

# what is Open Source? why use it and who benefits

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**Ken Chad**

Ken Chad Consulting Ltd  
[ken@kenchadconsulting.com](mailto:ken@kenchadconsulting.com)  
Te: +44 (0)7788 727 845  
[www.kenchadconsulting.com](http://www.kenchadconsulting.com)

**kenchadconsulting**

# themes....

open source in general

open source and the wider 'open' context

open source in the library domain

**open source in general**

# what is it?

'the process of systematically harnessing open development and decentralized peer review to lower costs and improve software quality'

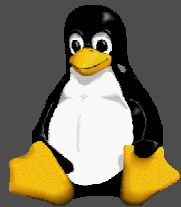
The cathedral and the bazaar. Eric Raymond

# what is it?

'open source is about distributed innovation and will become the dominant way of producing software'

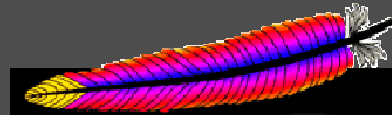
Library system vendor: JISC/SCONUL LMS study 2008

# you probably use open source already....



Linux operating system

Apache web server



MySQL database

OpenOffice



Firefox browser

Wordpress –blog/website



# maybe you have one of these.....?



The advertisement features the green Android robot on the left, pointing towards a Nexus One smartphone in the center. The phone's screen displays the Android home screen with various app icons and a weather widget. To the right of the phone is a red box with white text that reads "Upgrade to Android™ Available online – and delivered free of charge" and a "Upgrade now" button with a play icon. Below this is a light blue box with the text "Nexus One from Google Available from only £35 per month" and a "Find out more" button with a play icon. A smaller image of the Nexus One phone is shown to the right of this text.

## ...an aside on 'free'

not all open source software is free and not all proprietary software is licensed for a fee.

**freeware** is free (gratis) software. The licensee can use it without paying a license fee

**free software** may be proprietary software --no source code provided ( e.g. Adobe Acrobat) or open source software (e.g. Linux).



# ...an aside on `free(dom)

'His [Stallman's] desire was to create "free" software, but the term "free" should be equated with freedom, and as such people who use "free" software should be:

- 1) free to run the software for any purpose
- 2) free to modify the software to suit their needs
- 3) free to redistribute of the software gratis or for a fee
- 4) free to distribute modified versions of the software.'

'Open Source software in Libraries.' By Eric Lease Morgan. Infomotions, Inc Blog. 2004 <http://infomotions.com/musings/biblioacid/>

## ...an aside on 'free'

Open source therefore illustrates the tension between 'free' as (just) another business model (see '*Free. The future of radical price*' by Chris Anderson) and 'freedom' (as promoted by Richard Stallman- 'think free speech, not free beer')

# why use it? who benefits?

so....

- we all use open source (probably)
- we use it because it solves our problems ---
- we all benefit



....platitudes of course...so..let's look a bit further



**it's mainstream, profitable big business**





'Open source software provides one example where openness is creating significant value, a portion of which is captured by the firm, via a business model built around open source'.

'Open Business Models. How to thrive in the new innovation landscape' By Henry Chesbrough. Harvard Business School Press. 2006

# open source business

'It's a very good business model for entering large, existing markets and taking significant share, and creating significant customer and investor value,'  
.....**If you're an incumbent competing with a new competitor that's an open source company, it's very difficult to adjust or change your business model to be competitive.** Usually by the time they end up adjusting, it's too late.'

Richard Gorman, a venture partner at Bay Partners. 2007

# a 'future of Open Source' survey

North Bridge Venture Partners Future of Open Source survey 2009

Approximately 96% of respondents feel the **economy's turbulence is "good" for open source software** (up from 81 percent in 2008)

Almost 80% of respondents believe that open source software will make up **greater than 25% of the software purchased** in their organization.

# a 'future of Open Source' survey

North Bridge Venture Partners Future of Open Source survey 2009

top four **factors that make open source software attractive**

- lower cost
- security
- no vendor lock-in
- better quality.

**Barriers** for greater open source acceptance include

- unfamiliarity with open source solutions
- lack of internal technical skills
- lack of formal commercial vendor support.

