



# Introduction to Open Source

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# Involvement with Open Source



- Started working with DEC / Unix – 1980s
- Wrote thesis in LaTeX
- Running Linux since 1994
- Recent involvement with communities in developing countries to increase education opportunities

# Unix Philosophy



- Write programs that do one thing and do it well
- Write programs that work together
- Write programs that handle text streams
  - Introduced the concept of pipe
  - Good documentation

# Free Software Foundation



- RMS
- Notion of Property
- GNU
  - Freedom to run the program for any purpose
  - Freedom to study how the program works
  - Freedom to redistribute
  - Freedom to change
- GPL

# What is Open Source?



- To understand that, we have to understand “property.”

# Property



- Open source approaches property from the “right to distribute,” rather than the “right to exclude.”

# Open Source Definition



- Free Redistribution
- Source Code
- No Discrimination Against Persons or Groups
- No Discrimination Against Fields of Endeavor
- Distribution of License
- License Must Not Be Specific to a Product
- License Must Not Restrict Other Software
- License Must Be Technology-Neutral
- <http://www.opensource.org/docs/osd>

# Question



- What is the *Open Source* process, and how can it be adapted for other kinds of production?



# The OS Process in Software



- Who writes open source code?
- What do these people do?
- How do they collaborate
- How do they resolve disagreements and deal with conflict?

# The Software Problem



- Brooks Law
  - Essence
  - Accident
- Software *complexity* is an essential problem

# Division of Labor: Two Models



- Cathedral Model
  - Separate Architecture (Design) from Implementation
  - Produces hierarchical (nested) tree of labor
  - Brooks' Law
- Open Source Model
  - *Voluntary participation and selection* of tasks
- Advantages and Disadvantages?



## OPEN SOURCE PRINCIPLES

### Intellectual property



Code should always be open -  
“Free speech, not free beer”



“Copyleft”



“Use copyright to  
ensure copyleft”

### Development paradigm



Extensive involvement of  
user/developer community



“Release early, release often”



Modularize code

### Resource model



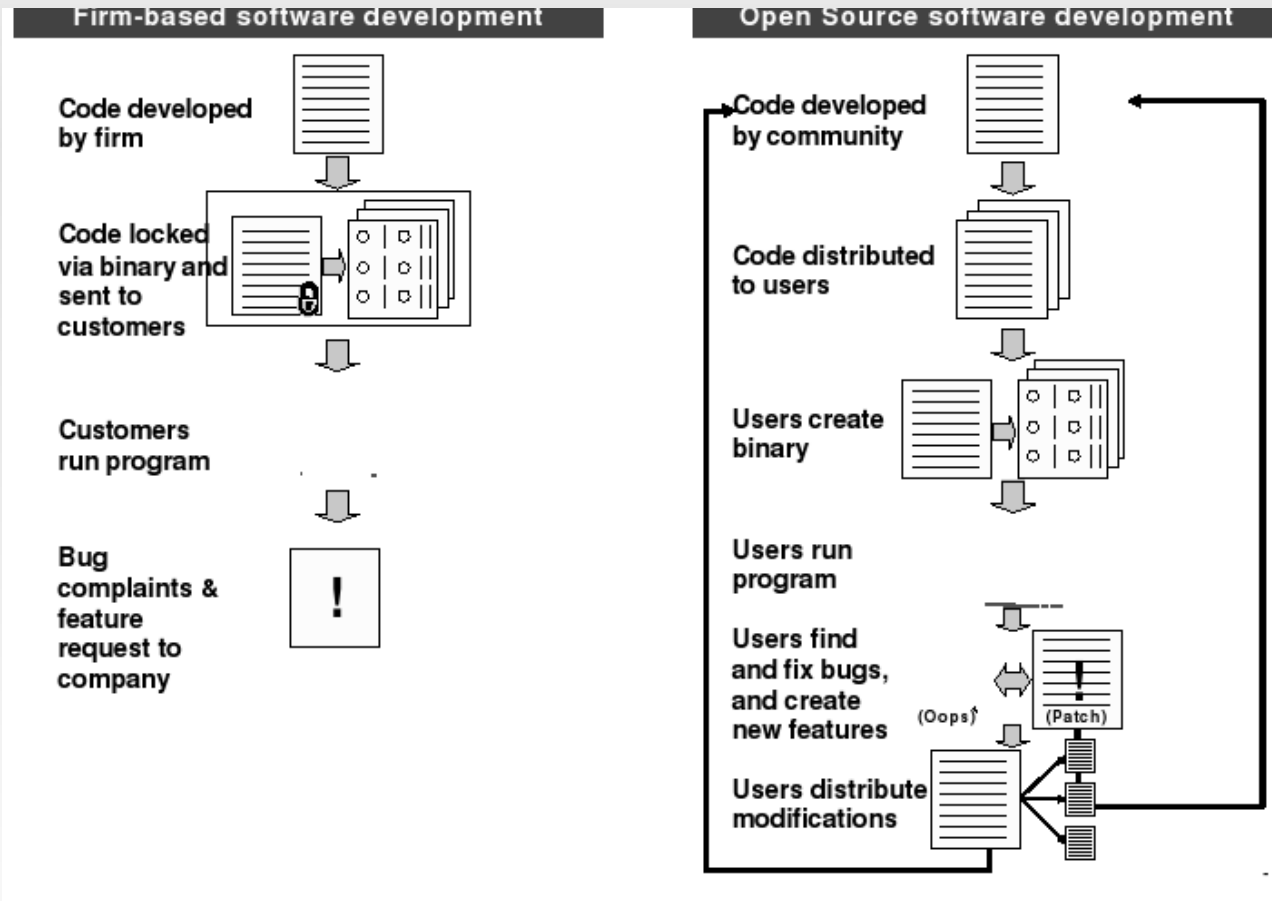
Good ideas come from solving  
a problem or scratching an itch

