



Skill and Leadership

Mining Open Source GOLD

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Objectives

- Web Applications that:
 - Perform!
 - Are maintainable
 - Are adaptable
 - Cost less
 - Are ready fast
 - Use existing databases
 - Interface with existing systems



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How to get there...

- “Screen-scrapers” (webfacing, HATS, etc.)
 - Doubles the maintenance workload
 - May not perform well
- Application Generators/Wizards (WDSC web tools, etc)
 - Usually high overhead and low performance
 - Modifications can be difficult or unsatisfactory
 - Functional limitations
- Buy a package
 - Too Costly!
 - Often requires modification
- Custom code from scratch
 - Too Costly!
 - Takes too long
 - Requires skills you don’t have
- Open Source.....



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What is Open Source?

- Product source code is available to all users
 - Usually available in binary form also
- Open Source licenses impose fewer restrictions on users
- Usually available without charge (zero-price)
 - Not “freeware”: no “time-bomb”
 - “Freeware” usually does NOT include source code



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Advantages of Zero-Price

- No cost for additional copies
- No cost for latest version
- Encourages innovation
 - Try software out without big financial commitment
 - Makes projects possible that might not otherwise be considered
 - New line of business?
 - Departmental needs not being met
- Ease IT budget – more projects possible
- Reduce total cost of IT



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Open Source Licensing

Open source still has a license,
but the terms are significantly different
from commercial software licenses!

*Free Speech,
NOT Free Beer!!*

- NO limit to number of copies, which machines installed on, etc.
- Possible to have installations for demo, training, testing, integration, redundancy, etc without extra charge
- No restriction to accessing later versions: no software maintenance charges to get them
- Much larger user community than for commercial software
- With greater user access comes with greater user responsibility



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Open Source Licensing

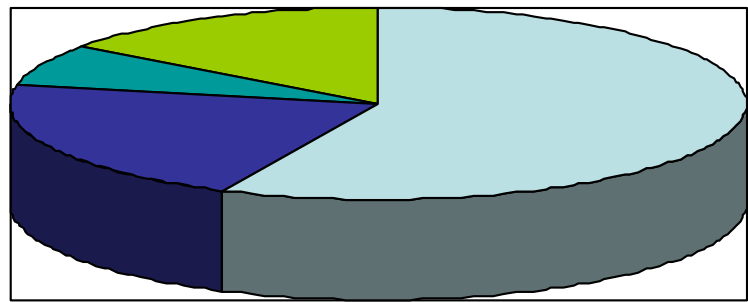
- GNU General Public License (GPL)
 - Most restrictive open license
 - Unlimited use, but...
 - Any derivative work that incorporates a GPL product must be made available in source code form to anyone who requests it (viral license)
- GNU Lesser General Public License (LGPL)
 - Unlimited use of LGPL product, even bundled within another product without requirement to make derivative product available as open source
 - But if changes made to LGPL product source or actual LGPL source incorporated in another product, it must be made available as open source.
- Berkeley license
 - Unlimited use, bundling, incorporating source, etc with no requirement to make resulting product available in any way
- Many other licenses exist with subtle differences... but most are a derivative of these three



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Who makes Open Source and Why?

- 30% of open source developers work on it as part of their employment
- Some organizations that use open source participate in the project for their own needs
- Some developers do it for:
 - prestige
 - self-expression
 - self-fulfillment
 - self-improvement



From 2002 Boston Consulting Group Survey
(www.osdn.com/bcg/)



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Who uses Open Source?

- Major corporations:
 - Google, Amazon, MCI, Master Card, IBM, and more...
 - YOU probably use it and don't even realize it!
- Open source product's user group called "Community"
- Unlike commercial software developers, open source developers have high involvement with community



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Community is Different

- Voluntary developer involvement requires a different attitude
 - Code of conduct
 - Can seem slow, but you can always do it yourself...
- Release early and often means higher product quality
- Source code availability means fixes of higher quality



Where to find Open Source

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- Search Google with product name
- Open Source Portals
 - SourceForge.net
 - www.apache.org
 - www.opensource.org
 - www.openssl.org
 - www.ibm.com/developerworks/opensource
 - And many, many more...
- Commercial Distributions
 - Linux: SUSE, Red Hat
- Add on products: MontaVista embedded Linux
- Derivative products: Spam Assassin
- Dual license offerings: Sleepycat & Berkeley DB



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Open Source Risks

- **Licensing**
 - DO understand the license!
 - Avoid GPL, use LGPL with care, Berkeley is best
 - usually not an issue if you are not developing a product for redistribution
- **Security**
 - Poor quality, Virus, Trojan, License infringement
 - About the same risk as commercial software
- **Premature Commitment**
 - Ease of download and install can lead to product proliferation
 - Operational costs need to be considered
- **Unchanged IT Process**
 - Evaluation process needs to be changed for Open Source



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How to Assess Product Maturity?: Open Source Maturity Model*

