The Open Source Business Model And Your Consulting Practice

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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 Program-mable 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 <u>traditional</u> software marketplaces

- The buyer is allowed to use a <u>binary</u> 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 For Red Hat, Inc (1999 – 2003)
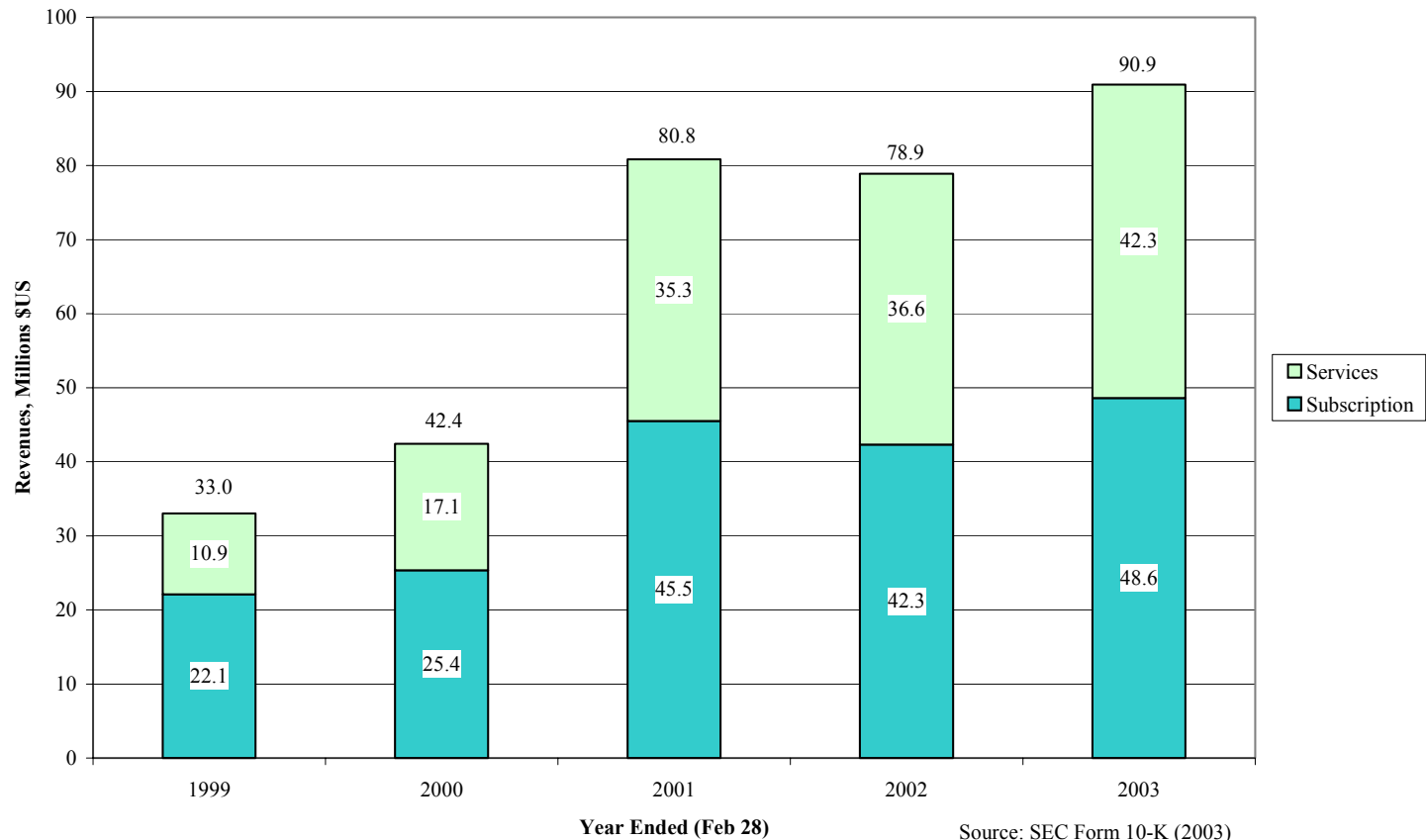
Red Hat's Revenue Sources

- 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.).

Junkyard wars, project management and innovation

- 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).

My big fat legal disclaimer

- 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 kernal
  - 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

- Fink, Martin. <u>The Business and Economics of Linux and Open Source</u> 2003 Prentice Hall PTR. ISBN: 0-13-047677-3

- Red Hat, Inc. *US Securities and Exchange Commission (SEC) Form 10-K Annual report dated 28 Feb, 2003*. Available from the SEC website at: <u>www.sec.gov</u>.

- Young, Robert. *Giving It Away: How Red Hat Software Stumbled Across a New Economic Model and Helped Improve an Industry.* Article appears in: <u>Voices from the Open Source Revolution</u>. 1999 O-Reilly & Associates. ISBN: 1-56592-582-3. Also available on-line at: <u>www.press.umich.edu/jep/04-03/young.html</u>