“The three obligations: to give,  
to receive, to reciprocate”



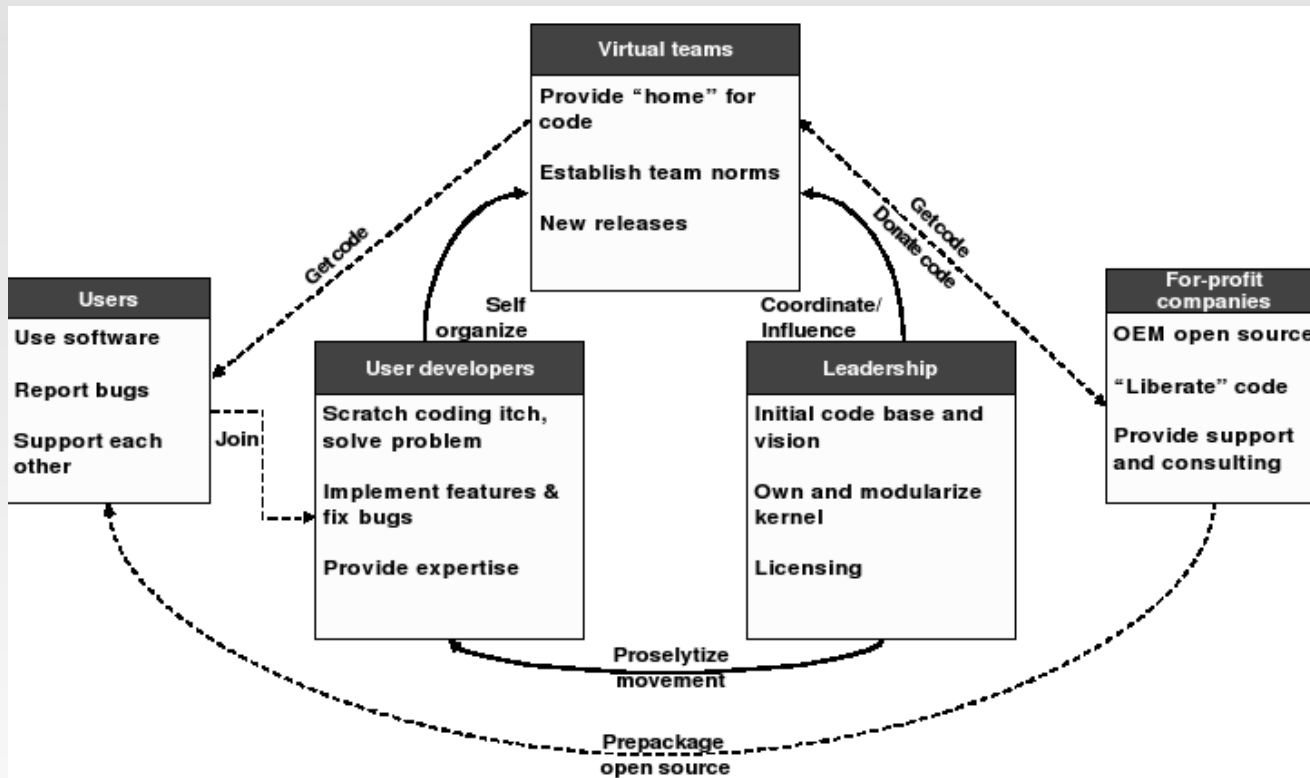
Peer leadership -  
vision, engagement, code