The **most value** for open source vendors is predicted to **come from technical support and professional services.**

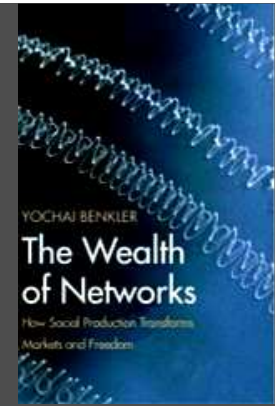


'2010 will be the year that the rest of the industry follows Google's lead and starts to use open source as a **fundamental business strategy**, and not simply a plaything to placate "the community."

'Open source became big business in 2009' By Matt Asay. CNET News website. 26 December 26 2009.  
[http://news.cnet.co.m/8301-13505\\_3-10422013-16.html](http://news.cnet.co.m/8301-13505_3-10422013-16.html)

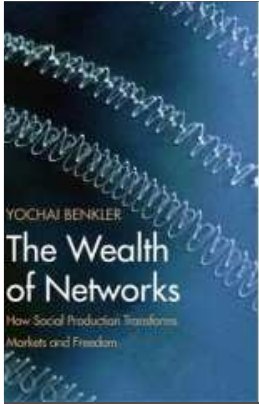
**the wider 'open' context**

# the networked information economy



‘one of the aspects of this new economy is the rise of a new ‘mode of production’ -- ‘social production’.

‘enabled by cheap computing and fast pervasive networks people are giving their time individually or in collaboration with others to produce goods for free’.



**'[Open source] ...the quintessential instance  
of peer production'**

# removing barriers

'.. technology is unleashing a capacity for speaking that before was suppressed by ***economic constraint***. Now people can speak in lots of ways they never before could have, because the economic opportunity was denied to them'

Mother Jones Magazine (website)

Interview with Lawrence Lessig: Stanford Law School Professor, Creative Commons Chair  
June 29, 2007

[http://www.motherjones.com/interview/2007/07/lawrence\\_lessig.html](http://www.motherjones.com/interview/2007/07/lawrence_lessig.html)

# removing barriers the rise of the 'Pro-Am'

passionate amateurs, using new tools, are creating new products and paradigms.

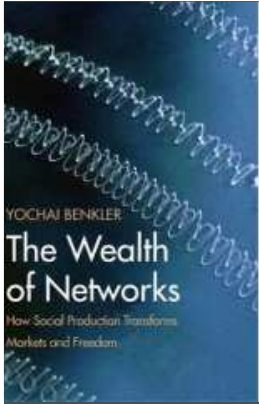
creativity is not about 'special people'

most creativity is *collaborative*

create a platform for people to **share**

complete corruption of the ideas of patent and copyright

Charles Leadbeater. Demos (Think tank) <http://www.ted.com/index.php/talks/view/id/63>



# removing barriers-copyright

**'copyright blocks access to the inputs into information production that are copyrighted'**

Wednesday June 29, 2005

# removing barriers-copyright

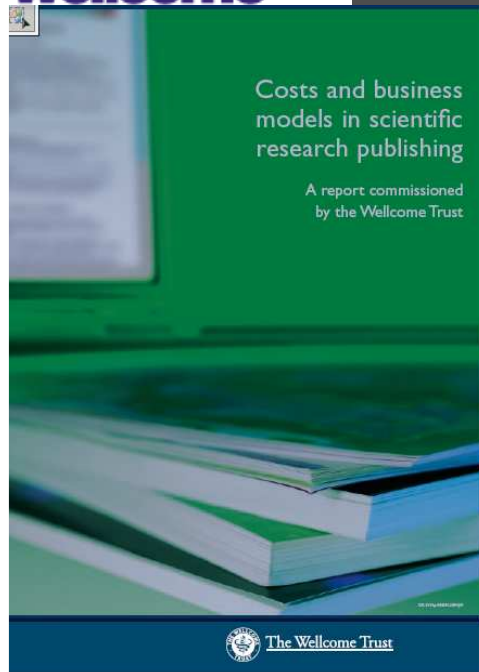
'Patents and copyrights, ..... have always been aimed at **finding a balance** - as the Harvard professor Lawrence Lessig puts it - "between rewarding creativity and allowing the borrowing from which new creativity springs". That's why terms of copyright eventually elapse; in the original US Constitution, they elapsed after just 17 years.'



