

Building Commercial Products based on Open Source Software

~ Lessons Learned and Ongoing Challenges ~

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Open Source Software Operations

Commercial Product – Internet Tablet

- NOKIA 770

- GNU/Linux based
- Hi-Res LCD
- Wi-Fi, Bluetooth
- Web, VoIP, IM, MM



- NOKIA N800

- Better Performance
- Video Call
- Skype
- Flash9



SW team behind the Internet Tablet – NOKIA OSSO

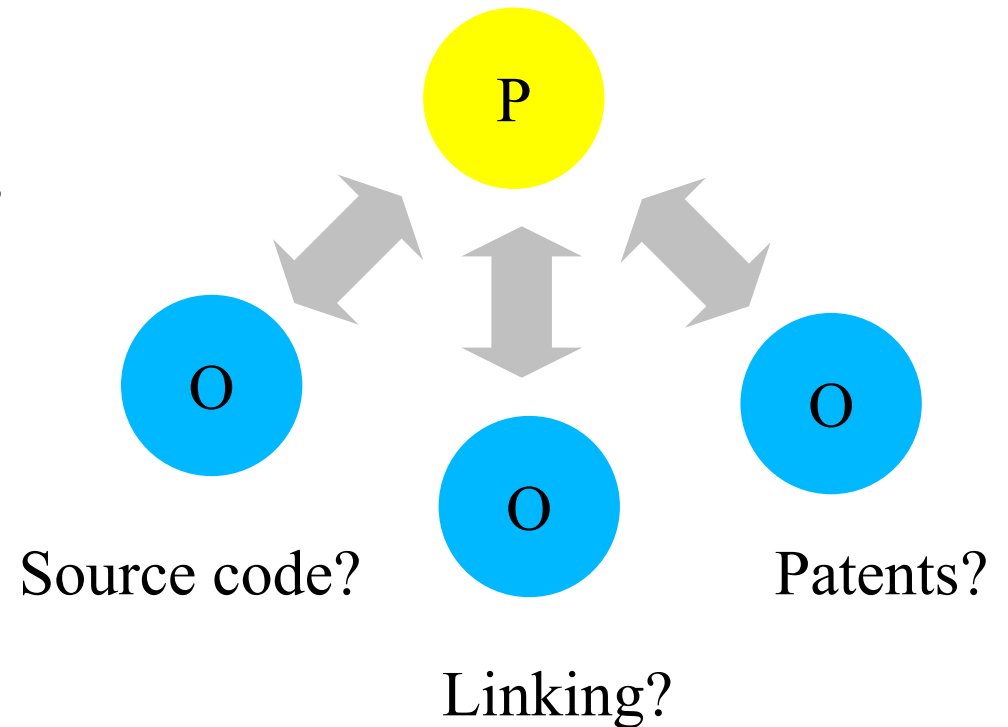
- Create an open source and Linux based software platform for NOKIA's handheld devices.
- Support Internet without any excuses, deliver the best Mobile Computer platform.

Multimedia team in OSSO

- **Multimedia File Format**
 - 3GP, MP4, AVI, MPG, ASF
- **Audio Codecs**
 - MPEG4-AAC, MP2, MP3, WMA, RA
- **Video Codecs**
 - MPEG1, MPEG4-SP, H263, RV
- **VoIP Codecs**
 - iLBC, G711, G729
- **Streaming Technologies**
 - HTTP/RTSP streaming
- **Hardware Accelerations**
 - DSP software
- **Audio Enhancements**
 - Eq., DRC, VoIP enhancements
- **Policy Management**
 - Handling Audio Priorities
- **Headset**
 - Audio data routing

