Open Source: It’s just not for IT anymore!

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AGENDA

- Introduction
- What is the ASF
- What exactly is “Open Source”
- The Lessons Learned by the ASF
Introduction

Jim Jagielski
- Longest still-active developer/contributor
- Co-founder of the ASF
- Member, Director and President
- Director: Outercurve and OSI
- Sr. Consulting Engineer with Red Hat
The ASF

- ASF == The Apache Software Foundation
- Before the ASF there was “The Apache Group”
- The ASF was incorporated in 1999
The ASF

- Non-profit corporation founded in 1999
- 501(c)3 charity
- Volunteer organization
- Virtual world-wide organization
- Exists to provide the organizational, legal, and financial support for various OSS projects
Structure of the ASF - legal

- Member-based corporation - individuals only
- Members nominate and elect new members
- Members elect a board - 9 seats
- Semi-annual meetings via IRC
- Each PMC has a Chair - eyes and ears of the board (oversight only)
ISSUES WITH DUAL STACKS

✦ Despite clear differentiation, sometimes there are leaks

✦ eg: PMC chair seen as “lead” developer

✦ Sometimes officers are assumed to have too much power if they venture into development issues

✦ “hats”
The ASF’s Mission

- Provide open source software to the public free of charge
- Provide a foundation for open, collaborative software development projects by supplying hardware, communication, and business infrastructure
- Create an independent legal entity to which companies and individuals can donate resources and be assured that those resources will be used for the public benefit
The ASF’s Mission

- Provide a means for individual volunteers to be sheltered from legal suits directed at the Foundation’s projects

- Protect the ‘Apache’ brand, as applied to its software products, from being abused by other organizations

- Provide legal and technical infrastructure for open source software development and to perform appropriate oversight of such software
Vision Statement

The Apache Software Foundation provides support for the Apache community of open-source software projects. The Apache projects are characterized by a collaborative, consensus based development process, an open and pragmatic software license, and a desire to create high quality software that leads the way in its field. We consider ourselves not simply a group of projects sharing a server, but rather a community of developers and users.
Vision Statement, Take 2

- Community created code
- Our code should be exceptional
Why Open Source?

- Access to the source code
- Avoid vendor lock-in (or worse!)
- Much better software
- Better security record (more eyes)
- Much more nimble development - frequent releases
- Direct user input
The draw of Open Source

- Having a real impact in the development and direction of IT
- Personal satisfaction: I wrote that!
- Sense of membership in a community
- Sense of accomplishment - very quick turnaround times
- Developers and engineers love to tinker - huge opportunity to do so
Open Source FUD

- No quality or quality control
- Prevents or slows development
- Have to “give it away for free”
- No real innovation
What is Open Source?

- Open Source Licensing
- OSI Approved
- Free Software
- As in Free Speech, not Free Beer
- Open Source Methodology (secondary)
- ala, the Apache Software Foundation
What is Open Source?

- Basically, it’s a “new” way to develop, license and distribute code

- Actually, there was “open source” even before it was called that

- The key technologies behind the Internet and the Web and the Cloud are all Open Source based
For software to be Open Source, it must be under an OSI approved Open Source License

At last count, over 25 exist
Open Source Licenses

- Give Me Credit
- AL, BSD, MIT
- Give Me Fixes
- (L)GPL, EPL, MPL
- Give Me Everything
- GPL

- Dave Johnson

http://rollerweblogger.org/page/roller?entry=gimme_credit_gimme_fixes_gimmem
The Apache License (AL)

- A liberal open source software license - BSD-like
- Business friendly
- Requires attribution
- Includes Patent Grant
- Easily reused by other projects & organizations
MPL / EPL / (L)GPL

- Used mostly with platforms or libraries
- Protects the licensed code, but allows larger derivative works with different licensing
- Still very business friendly
Give Me Everything

 GPL (copyleft)

 Derivative works also under GPL

 Linked works could also be under GPL

 Viral nature may likely limit adoption

 GPL trumps all others or else incompatible
License Differences

- Mainly involve the licensing of derivative works
- Only really applies during (re)distribution of work
- Where the “freedom” should be mostly focused: the user or the code itself
**One True License**

- There is no such thing

- Licensing is selected to address what you are trying to do

- In general, Open Standards do better with AL-like license

- If wide adoption is important to you: again AL.
Although the term is deprecated, “The Apache Way” relates to how the ASF (and its projects) work and operate.

Basically, the least common denominators on how PMCs operate.
Why focus on ASF?

Open-By-Rule

Open source is about more than just licenses – it’s about pragmatic software freedom. The Open-By-Rule benchmark attempts to implement the idea of a scorecard for open source projects, and to test and improve the benchmark I’m documenting the results of the Benchmark for a number of communities.

- Organic Software: A Software Freedom Scorecard – Using just a single factor to identify the authenticity of something makes it easier for people to ‘game the system’, as both the organic food industry and the software freedom movement have found. This essay considers a proposal to update OSI from a license approval body to something with a broader vision.

