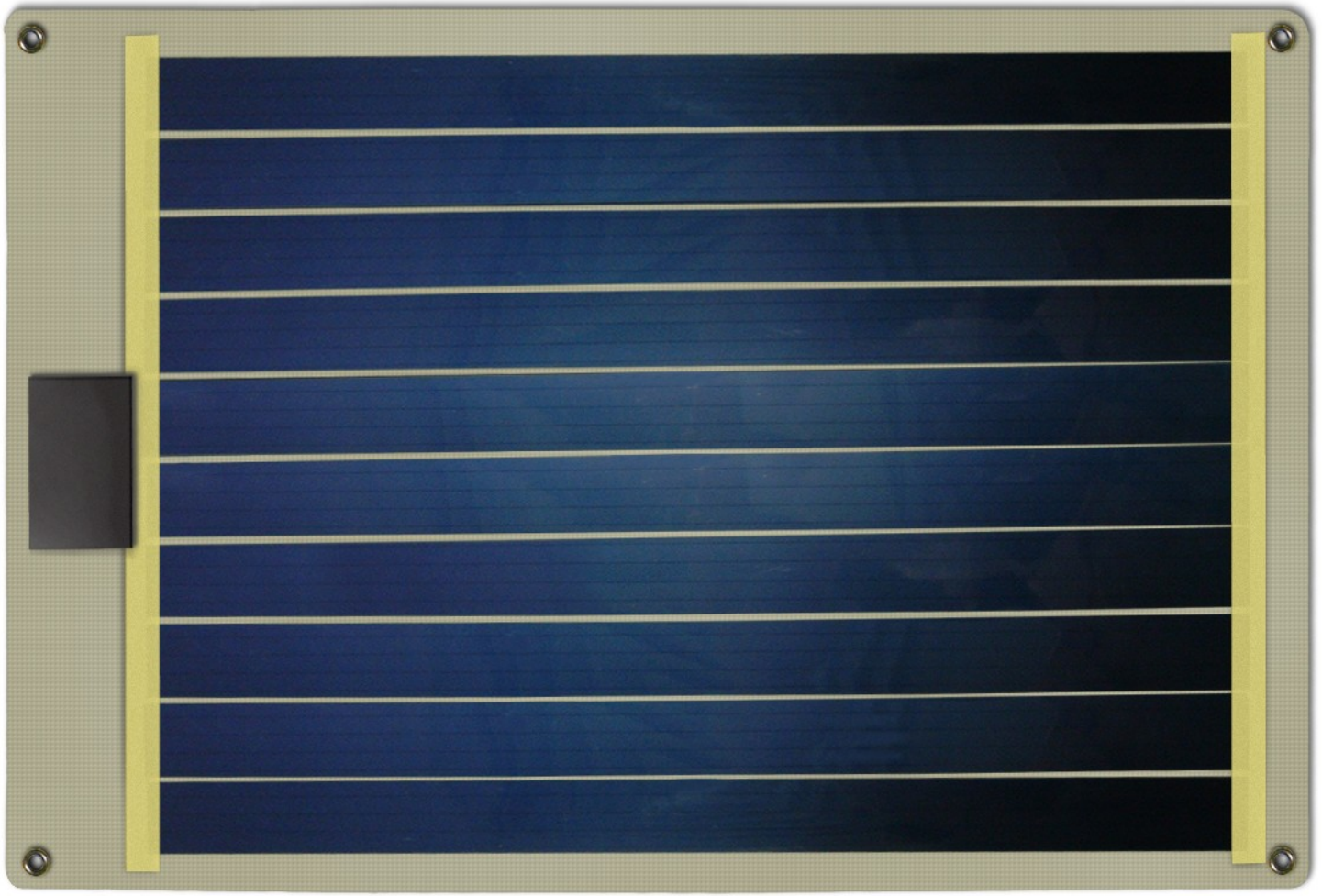
Yo Yo Charger

http://www.potenco.com/products

Hand Crank Charger

http://wiki.laptop.org/go/Peripherals/Hand_Crank

Solar Panel

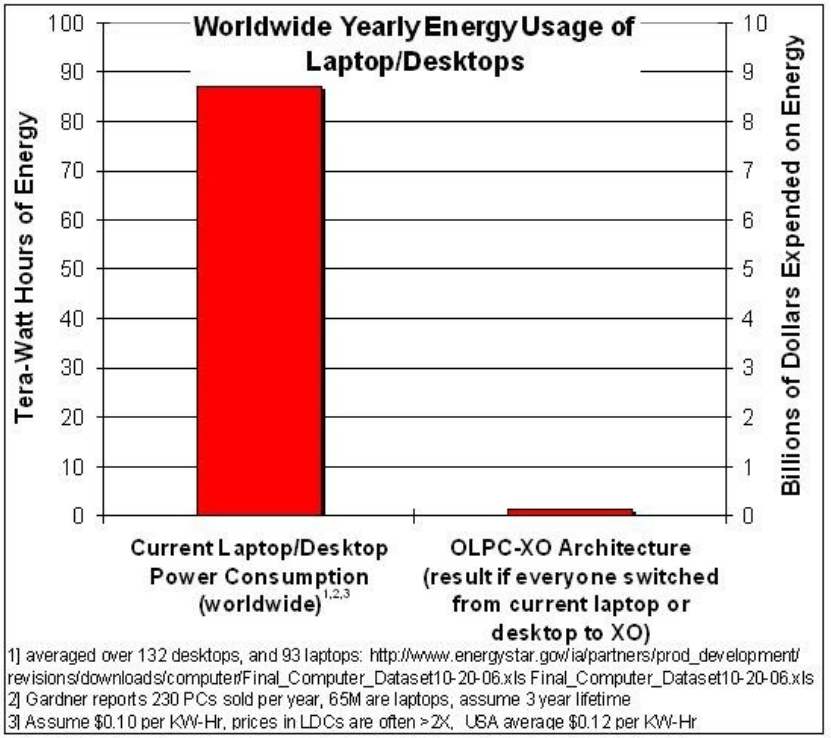


5 Watt/14Volt panel

http://wiki.laptop.org/go/Product_News#Solar_Panels

Green

- Looks green, works green
  - Fully recyclable
    - 5 year life span
  - Idle power consumption