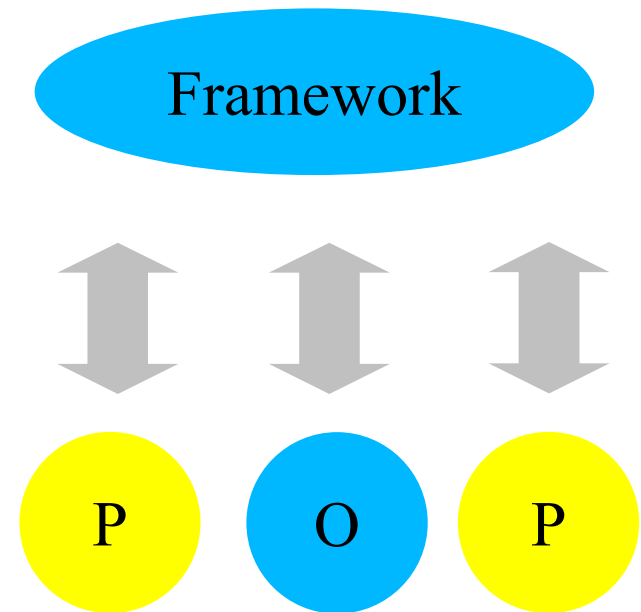
Product program meets OSS – Software License

- Various Software components
 - Different Proprietary licenses
 - Different Open source software licenses



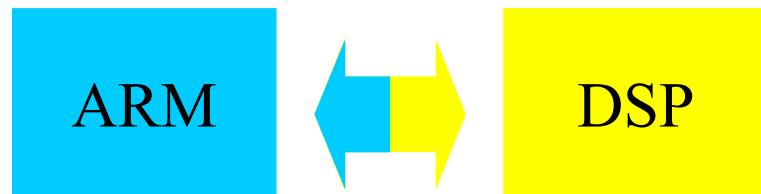
Product program meets OSS – Software License (cont.)

- In Multimedia
 - multiple technologies depending on each other
 - highly patented
- Deployed modular MM architecture
 - 1 technology – 1 plugin – 1 license
 - Effectively mix multiple functions



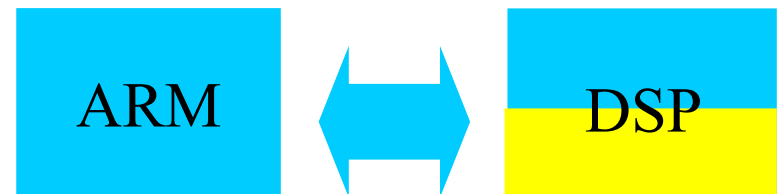
Product program meets OSS – Mobile Hardware

- No ready-made Linux solution
- Vendor
 - Half open bridge
 - DSP is closed



Vendor

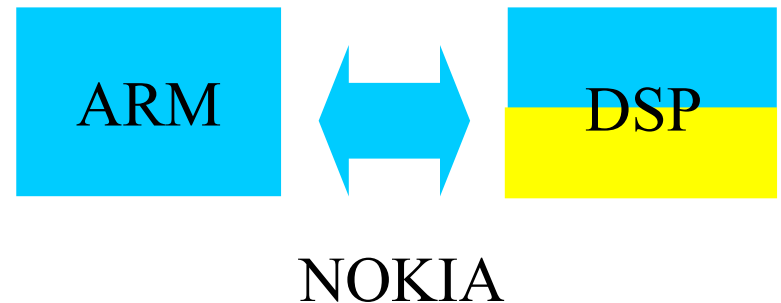
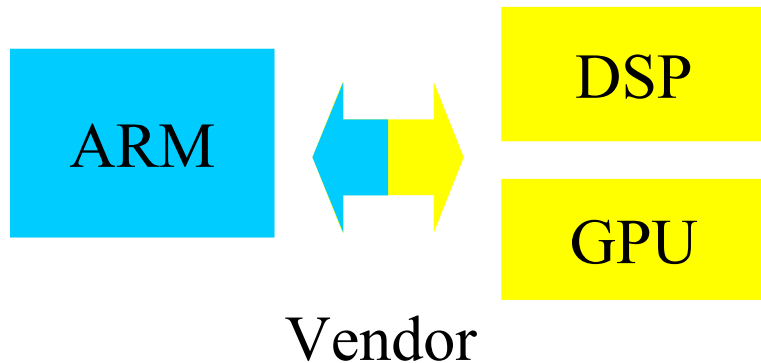
- Nokia
 - Open Source Bridge
 - DSP software development is possible



NOKIA

Product program meets OSS – Mobile Hardware (cont.)

