



Open Source Software (OSS)

Course Duration: 6 hours

What is Open Source Software?

Definition

- Open Source is software that allows you to view and modify the source code

Reality – More than just the code is “open”

- The complete “source” is open
 - Code
 - Developers
 - Project leaders
 - Driving requirements
- All are open to the feedback and suggestions of the user community

What is Free Software?

- A software which grants some special rights to the user
- Gratis v.s. Free (liber)
- basic freedom:
 - The freedom to run the program, for any purpose (freedom 0).
 - The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
 - The freedom to redistribute copies so you can help your neighbor (freedom 2).
 - The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

Free Software v.s. Open Source

- Open Design
- Open Format
- Open Standard
- Raymond's Goodbye, "free software"; hello, "open source"

Why does we need Open Source?

- Genealogy software is slow to adopt new technologies
- Many users are frustrated by current genealogy software
- Low return on investment for genealogy software vendors
- Many users are older and/or are apathetic towards new technology
- Proprietary software development blocks those users who are interested, limiting the new ideas that make it into current software packages
- Localization and internationalization is lacking or non-existent

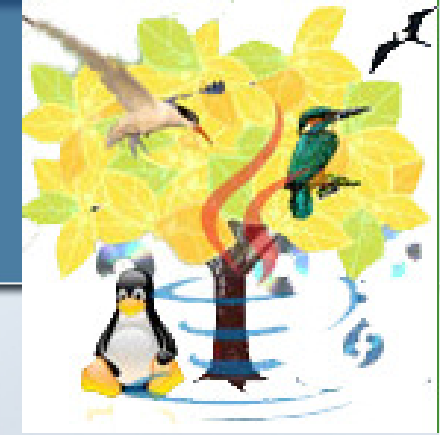
Open Source Solutions

- The “release early, release often” motto of Open Source means new technologies are added and released faster
- Users have a medium to express their frustrations and solutions are quickly made available
- Community and volunteer driven instead of profit driven
- Under the community driven process users can become involved with the software and feel ownership

Open Source Solutions

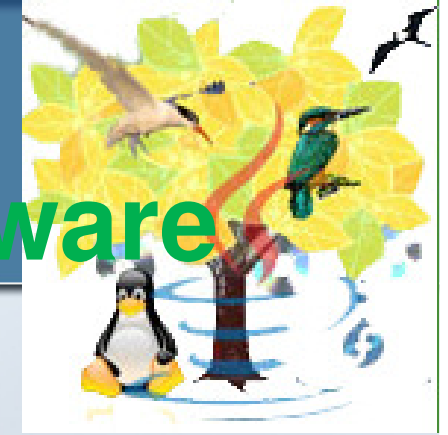
- New ideas flow into mature products instead of spawning new immature products
- Open Source promotes localization and internationalization because people from many different languages, backgrounds, and cultures are involved and contribute.