    - Desktop – 80 watts
    - Laptop – 25 to 60 watts
    - OLPC – 1 to 8 watts

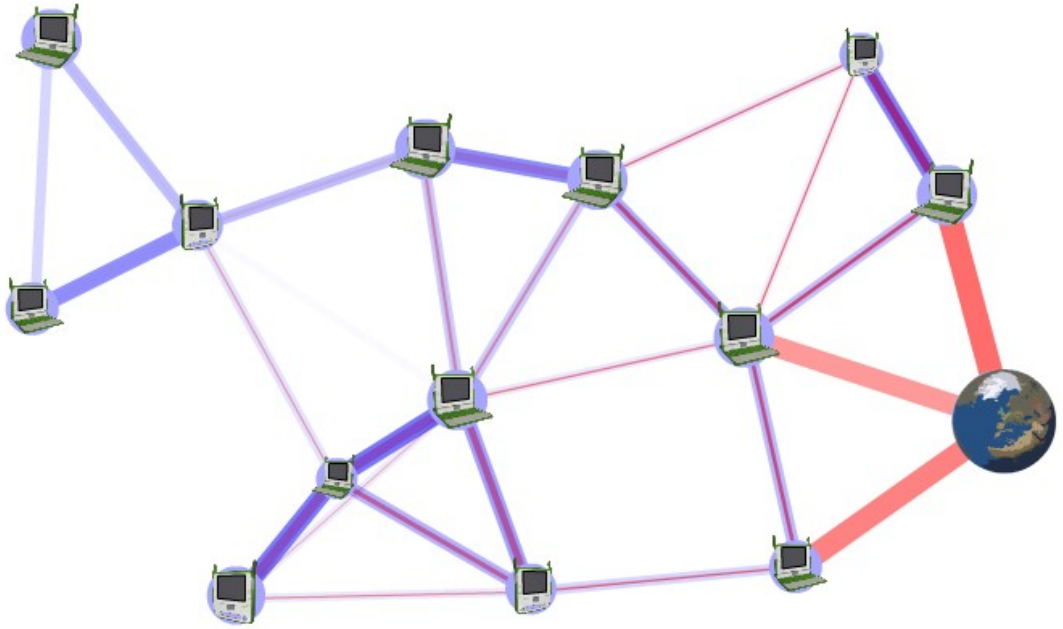


Power

- Batteries that last 4x longer
  - Lithium Iron Phosphate ($LiFePO_4$)
  - Currently at ~ 5hrs, final goal ~10 hrs
- 0.1 watt in sunlight readable mode
- Running at full blast
  - Wi-Fi, full backlight, camera, microphone, speakers
  - 7 to 8 watts