- Problems
 - Creating a strong community was difficult
 - Not so much help from the community or from the vendor
 - The 3rd core was accessible only through proprietary bridge
- Lessons learned
 - What does it take to establish a strong community??
 - Could have talked to the vendor and shared consensus

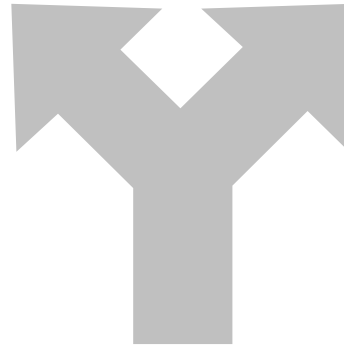


Product program meets OSS - The Community

Timeline?

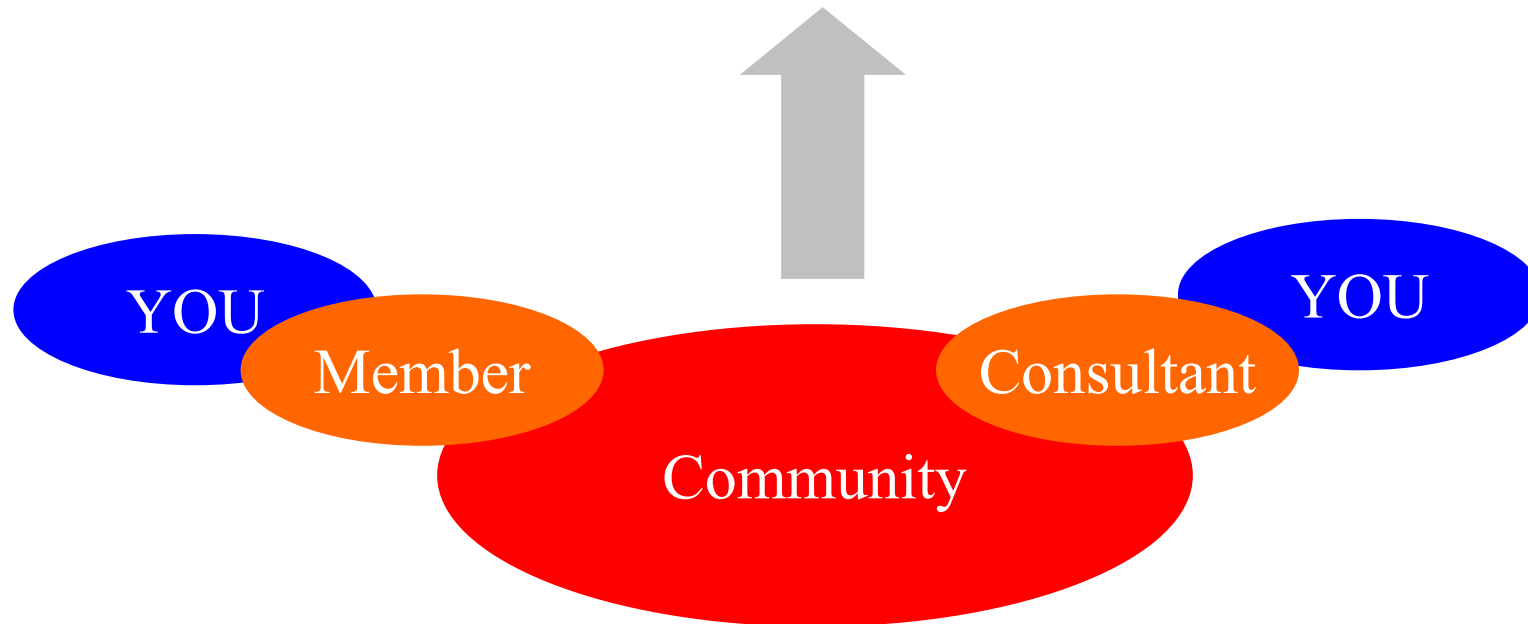
Where?

Priority?



Product program meets OSS - The Community (cont.)

- Show the respect & understand the rules
- Hire people from the community
- Consulting agreement with the community based companies



Summary

- Have a good architecture to make the best of Hybrid system
- Creating a strong community requires careful thoughts
- There are multiple ways to interact with the community

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