Philosophy of OSS



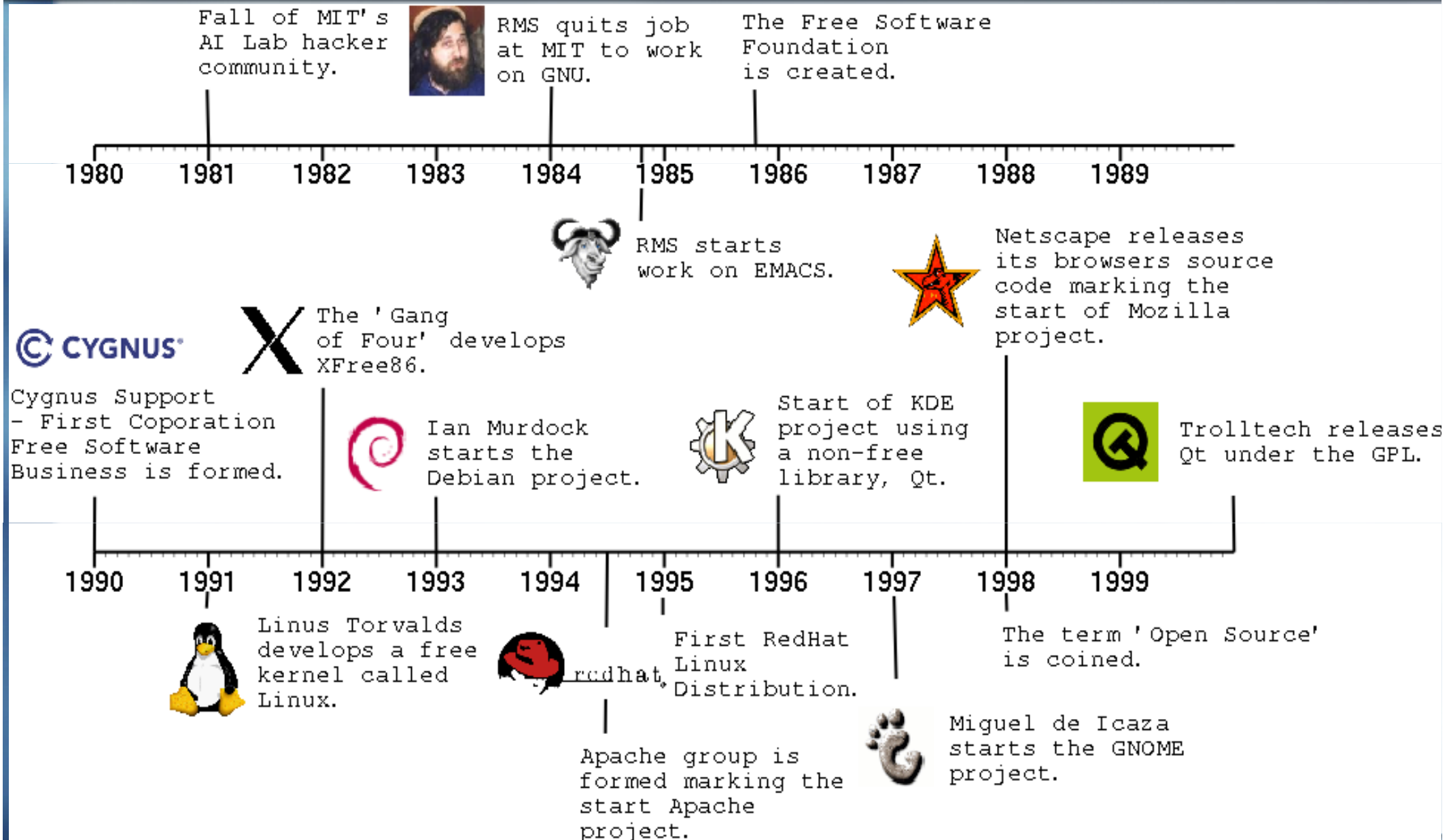
- Users should be treated as co-developers
- Early releases
- Frequent integration
- Several versions
- High modularization
- Dynamic decision making structure

Licensing Of Open Source Software



- Open source licenses define the privileges and restrictions a licensor must follow in order to use, modify or redistribute the open source software. Open source software includes software with source code in the public domain and software distributed under an open source license.
- Examples of open source licenses: Apache License, BSD license, GNU General Public License etc.
- The proliferation of open source licenses is one of the few negative aspects of the open source movement because it is often difficult to understand the legal implications of the differences between licenses.

GNU Project



Complexity of using OSS

- Brooks, Frederik P., The mythical man-month: essays on software engineering, 20th anniversary ed., 1995.

- Broox law:
$$complexity = \frac{n \times (n - 1)}{2}$$

- Raymond's rejection of the law
 - Halo developers (working in parallel)
- Bezroukov's critic

Complexity of using OSS (con't)

- Fagel, K., Producing Open Source software, 2005.
- SVN author
- Most (sf.net: 90-95%) of Open Source projects *fail*
 - Download hit
 - Mailing list and user community
 - *Out of* project plan
- The importance of management

