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Managing Open Source

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Open Source

Using Open Source Software is no different from using commercially licensed software.

Three Questions

- When should you use Open Source?
- How do you evaluate Open Source options?
- What do you need to consider if you do use Open Source?

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When Should You Use Open Source?

Buy vs Build

Open Source vs Buy

Open Source vs Build

Open Source vs Buy

- Examples
  - Apache Web Server
  - Geronimo, JBoss, JOnAS
  - FreeBSD, Debian, Ubuntu
- Why?
  - Onerous licensing terms
  - Often easier for developers to use
  - Meets evaluation criteria

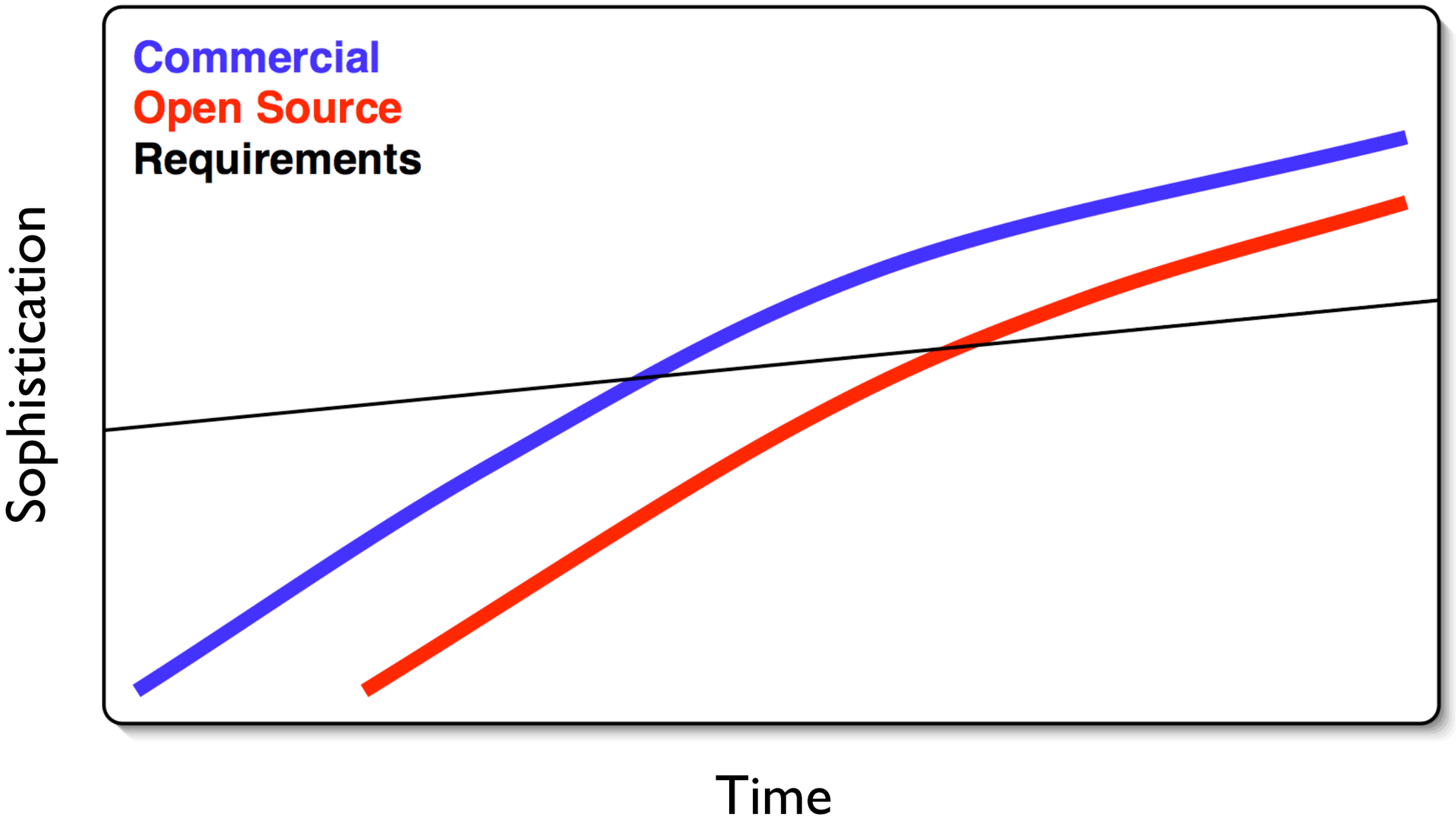
Open Source vs Buy

- Licensing Terms
  - Per-CPU licensing and many CPU's
  - Low budget project
- Reduces up-front cost

Open Source vs Buy

- Often easier for developers to use
  - Source code available
  - Usually optimized for developer productivity
  - Can fix bugs yourself and contribute back
- Sometimes this is a drawback
  - Formal separation of roles
  - Developer-oriented interfaces

Typical Feature Lineup



Open Source vs Build

- Building yourself you have
  - Design
  - Development
  - Training
  - Maintenance
- Using Open Source you have
  - Evaluation & Selection
  - Training

Quality

- Domain Specialists
  - Frequently those expensive consultants
- Embodies Best Practices
  - Wide points of view, low barrier to entry
- Widely Tested
  - And widely reviewed
- Does one thing well, with clean interfaces
  - Open Source has strong incentives here