# Two Models (cont.)



- 4 -

# How Does OS Work?



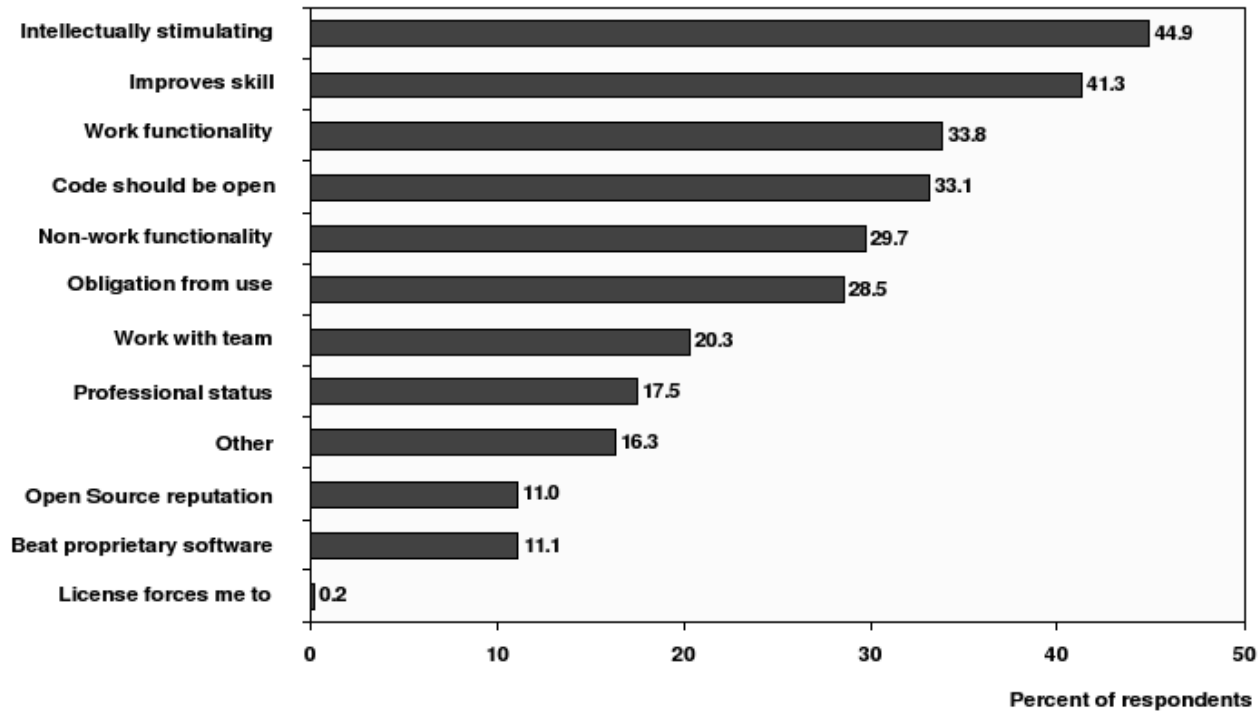
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# Who Participates



- Sourceforge.net
  - 167,880 projects (January 2008)
  - 1,778,510 users
- Average age: 30 (2000)
- 98% Male
- Global enterprise

# What do they do?



Note: Question asked for top three motivators of F/OSS participation, n=684

- 14



# Key Points - Participation



- Scratch an itch
- Don't reinvent the wheel
- Distribute and work in parallel
- Law of large numbers for testing
- Document
- Always in Beta (release early, release often)
- Talk a lot

# Questions?



- Why does OS even exist?
- What about free riding, and consequent decline in public goods?
- What is the effect of Brooks law?

