

Open Hardware Business Models

- History
- Motivation
- How Open Hardware works (for us)
- What doesn't work
- How Open is Open Hardware
- Extreme Open Hardware

History

- Background:
 - Computer Telephony HW/SW Development
 - Small Business
 - Hardest thing I ever did was business
- Late 2005 I discovered Blackfin uClinux and the Open Hardware idea
- Free Telephony Project
- My income is from open hardware products

Motivation

- Social Entrepreneur/Nerd Values
- Fascination with technology
- Business

We act for material gain, but also for psychological well-being and gratification, and for social connectedness.

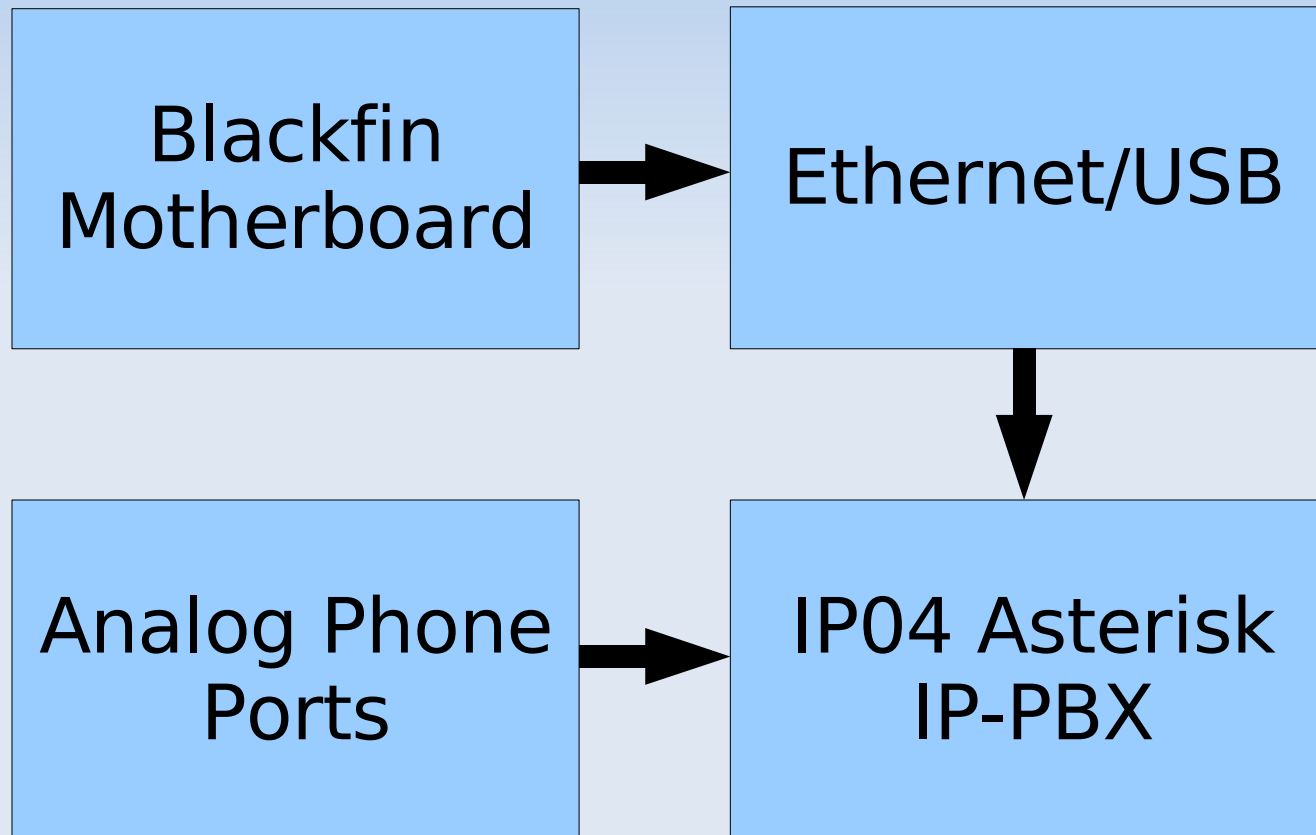
— Yochai Benkler

The Wealth of Networks (2006)

How Open Hardware Works

- Case Study – IP04 IP-PBX
- 4 port embedded IP-PBX running Asterisk, e.g. for SOHO applications
- Evolved from two other open hardware projects, collaborative development using Open Source Tools and CVS
- Partnership with Atcom, volume production
- Effective competitor with traditional closed models

IP04 Development



What Works - Business

- derivative designs and tweaking
- incredibly efficient development
- Branding and Reputation
- being good to your customers
- finding a niche
- value add
- Just like open source software when one part is “free” the value migrates (Clayton Christensen) however our world is better

What Works - Technical

- Peer Review
- Many eyes
- Wealth of open source software
- Hardware vendors dirty little secret:
hardware products are 95% software

What Doesn't Work

- Cloning (me too business models)
- Regular business traps, e.g. technology focus, cost, lack of support, distribution issues.
- Technical: Open Source CAD tools immature
- Community: a community developed product requires a community approach to business functions like support

Open Hardware is Hard to Grok

- Won't people just copy my product?
- Big paradigm shift from flashing a commodity product to designing your own hardware
- It's not that hard (small teams)

How Open is Open Hardware

- Atoms cost more than bits
- Schematic, documentation, PCB, Mechanical design
- Open Schematic and PCB CAD files, blogging
- Schematic common thread (PCBs and tooling closed)
- Not an interesting question for me. For volume production investment is always required (tooling, time)

Extreme Open Hardware

- Step away from $SP = 5 \times COM$ (OLPC)
- Connecting developing countries
- Non-commercial business models
- volume production at cost price by NGOs
- local manufacture
- customisation for local conditions