- The Open-By-Rule Benchmark - Taking that Scorecard vision a step further, this article proposes a practical, ad-hoc benchmark to evaluate community openness. Submit your own ratings.
  - Apache (+10)
  - Eclipse (+8)
  - GNOME (+8)
  - LibreOffice (+5)
  - Mozilla (+6)
  - OpenJDK (-3)

http://webmink.com/essays/#OBR

http://www.zdnet.com/blog/open-source/oracle-gives-openoffice-to-apache/9035
Basic Memes

- Meritocracy
- Peer-based
- Consensus decision making
- Collaborative development
- Responsible oversight
Meritocracy

“Govern by Merit”

Merit is based on what you do

Merit never expires

Those with merit, get more responsibility

Provides incentive to Do More
Peer-based

- Developers represent themselves - individuals
- Mutual trust and respect
- All votes hold the same weight (no BDFL)
- Community created code
  - Healthy communities create healthy code
  - Poisonous communities don’t
- Feel as part of a community
Why Community -> Code

- Since we are all volunteers, people’s time and interests change

- A healthy community is “warm and inviting” and encourages a continued influx of developers

- Poisonous people/communities turn people off, and the project will die

- End result - better code, long-term code
Consensus decision making

Key is the idea of voting

- +1 - yes
- +0 - no real comment
- -1 - veto

Sometimes you’ll also see stuff like -0, -0.5, etc...
Voting

- The main intent is to gauge developer acceptance
- Vetos must be justifiable and have sound technical merit
- If valid, Vetos cannot be overruled
- Vetos are very rare
Commit Process

- Review Then Commit (RTC)
  - A patch is submitted to the project for inclusion
  - If at least 3 +1s and no -1s, code is committed
  - Good for stable branches
  - Ensures enough “eyes on the code” on a direct-to-release path
Commit Process

❖ Commit Then Review (CTR)

❖ A patch is committed directly to the code

❖ Review Process happens post commit

❖ Good for development branches

❖ Depends on people doing reviews after the fact

❖ Allows very fast development
Lazy Consensus

variant of RTC

“I plan on committing this in 3 days”

Provides opportunity for oversight, but with known “deadline”

As always, can be vetoed after the fact
Collaborative Development

- Code is developed by the community
- Voting ensures at least 3 active developers
- Development done online and on-list
  - If it didn’t happen on-list, it didn’t happen
Collaborative Development

- Mailing lists are the preferred method
  - Archived
  - Asynchronous
  - Available to anyone - public list
Collaborative Development

- Other methods are OK, if not primary
  - Wikis
  - IRC
  - F2F
- Always bring back to the list
Responsible Oversight

- Ensure license compliance
- Track IP
- Quality code
- Quality community
These concepts are not new or unique

Best practices regarding how the Scientific and Health community works
In Open Source, frequent releases indicate healthy activity.

What is collaborative s/w development other than peer review?

Think how restrictive research would be w/o open communication.
The Apache Incubator

- Entry point for all new projects and codebases
- Indoctrinates the Apache Way to the podling
- Ensures and tracks IP
Contributor License Agreement

- aka: iCLA (for individual)
- Required of all committers
- Guarantees:
  - The person has the authority to commit the code
  - That the ASF can relicense the code
- Does NOT assign copyright
Success Stories - HTTPD

- Apache HTTP Server ("Apache")
- Reference implementation of HTTP
- Most popular web server in existence
- Found in numerous commercial web servers
  - Oracle, IBM, ...
- Influenced countless more
Success Stories - HTTPD

- By having a “free” and open source reference implementation, the drive to create a separate proprietary version was reduced.

- “Why spend time and money, when we can use this”

- This allowed HTTP (and the Web) to grow and STAY usable (compare to the old browser wars)
Success Stories - Tomcat

- Apache Tomcat (Servlet Container)
  - The default standard servlet container
  - Each version maps to a specific spec.
  - Bundled with numerous Java apps out there
  - Likely a major influence on the diminishing relevance of JEE
Success Stories - Others

- Apache Geronimo (Server Framework - JEE)
  - Not “just” a JEE server
- Apache Maven (Java project build/management tool)
  - Another industry standard
- Apache Logging, Axis, Struts, ...
INTERNAL USAGE

ADVANTAGES

- Much tighter community
- Better communication (esp. with “users”)
- Tighter feedback loop
- Ready made audience
- Don’t need to “sell” the aspects of Open Source which scare/confuse IT people
Usage Gotchas

- Trust and Merit are earned, which implies time
- The available pool might be relatively small
- How to encourage external involvement
  - “scratching your own itch”
- Mentoring: lurking on lists vs. direct involvement
Some Concluding Thoughts

- Trust your developers AND your users
- Communication is key
- Open Source is NOT the Good Housekeeping Seal Of Approval
- But don’t believe in all the FUD either
- Success is not measured in market share, but in adoption
Some Concluding Thoughts

- Open Source should have a viable business or emotional reason - be realistic in expectations
- Give some thought to licensing *early*
- Make it easier for developers and users to “join”
- Give them a reason to
Helpful links

- The Apache Software Foundation
  - www.apache.org
- Red Hat, Inc (my employer)
  - www.redhat.com
- Want to help a great organization?
  - www.marylandstateboychoir.org
That's It

Thank you!

Any questions?

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