# Key Issues



- How important is the OS process?
- How does the OS process affect social organizations?
- Is the OS process a more efficient collaborative model?
- What is property?

# Afterthoughts



- “I don't have any lofty goals. I just want to have fun making the best damn operating system I can.” Linus Torvalds, July 2003
- “What would happen if physical property could be duplicated like an MP3 file?” - Cory Doctorow, *After the Siege*

# Networking Software



Category	Linux apps
Browsers	Epiphany, Firefox, Galeon, Konqueror, Lynx, Mozilla, Nautilus, Netscape, Opera
Email	Kontact, Evolution, Thunderbird, Claws Mail
IM	Mercury, Pidgin, Kopete, aMSN, KICQ, Gabber, Centericq
Microsoft Netmeeting	Gnomemeeting
FTP	FileZilla FTP Client, GFTP, KFTP (KFTPGrabber), Kasablanca, FireFTP, Konqueror, KBear, CrossFTP
Remote Desktop	TightVNC, RealVNC, rdesktop, FreeNX, x11vnc, Synergy, XDMCP, x11 forwarding
File Sharing	aMule, Azureus, Qtorrent, Ktorrent, bittornado, Deluge

# Multimedia



Photoshop	GIMP, GIMPShop, Krita, Pixel (non-free high quality), LightZone
Corel Draw, Corel Design	Inkscape, Sodipodi
Irfanview, ACDSee	XnView, GQView, Mirage
3D Studio MAX, Blender	Blender, Maya, Softimage, K-3D
Windows Media Player,	MPlayer, Xine, Totem, Kaffeine, VLC
SIA Smart Live,	BRP-PACU
Winamp, Sonique, iTunes	amaroK, XMMS, BMP, Audacious, juke, noatun, RhythmBox, xi
Adobe Premiere	Cinelerra, KDenlive, LiVES, Kino, AviDemux
Audio Editing	Ardour, Rosegarden, Audacity, GNUsound, Beast
Audio Catalyst, dbpower2	Grip, Audacity
Cakewalk	kmid, kmidi
Paint	Tux Paint KolourPaint

# Office Software



Office	Open Office, Koffice, Abiword
Project	MrProject, Imendio Planner, Kplato
Email	Evolution, Kontact, Balsa, Thunderbird + Lightning, Sunbird
Finance	GnuCash, KMyMoney, jGnash, MoneyDance, Grisbi, PLCash, C
Editors	Gedit, Emacs, nano, vi, Kile, Texmaker

# Servers



Web	Apache, iPlanet, thttpd, lighttpd, YAWS ZOPE
Print	Samba
FTP	proftpd, vsftpd, pure-ftp
NetLimiter	Trickle, Level 7 Filter, ClarkConnect, Bandwidth Arbitrator
Exchange	Citadel, Zimbra, Open-Xchange
Sharepoint	KnowledgeTree

[http://wiki.linuxquestions.org/wiki/Linux\\_software\\_equivalent\\_to\\_Windows\\_software](http://wiki.linuxquestions.org/wiki/Linux_software_equivalent_to_Windows_software)



# Business Software



- Content Management: Plone, Joomla, Moodle
- Social Networking: Elgg
- ERP: Compiere
- Project Management: GanttProject, OpenProj
- More at [http://www.infoworld.com/slideshow/2008/08/168-best\\_of\\_open\\_so-1.html](http://www.infoworld.com/slideshow/2008/08/168-best_of_open_so-1.html)

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# Software / Hardware



- <http://www.distrowatch.com>
- <http://www.linux-laptop.net/>
- <http://laxer.com/>
- <http://www.linuxjournal.com/>
- <http://www.linux.org/hardware/>