# removing barriers-open access

'a practical, efficient and sustainable model to unlock the potential of the web for disseminating the results of publicly funded research'

wellcome trust



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# removing barriers - open data



'Advised by Sir Tim Berners-Lee and Professor Nigel Shadbolt and others, government is opening up data for reuse'.

# removing barriers - open data

'Given the public role of libraries and the fact that bibliographic metadata (i.e. the material in library catalogues) doesn't seem that exciting from a commercial point of view you might think that, of all the types of data out there, **it would be bibliographic data that would be the most open.**

**You might even think**, given the public-spiritedness of librarians, that this is the kind of area where not only could it be openly available but it would be openly available ....

**In fact the situation is quite the opposite.** Most libraries appear to implicitly or explicitly exert rights over their data with some libraries licensing access to their catalogue data for substantial sums of money.'

'Open Bibliographic Data. The State of Play'. Open Foundation Blog. March 6th, 2008.  
<http://blog.okfn.org/2008/03/06/open-bibliographic-data-the-state-of-play/>

# characteristics of OSS

- peer-to-peer -- collaboration
- anyone can change the source
- modular, open standards
- typically some form of 'Maintenance Agency' to manage development & maintenance

# characteristics of OSS

**'it ....depends upon copyright law just a Microsoft does'**

for example by requiring (e.g. in the GPL) that the source code be made available by anyone who modifies and redistributes the software

Lawrence Lessig. 'Free Culture.' Penguin 2004

# open source licensing

The fundamental purpose of open source licensing is to *deny* anybody the right to *exclusively* exploit a work

*Taken from 'Understanding Open Source & Free Software Licensing'. By Andrew M St Laurent. O'Reilly. 2004*

# open source licensing stops this..

- I cannot copy the work (beyond single own use)
- I cannot make derivatives based on the work
- I cannot authorise anyone else to do either of the above two things

the elimination of the three main restrictions on most commercial 'shrinkwrap licensed' software is the foundation of open source licensing

# open source licensing

- MIT
- BSD
- Apache (Versions 1.0 and 2.0)
- Academic Free License (AFL)
- GNU General Public License (GPL)
- GNU Lesser General Public License (LGPL)
- Mozilla Public License
- Qt License
- Artistic License (Perl)
- Creative Commons Licenses
- Sun Community Source License and commercial Use Supplement
- Microsoft Shared Source Initiative

*Taken from: 'Understanding Open Source & Free Software Licensing'. By Andrew M St Laurent. O'Reilly. 2004*



# benefits of Open Source (1)

- **bug fixing:** 'given enough eyeballs, all bugs are shallow' [Eric Raymond, *The Cathedral and the Bazaar*]
- **Security:** access to source code makes it easier to detect security flaws in software. In practice, the skills and time required to find security flaws, work out how they can be exploited, and then initiate an attack, are more specialized than the mundane debugging skills required to close them
- **customization:** Open source software can be readily adapted to meet specific user needs. If you would like something added or customized urgently, you can generally pay an appropriately skilled software developer to do it
- **translation:** large closed source commercial software vendors are usually unwilling to translate their products into less widely spoken languages, as the market for them would be too small to guarantee a profit

## benefits of Open Source (2)

- **avoiding vendor lock-in:** as there is no incentive to use non-standard formats to inhibit compatibility, open source software tends to use open standard formats and there is little danger of being 'locked-in' by a vendor.
- **mitigation of vendor/product collapse:** the source code is not 'owned' in the same way that proprietary source code is, it may be picked up and developed by anyone with an interest in a product's survival.
- **being part of a community:** By adopting open source software you become part of a community of users and developers who have an interest in working together to support each other and improve the software

# open source in the library domain

# is the market failing?

'...we're seeing the seeds of a new revolution being sewn [sic]. As the goal of some companies becomes once more attuned to trimming costs... libraries and their users suffer. In some cases, cost savings are being generated for the company by consolidating products... When this happens, it is short-term profit that is the objective rather than serving the long-term mission of libraries. **These companies have become unresponsive to the collective goals of our profession** and, like so much of our society these days, are no longer focused on the "we" but the "me". It is a sad state of affairs and one that will not be tolerated'