Maintainability

- Let other people maintain components
- Updated behind your back
- Clean separation of components
- 2/3 of cost is in maintenance
  - Try to only maintain **your** core code

Bootstrapping

- Commons Based Peer Production
- Build your specifics in your system
  - Don't build what you don't have to

Open Source vs Build

- Licensing Issues
  - Ensure license is compatible with your intended use
  - If you build it, you own it

Conclusion

- Open Source vs Buy
  - Establish criteria
  - Evaluate commercial and open source under same criteria
- Open Source vs Build
  - Scope Reduction
  - Burden is choosing the right package
  - Possible maintenance costs anyway

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Evaluating Open Source Options

Project Evaluation

- Level of Investment
- Licensing
- Documentation
- Community
- Support
- Maturity

Level of Investment

- Architectural Investment
- Productivity Libraries
- Development Tools
- Infrastructure

Architectural Investment

The core design of your system relies upon the specific application, framework, or library.

Productivity Libraries

Libraries, which could be relatively easily replaced later, used to speed development of an application or system.

Development Tools

Tools used in the build, test, or configuration management process upon which the deployed application does not rely.

Infrastructure

Modular systems, used by applications, which conform to open standards and are relatively interchangeable.

Cannot Escape Licenses

- Commercial Licenses
- BSD Licenses
- LGPL License
- GPL License
- Custom (Open Source)

Commercial

- Licensing Fee
- Terms for evaluation
- May or may not receive source
- Redistribution usually subject to fees

BSD Style

- No license fee
- May change code and redistribute
- No reciprocity
- Apache, FreeBSD, PostgreSQL

LGPL

- No License Fee
- May redistribute
- Changes to library's source must be freely available
  - Limited Reciprocity
- JBoss, OpenOffice.org

GPL

- No License Fee
- May Redistribute (with restrictions)
- All sources using GPL'd code must be freely available
  - Full reciprocity
- Linux, MySQL

Other Open Source

- Many others meet Open Source Definition
- Not in common use
- Details vary, **really** need to read the license
- OpenSolaris, XFree86

Licensing Conclusions

- If in doubt, ask your lawyer
- Consider whether you are using a product or extending a product
- Consider whether you will redistribute or sell
- Establish guidelines for each license type
  - "Remember" which licenses are which

Documentation

- Primary Documentation
  - Part of the project
- Secondary Documentation
  - Books, articles
- Tertiary Documentation
  - Mailing lists, forums, blogs

Developer Community

What is more important, the developer community or state of the code?

Developer Community

- Long Term Architecture
  - Long-term viability of a project is a function of the developer community, not the existing codebase
  - Diversity and Inclusiveness
    - Reactions to new contributors
  - High Truck Numbers

Developer Community

- Short Term Need
  - Capabilities and maturity of the codebase matters more for non-architectural resources.
  - If it doesn't already solve the problem, you will have to change it until it does.

User Community

- How active?
- How diverse?
- How do they communicate?
  - Mailing lists
  - Forums
  - Conferences
- Case Studies and Success Stories

Support

- Primary (free)
  - Remember that user community?
  - Developer involvement in user lists
- Secondary (commercial)
  - Individual support from developers
  - Support and services companies

Maturity

- Versioning Guidelines
- Release Cycle
- Developer Community
- Support and Documentation

How to choose

- Create internal guidelines for selecting projects
  - Licensing
  - Documentation
  - Community
  - Support
  - Maturity
- Apply consistently to all open source
- How formal depends on situation

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When You Do Use Open Source

Guidelines for Using OSS

- Pay attention to community direction
- How to interact with the community
- When it makes sense to become a part of the community
- Building internal practices
- Re-evaluate at end of each project
- Be aware of releases and upgrades

Community Direction

- Where is the project going?
- Who is taking it there?
- What about major, incompatible, releases?

Community Interaction

- Understand Expectations
  - Where to ask for help
    - Users Mailing Lists
    - Forums
  - How to ask for help
    - With sufficient detail
    - Without logins and passwords
    - Patiently

Joining a Community

- When do you join a community?
  - Architectural dependency
  - Need new features
- How do you join a community?
  - As individuals
  - Contributions

Community Contribution

- Contribute
  - Documentation
  - Bug Fixes
  - Modular Components
  - Core Development
- Have an IP policy for contribution
  - Don't conflict with employment contracts

Building Practices

- Doesn't end when you decide to use it
- Set standards and common understandings
- Know where to go for documentation
  - Internal or External -- but use same assumptions
- Common reusable code for projects

Reevaluation

- Reevaluate Projects
  - Did it meet goals?
  - What were the sore points?
  - What did we learn?
- Feed it into the common practices

Releases and Upgrades

- Do you even want to upgrade?
  - Security Fixes
  - Bug Fixes
  - Feature Releases
  - Compatibility
- What testing should you do?
- Should all apps be upgraded together?

Using Open Source

- Community Focus
- Building Knowledge

Conclusions

- The processes for using Open Source Software is very similar to the process for evaluating, selecting, and maintaining any other software.
- There **are** some elements unique to open source, but the majority is that it is more the same than different.

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Thank You!

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