The Open Source Business Model
And Your Consulting Practice

Wade D. Peterson
Silicore Corporation
www.silicore.net

Copyright (C) 2003 Silicore Corporation. Verbatim copying and distribution of this presentation in any medium is permitted, provided this notice is preserved

6 Dec 2003
Motivation

- The open source business model offers several advantages to the consulting business:
  - Expanded service offerings.
  - Cost reductions.
  - Retention of some intellectual property (IP) rights, even when operating under *Works Made for Hire* engagements.
Silicore’s involvement with the open source business model

- In 1999 Silicore published WISHBONE, the first open System-on-Chip (SoC) architecture.
- It was released the same day as IBM’s Core Connect (DAC / New Orleans / June 1999).
- At that time, we offered semiconductor IP using a traditional software business model.
- WISHBONE was eventually used for on-line trading of open source SoC software.
WISHBONE

- It’s used for the construction of do-it-yourself IC chips.
- It’s a design guide for writing SoC software.
- Primarily used on FPGA (Field Programmable Gate Array) chips, but is portable to ASIC chips.
The WISHBONE technology

- WISHBONE is an enabling technology for defining portable chip systems.

- It’s a hardware system that is usually described with hardware description languages such as VHDL or Verilog.

- WISHBONE is a System-on-Chip (SoC) technology that enables an open marketplace a-la the microcomputer board industry (e.g. VMEbus, PCI).
The WISHBONE marketplace

- Originally, Silicore used WISHBONE as the back end for its VMEbus interface cores.
- WISHBONE was adopted in 2001 by the on-line group at www.opencores.org. They were creating semiconductor IP using the techniques pioneered by the GNU/Linux community.
- There are two types of software markets. I’ll call them *traditional* and *open source*.
The bargaining process in traditional software marketplaces

- The buyer is allowed to use a binary copy of the software in exchange for a monetary consideration.

- The buyer agrees not to share the software.

- Software is either sold or leased.
The bargaining process in **open source** software marketplaces

- The buyer is allowed to use a **source code** copy of the software in exchange for a non-monetary consideration.
- The buyer can modify and share the software.
- Public **copy left** licenses (e.g. GPL) return enhancements back to the community.
The software trading system at:
http://www.opencores.org

- OpenCores is an informal consortium of chip designers. They were organized in 2000 to create a semiconductor IP (software) trading system based on the GNU/Linux code sharing model.
- Jan 2001: OpenCores adopts WISHBONE
- Apr 2003: The first publicly disclosed SoC based on WISHBONE other than Silicore (VOXI/Sweden).
- They did it in 27 months…all with volunteer labor.
- The process improved WISHBONE, too.
Silicore’s move to open source

- Opencores took the GNU/Linux *software development model* and adapted it for semiconductor chip systems.

- Silicore took the GNU/Linux *business model* and adapted it for semiconductor chip systems.
The open source business model

- Under the open source business model, software is treated as a *service*, rather than as a *product*.

- This idea was first pioneered by Cygnus Solutions, Inc., and later by Red Hat, Inc. It is now used by other GNU/Linux companies.
Can you make money by giving away free software?

- Red Hat gives away software, but sells service.
- In FY 2003, Red Hat, Inc. sold $48.6 million of software that is freely available on the net.
- During the same period, they sold $42.3 million in consulting, training and code maintenance services.
- See the Red Hat 10K report at www.sec.gov.
Subscription & Service Revenues

Red Hat’s Revenue Sources

- Subscriptions to the Red Hat distribution of GNU/Linux.
- Various training courses
- Technical support
- Custom system integration
- Consulting
How Does this Relate to Consulting?

- Red Hat can also be thought of as a software consulting company.
Benefits of open source for the consultant

- Creates a marketplace where the consultant can offer new software support services.
- Dramatically lowers code protection costs.
- Community code enhancements.
- Increases traffic through the website.
- Supports ‘junkyard war’ product development…often used by start-ups.
- Retention of IP rights under works for hire.
Benefits of open source for the client

- Free semiconductor IP with immediate access.
- Only pays the *value added* development costs.
- Buy their chips in a reverse auction marketplace.
- Dramatically simpler licensing.
- Spend less time & money on licensing & lawyers.
- Better system security (through visibility).
- Less parts obsolescence.
- Better long term system solution (bug fixes, etc.).
The early WISHBONE adopters were innovative start up companies. These are companies who manage projects much like a *junkyard war*. In the junkyard war, the winners are the ones with the best people and the best junkyards. The best software junkyards are found on the network.
Intellectual property management

- Open source solves some difficult intellectual property issues for the consultant.
- Many consultants have their own software tools.
- Enhancements to these tools can be lost to the client under *Works Made for Hire* engagements.
- Open source licensing lets the consultant retain non-exclusive rights to the derivative code.
- Shortly, we’ll see how this works on Mozilla (Netscape’s open source web browser under GNU/Linux).
I’m going to talk about open source licensing.
I’m not a lawyer.
I’m not giving you any legal advice.
Don’t do anything stupid…like listening to me without talking to your lawyer first.
GNU/Linux software

● Some of the GNU/Linux ‘killer applications’:
  – GNU/Linux kernel
  – Apache server (used by 60% of internet servers).
  – Mozilla (formerly the Netscape browser).
  – StarOffice (Sun Microsystems).

● These are maintained by a consortium of users under public licensing.
Public licensing

- Under most public licensing, the creator of the software owns the copyrighted works.
- Three good examples of public licenses:
  - GPL: General Public License
  - LGPL: Lesser (Library) General Public License
  - BSD: Simple indemnification
- If copyleft is used, then derivatives are returned to the public.
- Open Source Initiative (OSI) & Open Source Definition (OSD) at: www.opensource.org
Maintaining IP under Works Made For Hire (USC title 17 / copyright)

- Works Made For Hire (WMFH) is a ‘bargain’ enforced under US Code. There, the copyright works is exchanged for some consideration (e.g. money).
- There is no grandfather clause in WMFH.
- The open source copyleft gives the consultant a lot more leverage when negotiating the IP deal.
- The IP deal can be done anytime.
- The IP deal is always for non-exclusive code.
- The copyright holder can offer dual licensing.
The Mozilla example

- Netscape released Mozilla as an open source version of its web browser.
- This was a countermeasure to Microsoft’s Internet Explorer – which it gave away with its Windows® operating system.
- Created a second life for Netscape software.
Mozilla as open source code

- Released with a copyleft provision under the Mozilla Public License (MPL).
- Others can use, share and enhance Mozilla under the terms of the MPL.
- A great example is Apple Computer’s Safari Web Browser…a derivative of Mozilla.
- Apple got an excellent web browser for just pennies on the dollar (value added costs).
Mozilla code enhancements

- A software consultant who maintains Mozilla code can do the engagement under Works Made for Hire (WMFH).
- At the end of the engagement, the client owns all code enhancements. However, they have to abide by the copyleft provision in the Mozilla license.
- This means that the enhanced software is made available to the consultant for their next engagement with another company.
Bibliography

