internet sans fil gratuit

île sans fil
www.ilesansfil.org

free wireless internet

Developing a wireless community group: a social and technical perspective.

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Different kinds of wireless group?

- Hotspots:
  - Venues (public spaces) -austin, nyc
  - Individuals (residences) -nyc
- Mesh:
  - Urban -SeattleWireless
  - Rural

History of ISF

Mission of ISF

A) Promoting wireless networks in Montreal
   -Hotspots
   -Mesh
B) Creating community through new technology

Projects

- Hotspots in Cafes/Pubs/Restaurants
- Individuals setting up hotspots
- Partnerships with other groups (PAC's, merchant's associations, festivals, government, etc)
- Mesh
- WifiGuardog
- Creating Hardware
- Hacking the Linksys wrt54g
- Community building (aka: empowering third spaces)
- Helping support other wireless groups

Part 1: The social aspect

Empowering Communities

1. Taking computer usage from the basement / home office to the neighborhood haunt.
2. There are three places in peoples lives; the place they live, the place they work, and the place they gather (site specific community portals)
3. Giving people tools to interact at our hotspots (they shouldn't be using the computers in exactly the same ways as at home)

Community Building

- Local Portal
  - Part controlled by venue (sales point), and part by ISF (possible source of funding)
  - Key point: strength of wifi = weakness of wifi
    - Limited to a geographical area
- Interaction
  - Location-based IM, gaming, sharing audio streams, etc. (interesting applications not yet developed -Rendezvous)

Wireless Group

=

1/2 open source project

+

1/2 Grassroots community project

Non-technical side

- Wireless community groups require a lot of non-technical work:
  - 2 choices (get techies to do it, or find non-techies. If use non-techies, must transmit open source values to them)
- Sales
- Advertising
- Legal
- Media contact
- Volunteer recruitment
- Overall administration of group

Volunteer Recruitment

1. Set up a hotspot ASAP and have regular meetings there.
2. Get the word out to geeks (LUG's, contacts, etc) (worry about finding non-geeks after)
3. Start up a WUG (aka: bait and switch)

Volunteer Retainment

- Why do we volunteer? (And why come to BSDCan)?
  - Sharing technical information
  - Social
  - Professional networking
  - making a difference (locally)
- Key Points:
  - Minimize bureaucracy
  - Minimize hierarchy (balanced with keeping efficient)
  - Keep OSS values dominant

Finding a Balance

- Task based
- Flat hierarchy
- You want it, you do it
- Choices made only on merit of idea.
- No FT
- Transparency

- Role based
- Bureaucracy
- Lots of discussion

- Consensus

- Lots of FT
- Nope

Economic context of wireless in Montreal

- Île sans fil's free service is competing with several commercial services for mind and market share of commercial venues:
- Tadaa wireless
- Videotron
- Telus

Separating Utopia from Reality

- Utopia
  - Internet access is free
  - Hotspots require no support
  - Clever hacks to fix problems on each hotspot is a good idea
  - Volunteers require no management

- Reality
  - Providing Internet access costs real $
  - Hotspots do not self-manage...
  - For support to scale, standardization is essential
  - Leadership is essential

The human aspects of technical work

- If all this is so simple, why has no one done it?
  - Ego: Academic and OSS projects do not always finish their work, and trying to put down the efforts of other groups
  - Attention span: Groups declaring victory after their first ping

Managing unrealistic expectations

- Managing expectations for development speed is hard.
- Lots of work can get done in " weekend of coding" , but how many weekends a months will volunteers actually commit to this?
- How many of those weekends are as productive as you hoped?

In managing volunteers really so different?

- For things to move forward, priorities have to be set as a group
- You have to estimate how much developer time you truly have at your disposal
- You have to keep your developers motivated
- There really IS management overhead, even in an OSS project.

OSS development with frequent face time

- More motivating because you can efficiently discuss issues, and more easily tap on the knowledge of others
- Developers like to talk even more than they like to code...
- Helps keep egos in check and cut down on childish behavior
- Helps consensus building
- Dealing with paid vs non-paid developers is more difficult

Supporting Hotspots with volunteers

- Volunteer time is a precious and limited commodity
- Hardware and software configuration must be standardized to reduce support needs
- Fighting the urge for the brilliant "quick fix" is difficult

Volunteer time

- Your most experienced volunteers are often the most busy, be appreciative for time they do give
- Your least experienced volunteers want to learn, always respect their work. What might have taken you a few hours might have taken them days of hard work.
- Watch out for volunteer burnout

Relations with other groups

- Community
  - Communautique
  - Mobile digital commons
- Technical
  - Universities
  - OpenWRT
- Government
  - Burrough
  - City
  - Provincial
  - Federal

