The Business of Open Source

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Observation

As long as there has been software, there has been free and open source software

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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 (Part I)

Early days of computing

Much software developed in public domain

No market for commercial software

Too many different machines and languages to be very useful

AT&T Unix (1974) and Berkeley Unix (1978-83)

Licensed in source code form to many non-profit institutions at very low cost ($500 US)

US Department of Defense funded UC Berkeley to develop Unix further (porting to VAX, virtual memory, etc.)

UC Berkeley distributes BSD Unix in source form; commercial use requires a commercial license from AT&T ($44,000)

Free and Open Source Software (Part II)

- BSD Unix as catalyst for additional development
- BSD license allows use of BSD software in commercial products
- Sun Microsystems uses BSD Unix (1982) and later closes it for SunOS and Solaris
- Other software distributed using BSD licensing terms
- BSD Unix used in almost every top US computer science department
- Free Software Foundation
- Richard Stallman, MIT
- GNU as response to Unix (GNU is Not Unix)
- FSF created GPL (1985)
- Social, political, and economic movement, not just technical

Free and Open Source Software (Part III)

- Linux arrives (starting 1991)
- “Open Source” becomes an official term (1998)
- Distinguished from “Free” to enable commercialization
- 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

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Open Source is Everywhere (even on Windows™)

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

The State of Open Source Software

- Complete platform and infrastructure support available
- Extensive range of development and collaboration tools
- Growing support and service offerings
- Wide acceptance by developers
- Slower adoption by large corporate IT organizations
- Entrepreneurs and investors creating commercial businesses around open source software

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Open source business models – ≥ 10 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

Advertising model to obtain revenue from displaying ads

Patronage model to drive open standards and other company businesses

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Commercial enhancement model building on open

Examples of various business models

Subscription models – RedHat, Novell, Canonical

Support and training model – SpringSource, O'Reilly

Packaging model – SugarCRM, OpenLogic

Hosted model – Google, Yahoo, SugarCRM

Dual license model – MySQL

Advertising model - Google

Patronage model – IBM, Sun

Commercial enhancement model – RedHat, Novell, Oracle

Consulting strategy- Accenture, IBM, Wipro

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

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Evaluation Issues for Company Adoption of Open Source Software

- Licensing issues
- Fitness for use (functions, usability, performance, ...)
- Comparison with commercial products
- Product quality
- Support and training
- Corporate IT policies concerning use of open source
- Management of updates
- Integration with other software

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

Business Readiness Rating

An open framework for evaluating the readiness of open source software, with evaluation criteria divided into 7 categories

Functionality

Operational Software Characteristics

Documentation

Service and Support

Software Technology Attributes

Adoption

Development Process

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Spectrum of Projects

Increasing commercialization

Pure Research	Stable project	Foundation-based project	Third-party commercial support	Vendor developed and supported

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The OpenBRR project

Community-based effort to develop and enhance BRR

Volunteer-based activities

Define functional capabilities for different software categories

Build tools to support evaluation process

Contribute evaluations

Review the draft framework

Contribute to discussion forums

How to get started

Register at http://openbrr.org

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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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Socioeconomic Issues

Open source changes the business model for software companies: no license revenue

Open source lowers barriers to entry for people in developing countries: no money sent to vendors in advanced economies

Industry becomes more geographically and economically distributed