



The Business of Open Source

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What is Open Source Software?

- Software where everyone has access to the source code for the executable program
 - Compilable or interpreted programming language
 - Scripts, libraries and everything needed to run program
- Software that is licensed under a mechanism that defines appropriate uses for the program and the rules for distributing changes to the source code
- Software supported by a community of interest, including source code committers



Free and Open Source Software

- BSD Unix as catalyst for commercial open source
- Free Software Foundation
 - Social, political, and economic movement, not just technical
- Linux arrives (starting 1991)
- “Open Source” becomes an official term (1998)
 - Governance and licensing issues for development and distribution
 - Formal organizations to promote open source development and use (e.g., Apache Software Foundation)
 - Commercialization of Linux (RedHat, SuSE, many others)
 - Companies to distribute, support, develop open source software
- Venture funding of open source companies

Open Source is Everywhere



- Infrastructure
 - Web server, application server, DBMS, content management systems, web browsers, email servers and clients, portal development, collaboration tools, operating system
- Application development
 - Modeling, compilers, development environments, testing, issue tracking, version control, configuration management, project management, installers
- Applications
 - Finance, CRM, SFA, vertical apps, image management, drawing, audio/video

What drives commercialization?



- Growing acceptance of leading open source products
(Linux, Apache, Firefox, JBoss, Eclipse)
- Relatively high quality of leading open source products
- User unhappiness with traditional software and fee structures



Open source business models – ≥ 9 kinds



- **Subscription models** for updated versions of open source products
- **Support and training model** with books, courses
- **Packaging model** to integrate open source software into a product stack
- **Hosted model** to provide an online service based on open source
- **Dual license model** to offer free and licensed versions
- **Patronage model** to drive open standards and other company businesses
- **Commercial enhancement model** building on open source
- **Consulting strategy** offering services for open source products
- **Reseller model** offering free and open source products



Examples of various business models

- **Subscription models** – RedHat, Novell, SpikeSource
- **Support and training model** - Covalent, O'Reilly
- **Packaging model** - SugarCRM, OpenLogic
- **Hosted model** - Google, Yahoo, SugarCRM
- **Dual license model** - MySQL
- **Patronage model** - IBM
- **Commercial enhancement model** - RedHat, Novell, Oracle
- **Consulting strategy**- Accenture, IBM
- **Reseller model** - Many groups around the world



Business Obstacles to FOSS Adoption

- Management fear and uncertainty
- Different style of doing business
- OS software not on IT-approved list
- Effective prevention by commercial vendors
- Concerns about support and training
- Missing or inferior features/functionality compared to commercial products
- Licensing and litigation concerns



Spectrum of Projects



Increasing commercialization





Implications for research community

- Ability to use same software as being used in industry
- Vast body of code for analysis and case studies
- Better opportunity to have research-originated projects adopted by industry
- Better understanding of what is required to gain widespread adoption
- FOSS goes mainstream

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