Part 2: The technical challenges
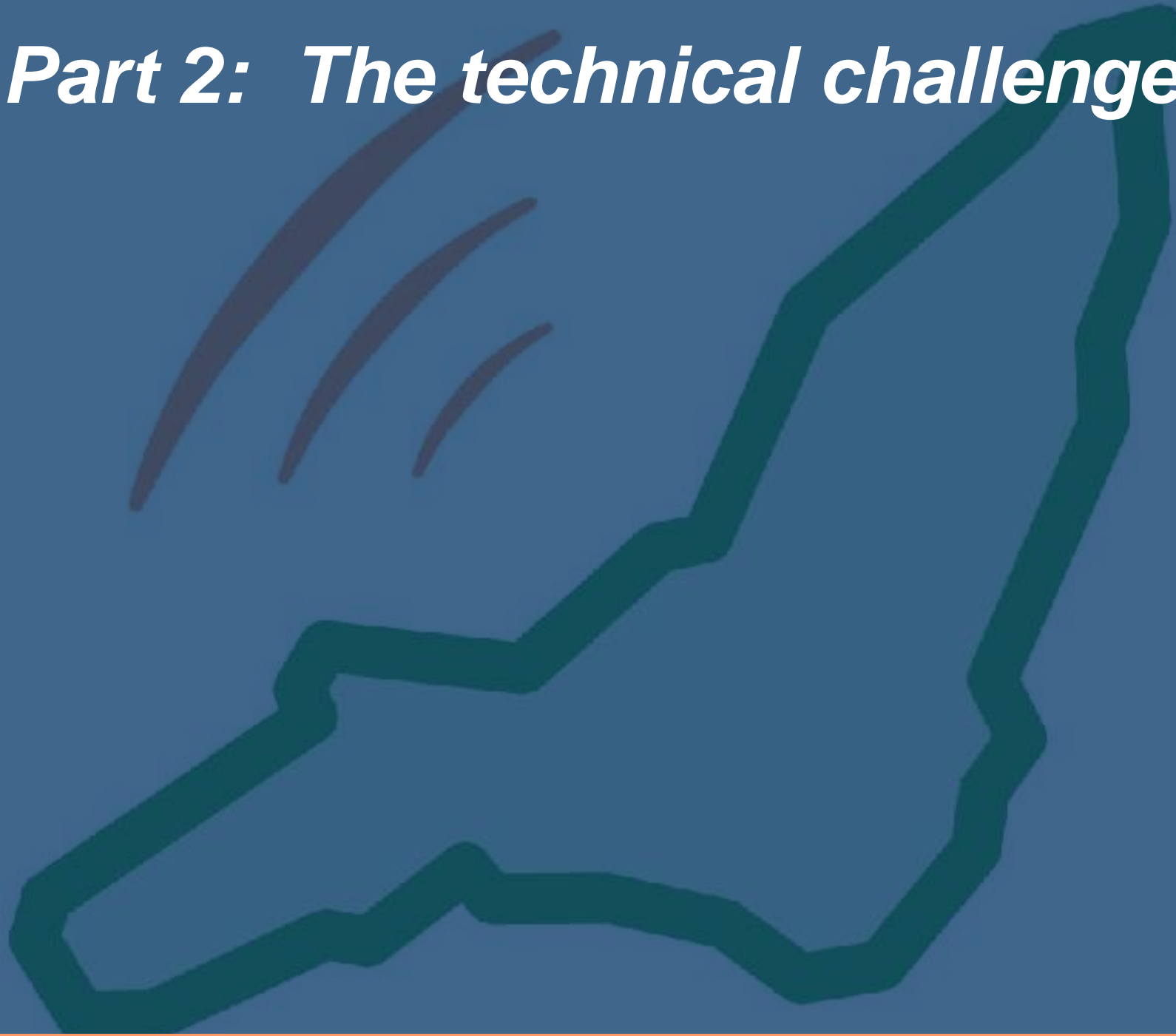
Hardware: The options

- Hardware: Coming up with an inexpensive simple and reliable solution
- The options
  - Obsolete PCs (Current solution)
  - Embedded platforms (Off the shelf and home grown)
  - Open node
  - Hacked access points

Hardware: Obsolete PCs

- The currently deployed solution for ISF
- 3 components:
  - Obsolete PCs running Pebble Linux (no hissing please;)
  - External wireless access points
  - External wired router if necessary

Hardware: Obsolete PCs

- Pros:
  - Relatively inexpensive (200-275$ depending if you need an external wired router)
  - Mass storage is available for local content
- Cons:
  - Non standardized
  - Not so reliable
  - Bulky
  - Tend to be turned off by employees
  - Requires several discrete hardware
  - Most wired routers are very UNreliable.

Hardware: Embedded platforms

- Still under consideration by ISF
- A prototype using a board from Soekris Engineering works flawlessly
- Design of our own PCB has started (Bruce Given)

Hardware: Embedded platforms

- Pros:
  - Reliable
  - Tailored for our needs and flexible
  - Standardization
  - Small form factor
- Cons:
  - Expensive off the shelf (500 CAD+)
  - Cannot support a separate local LAN in a standard configuration.

Hardware: Open Node

- Pros:
  - Only needs a standard access point
- Cons:
  - No access control
  - No opportunity for interesting community applications
  - Inflexible
  - Boring project for techies...

Hardware: Hacked access point

- Currently the direction ISF is heading to
- Hardware platform is the Linksys WRT54g (200 Mhz MIPS, 16M RAM, 4 meg flash)
- OS is OpenWRT, a barebones linux system (kernel, busybox, ipkg)
- Still some licensing issues, especially for the wireless driver.

Hardware: Hacked access point

- Pros:
  - Inexpensive (120$)
  - Standardized and easily replaced
  - Plenty of Ethernet ports
  - Hardware is reliable
- Cons:
  - Very limited RAM and mass storage
  - Unproven
  - Much still need to be developed

Software

- Security, network management, content delivery, captive portal and social software, node monitoring all require development or integration.
- Major efforts include:
  - WifiDog gateway
  - WifiDog auth server
  - OpenWRT integration
  - MESH routing

Software: WifiDog captive portal

- What's a captive portal
- Predecessors and their shortcomings
- Architecture
- Current status
- Flow of information
- Cryptography: Only use what is needed, to avoid complexity and a false sense of security

Software: Mapping

- Necessary for finding nodes and growing the network
- Location based services

The MESH aka The Goat aka the Montreal MAN

- Project goals
- Mesh routing
- The true range of Wifi equipment in a urban environment.
- Range testing
- Network organization and protocol design