Mesh Networking

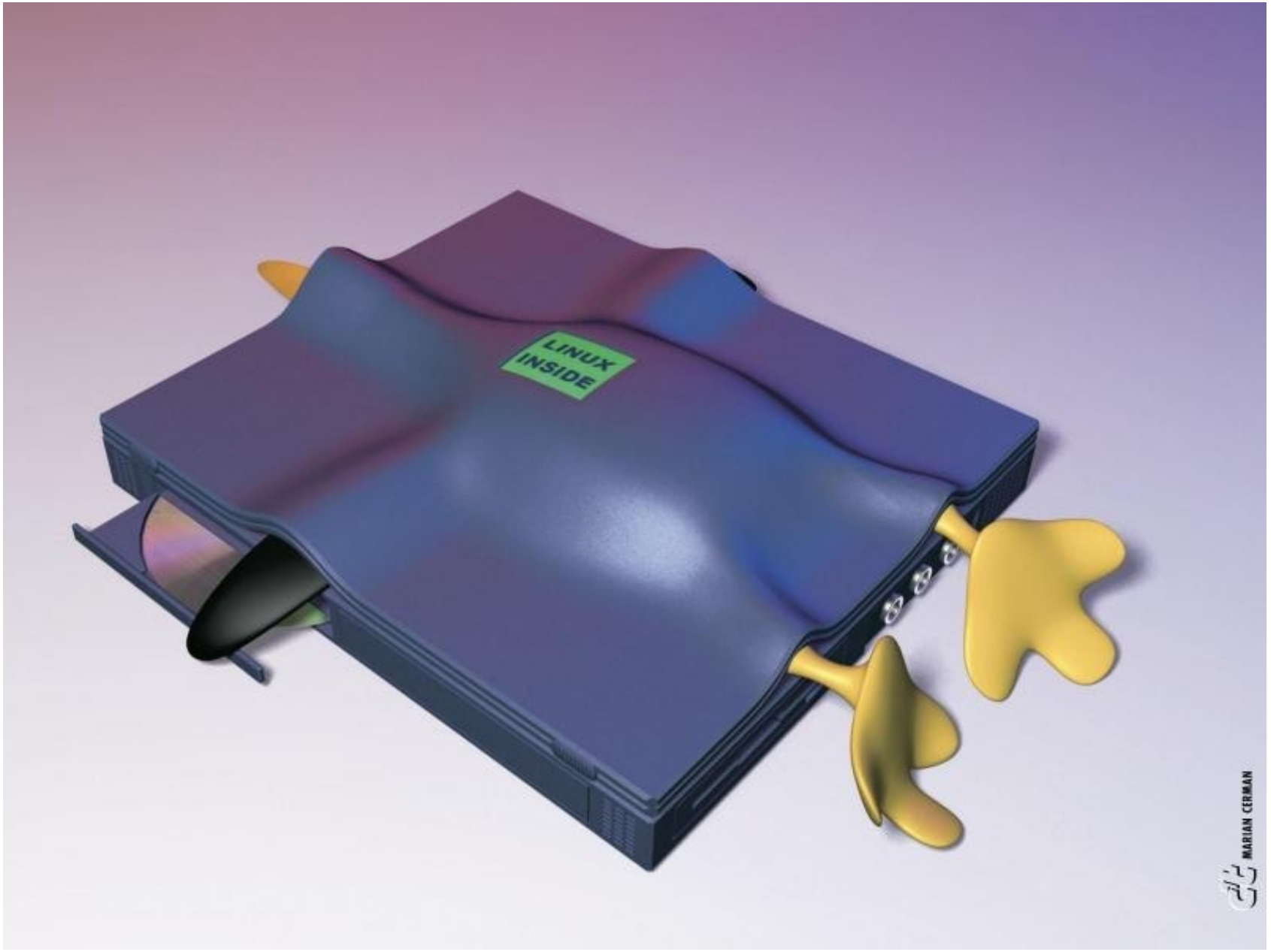
- Mesh does not require central hub-like infrastructure
- Wireless mesh works even when the CPU powers off



No moving parts

- No fans, no hard drive, *nothing* spins.
  - 1GB Flash + 256 MB RAM
  - USB storage
  - SD slot
- AMD Geode processor runs cool.
  - Does not need a fan to cool it off
  - No air slots or ducts

