

Open Source Products

Partnering with Hardware Companies
for Open Source

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- The Problem – commodity hardware
- The Solution – build your own hardware!
- Case Study - Free Telephony Project
- Case Study – OLPC
- Case Study – Mesh Potato
- Lessons learned

The Problem

- You are a FOSS developer with a cool (embedded) app, but are stuck with commodity, off the shelf hardware
- too expensive
- wrong peripherals, not enough memory
- manufacturer discontinues your target platform
- lack the control you enjoy with software

Solution – Build your own hardware!

- The value in today's hardware is the software
- Consider a typical router – 100 man years+ of Linux software
- Few man months of hardware development
- Software developers should be defining and controlling hardware development – not the other way around!

Free Telephony Project

- David Rowe – telephony hacker in a home office, Adelaide, South Australia
- Building on existing open hardware and software from a community of FOSS developers
- Had a prototype IP-PBX
- One day, David had an email from a managing director of Atcom (Peter Sun).....

ATCOM

- Medium size VOIP hardware product company in Shenzhen, China
- 11 years in operation, over one million telephony ports shipped.
- IP Phones, USB phone, ATA, IP PBX, PCI telephony cards, GSM/ISDN products

ATCOM Products



To produce the IP04:

- Asterisk IP-PBX using Blackfin CPU
- Open hardware/Open software design
- runs uClinux, open source DSP code, Asterisk
- has lead to IP01/IP02/IP08.....
- Thousands of units shipped
- in use around the world as SOHO IP-PBX

IP04



OLPC



- A stepping stone between David's work and fully proprietary hardware
- FOSS firmware, operating system
- Engineers who write the code contribute to low level design
 - XO-1.5, engineers discovered they didn't have full control over the SD slots
 - They tweaked the layout in the next iteration of the hardware to solve their issue instead of using software hacks

Mesh Potato

- villagetelco.org needed custom hardware
- combined Wifi router and Analog Telephony Adaptor (ATA)
- So they teamed with ATCOM and built the Mesh Potato!



Benefits

- Atcom are experts at low cost, volume manufacture.
- but need help with software development
- FOSS developers have great software skills.
- Each partner solves the problems of the other
- Income for FOSS developers – self funded hacking!
- Hardware for open source is **a good thing** and makes the world a better place

Lessons Learned

- The partnership is good for open source and good for Atcom (profitable new product lines).
- It's not a free ride to perfect products. Basic business and product principles still apply.
- Trust and honesty are important.
- Patience to work around language and cross cultural issues.

ATCOM wants more Open Source Products!

- Very positive experience with open source
- Would like to work with more open source projects
- not limited to VOIP and telephony
- contact Edwin Chen
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- Open source products are good for FOSS, good for us to use and good for hardware manufacturers