- Software
 - Functionality
 - Product Longevity
 - Product quality
 - Team quality
- Support
 - Community
 - Paid support
 - Self Support
- Documentation
- Training
- Product Integrations
 - Often overlooked... but can make or break a project!
- Professional services

* From Succeeding with Open Source by Bernard Golden



Open Source Maturity Model*

- Steps for assessment:
 - Define organizational requirements
 - TAKE THE TIME TO DO THIS RIGHT!
 - Involve ALL User Departments!
 - Locate resources
 - Internet
 - Competitive commercial product documentation
 - Professionals
 - Assess element maturity
 - Different standards apply
 - Assign maturity score (scale of 1 to 10)
- Weighting factors vary by organization and situation
- Acceptable scores vary by organization and situation

* From Succeeding with Open Source by Bernard Golden



Open Source Maturity Model*

Sample Open Source Maturity Model evaluation for JBOSS

Element	Potential Score	Actual Score	Weighting Factor	Element Weighted Score
Software	10	8	4	32
Support	10	8	2	16
Documentation	10	6	1	6
Training	10	8	1	8
Integration	10	10	1	10
Professional Services	10	6	1	6
Total product maturity Score				78

* From Succeeding with Open Source by Bernard Golden



Some Open Source Products

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- Operating systems: Linux variants
- Web servers: Apache HTTP server
- Databases: MySQL, PostgreSQL, Derby,
- Programming Languages: PHP, Perl, Python, Java
 - Components available for each language
- File serving: Samba, FTP, WebDAV (Distributed Authoring and Versioning)
- Directory: OpenLDAP
- CRM: Gnubis, Customer Touch CRM, GuanziCRM, Antiel/Retriever CRM
- Calendar and schedule management: Mozilla, WebCalendar, PHPiCalendar, phpGroupWare, Ximian Evolution
- Document Management: CVS, Subversion
- Financial systems: GNUCash, SQL Ledger, Aria
- Project Management: PhpColab, Tutos, WebCollab, dotProject
- Change Management: Bugzilla, Mantis, Track+ Defect Tracking
- Enterprise Resource Planning: Compiere, OpenMFG, GNU Enterprise



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Common Services Toolkit

- Faster development, without the overhead, cost or performance hit of screen-scrapers, wizards & 4GL tools
- Based on over ten years of object-oriented development experience
- Most applications include some common elements
- XML is everywhere
- Growing resource of Open Source code
 - Tested
 - Proven



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Common Services Toolkit: Definition

- What is a Common Services Toolkit?
 - Collection of java open source libraries
 - Glue to tie them together
 - Helper classes to simplify common tasks
- Based upon open standards
- Layered, encapsulated
- Highly flexible
 - Environment properties: can move application to different servers without changing code
 - Database access driven by properties: can point application to different databases without changing code
 - SQL in separate objects, not dispersed throughout code: database changes can be addresses more quickly
- NOT a framework
 - Does not dictate design
 - Permits integration of new technologies as dictated by business need



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Some Common Services Toolkit Components

- Xerces (XML, SAX parsing)
- XALAN (XSL Transformations)
- FOP (XSL-FO Transformations)
- JDOM (XML document production)
- Struts (Web application framework)
- JOX (XML-Java bean)
- JDBC (Persistence)
- Commons Logging (logging)
- JUnit (Testing)

It is our intention at Alliance Systems & Programming to make the Common Services Toolkit available as Open Source within the next few months. If you are interested in using it in the meantime, just let us know!



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Common Services Toolkit: Benefits

- **Integrated with standard technologies**
 - Tomcat, Websphere, DB2, mySQL, etc.
- **Open, not proprietary**
- **Highly flexible**
- **Scalable**
- **High performance**
- **Layered**
- **Highly declarative**
- **Extendable**
- **Resources readily available**
- **It's ready, it works, we know how to use it**



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Using Open Source

- Identify a need
- Evaluate options using Open Source Maturity Model
 - Good applications available?
 - If not, what would it take to build on Common Services Toolkit?
- Try out solution
- Open Source as a training vehicle
 - Web skills start with HTML, Javascript, SQL, XML... no matter what language you use
 - Open Source is often based on “best practices” – good to example to learn from



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The Keys to Success

- A proven, repeatable methodologies
 - Open Source Maturity Model
 - Agile Software Development Process
- Embedded, mentored skills transfer
 - Using skills is the BEST way to learn!
 - Just-in-Time Training
- Faster results, without the overhead, cost or performance hit of screen-scrapers, wizards & 4GL tools
 - Common Services Toolkit

Let Alliance ensure the success of your development project!!



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References

- Succeeding with Open Source by Bernard Golden, Addison-Wesley Professional 2004
- Open Source Solutions for Small Business Problems by John Locke, Charles River Media Networking Series 2004
- Understanding Open Source & Free Software Licensing by Andrew M. St. Laurent, O'Reilly Media, Inc. 2004