Linux in the box



FOSS: Free and Open Source

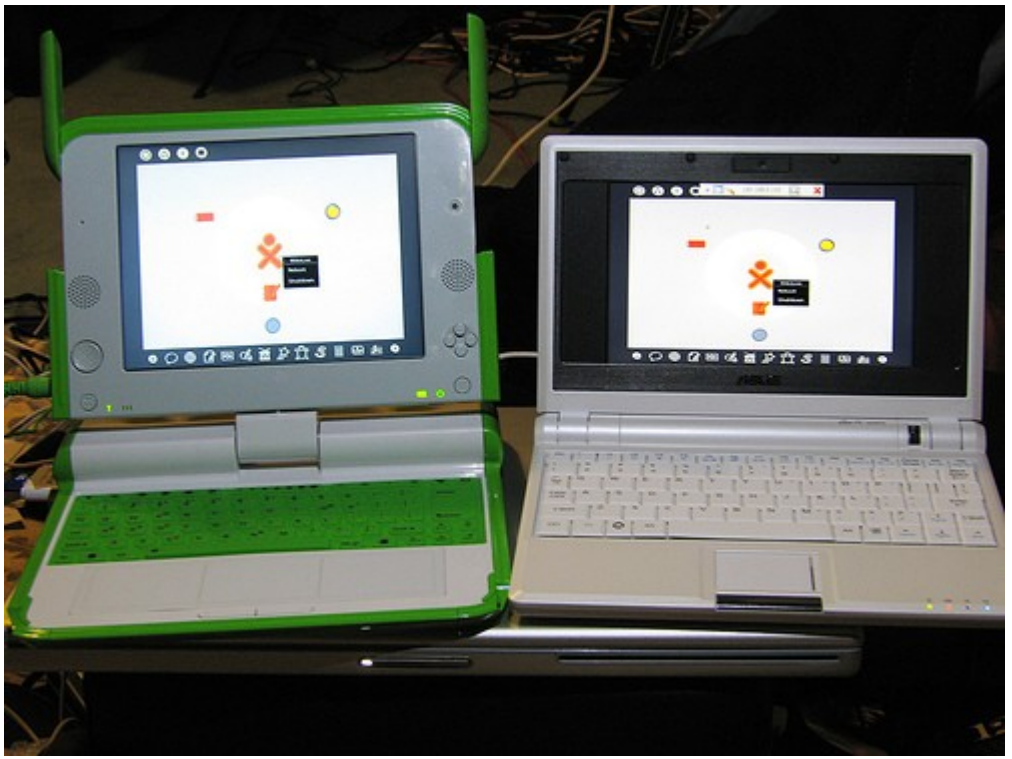
- When the project started FOSS was the only option that was flexible enough for this project
- No vendor lock-in on formats
- No royalties on redistribution
- No discrimination based on fields of endeavor

How can you help?

- Educators
  - http://wiki.laptop.org/go/Educators
- Translators
  - http://wiki.laptop.org/go/Localization
  - http://opensource.sfsu.edu/node/452
- Developers
  - http://wiki.laptop.org/go/Developer
- Getting involved
  - http://wiki.laptop.org/go/Getting_involved_in_OLPC
- Sugar
  - http://sugarlabs.org

SugarLabs

- http://sugarlabs.org/
- An effort to take Sugar to a wider audience
- PCs
- School labs
- Laptops
- Netbooks



http://flickr.com/photos/48600098314@N01/1949245574

Mailing lists

- Educators
  - http://lists.laptop.org/listinfo/educators
- Software Developers
  - General development
    - http://lists.laptop.org/listinfo/devel
  - Sugar UI
    - http://lists.laptop.org/listinfo/sugar

All mailing lists are at http://lists.laptop.org/listinfo/

Community lists

- Everyone
  - http://lists.laptop.org/listinfo/grassroots
  - http://lists.laptop.org/listinfo/olpc-open
- OLPC Jamaica
  - http://lists.laptop.org/listinfo/olpc-jamaica

OLPC and UWI community

- Why community matters
  - Local interest group
    - UWI and around
  - Volunteers
    - UWI staff, students and private citizens
  - Ownership
- Points of Focus
    - Technology (Hardware, Software, Networks)
    - Outreach (Community, Universities,Private citizens)
    - Educational Technology (Schools, Publishers, etc.)

OLPC Jamaica

- Mailing list
  - http://lists.laptop.org/listinfo/olpc-jamaica
- Wiki
  - http://wiki.laptop.org/go/OLPC_Jamaica