'A symphony out of tune: when companies go deaf'. Carl Grant. Care Affiliates blog. 4 July 2007.  
[www.care-affiliates.com/thoughts/archives/6](http://www.care-affiliates.com/thoughts/archives/6)

# is the market failing?

'We feel that software companies have not designed Integrated Library Systems that meet the needs of academic libraries, and **we don't think those companies are likely to meet libraries' needs in the future by making incremental changes to their products.** Consequently, academic libraries are devoting significant time and resources to try to overcome the inadequacies of the expensive ILS products they have purchased.'

Duke University Openlib project

# some views of library system vendors

- 'we only use OSS as *components*' (to reduce costs)
- 'OSS is not competitive for a complete LMS'

Or.....(remember this one?)

- '**Open Source** is about distributed innovation and **will become** the **dominant** way of producing software'

# open source in the library domain

- *Library Management Systems (LMS, ILS)*
  - Koha
  - Evergreen
  - OPALS
  - NewGenLib
  
  - Kualiti OLE on its way.....

# open source in the library domain

- *other library and library related systems*
  - Electronic Resource Management –ERM (TrueSerials)
  - Discovery/Search (VuFind, Summa, SOPAC)
  - Repositories (Eprints, Dspace)
  - Learning systems (Moodle)



# open source in the library domain

- *components*
  - Lucene (in Primo, Encore)
  - Drupal (in Chamo)
  - MySQL (in Talis Decisions)
  - JANGLE.org (interoperability API)
  - Pazpar2 (metasearching middleware –e.g. in OCLC WorldCat local)

# open source in the library domain

- *support and development companies*
  - Equinox
  - Index data
  - PTFS
  - Turo Technology

# open source in the library domain

'**open source systems** such as Koha and Evergreen have entered the marketplace as ***routine options.***'

'Investing in The Future: Automation Marketplace 2009. By Marshall Breeding. Library Journal, 1<sup>st</sup> April 2009. <http://www.libraryjournal.com/article/CA6645868.html>

# open source in the library domain

'The survey found that **open source ILSs were more cost-effective than proprietary ILSs**. Libraries using open source ILSs chose them mainly for affordability, and they cost less than proprietary ILSs. Although users of open source ILSs experienced difficulties with installation and incomplete documentation, **they were modestly more satisfied than users of proprietary ILSs.**'

'Survey of Open Source integrated Library Systems'. A Thesis Presented to The Faculty of the School of Library and Information Science San José State University. By Linda M. Riewe. August 2008 <http://users.sfo.com/~lmr/ils-survey/080831-paper-Riewe.pdf>

# some libraries in the UK that have chosen an Open Source LMS

Booz & Company (Management Consultants)

CAMLIS (Health Library)

Dame Alice Owen's School (School Library)

UN Food & Agricultural Organisation (Special Library)

King's Fund (Special/Health Library)

Kettering NHS Trust (Health Library)

National Botanic Garden of Wales (Special Library)

World Maritime University (Academic Library)

Higher Education Library Technology (HELibTech) [www.helibtech.com](http://www.helibtech.com)

# open source in the library domain

A number of factors indicate that **open source library automation will be a growth sector for the industry**, although the adoption thus far has moved upward gradually, not climbed dramatically. .... Generally, while open source library automation continues as a trend worth noting, **proprietary software currently dominates**.

'Automation Marketplace 2010: New Models, Core Systems Discovery interfaces add a new facet to the marketplace'. *By Marshall Breeding . Library Journal, 1<sup>st</sup> April 2010*

## ...a few concluding thoughts...

- technology, cost and complexity barriers are coming down
- 'Pro-Ams' in the library sector taking advantage of the above
- increasing availability of open source and open data – components, products and support & development choice
- an increasing contribution from non 'traditional' library systems companies
- Business models will continue to evolve

# More information...

Open Source articles on..

**Higher Education  
Library Technology**

<http://helibtech.com/>

**Local Government  
Library Technology**

<http://lglibtech.wikispaces.com/>



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