Importance of Cathedral

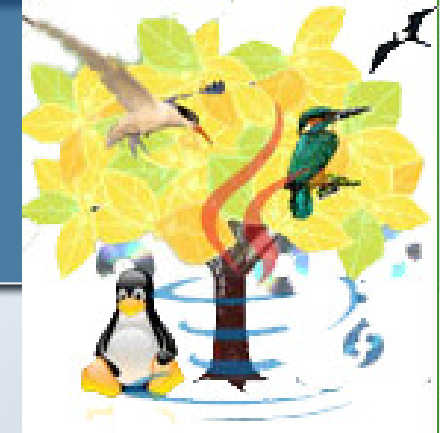
- IBM and Eclipse ecosystem (initial \$40M investment): now over 150 software company with 1200+ developers from 63 different countries
- Java and Open Source community
- MySQL

Examples of OSS

- LINUX
- APACHE
- FIREFOX
- PhpGedView (PGV)
- GenealogyJ
- GRAMPS
- GenerationX
- LifeLines

About Linux...

The Open Source Operating System



- **Linux** is the name usually given to any Unix-like computer operating system that uses the Linux kernel. Linux is one of the most prominent examples of free software and open source development: typically all underlying source code can be freely modified, used, and redistributed by anyone.

▪

Where to download?

- Red-hat Linux

- <https://www.redhat.com/apps/download/>

- X-window

- www.starnet.com/products/xwin32/download.php?ID=907223-8733.

- [DIA Diagram Creation Program](http://projects.gnome.org/dia/)

- <http://projects.gnome.org/dia/>

- OpenOffice

- <http://download.openoffice.org/>

- Apache Tomcat

- <http://software.informer.com/getfree-apache-download-wamp-lightweight/>

(Try install them!)

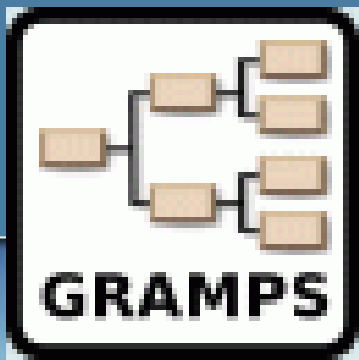
PhpGedView

Online genealogy viewer – *A new look for your old ancestors.*

- PhpGedView (PGV) is an internet based genealogy program that you can use to:
 - setup your own genealogy website
 - edit your data online
 - collaborate with relatives working on the same family lines
- PGV can do all of the things that a typical desktop genealogy program can do, but this runs over the internet.
- It imports and exports GEDCOM files, so it is compatible with other genealogy software.
- <http://www.finlayfamily.org/genealogy>



- GenealogyJ (GenJ in short) is a full-featured stand alone Java application that can handle all of your genealogic information.
- It provides different graphical components for working on your Family Tree.
- Nice timeline chart



Gramps

- GRAMPS is a genealogy program for Linux and other UNIX-like systems (MacOS X). The GRAMPS name stands for Genealogical Research and Analysis Management Programming System.
- Easy to use. A well designed user interface make entering data easy.
- <http://gramps-project.org/>

(Try install & run [GrampsPortable_3.1.1.paf.exe](#) (23.2 MB))

GenerationX

- GenerationX is a genealogy tool for Mac OS X written entirely in Cocoa and conforming to the GEDCOM 5.5 standard for storing genealogy data.
- <http://homepage.mac.com/nowhereman77/hacks/genx2.html>





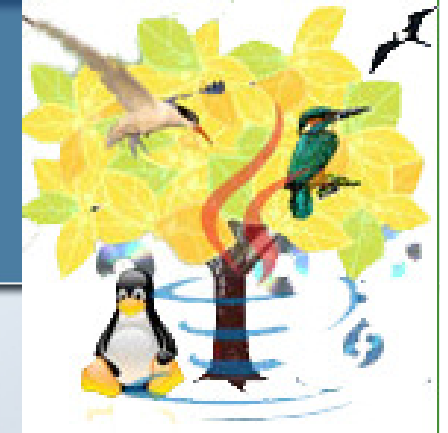
LifeLines

- LifeLines is a text based program that will run on many operating systems and older computers
- One of the oldest Open Source genealogy programs
- The power of LifeLines is in its report scripting language – you can download many, many types of reports

Importance of the Open Source

- How important is it for the end-user?
- How important is it for a hacker?
- Lefkowitz's critic on Raymond's theory
- Which is better?
 - A binary program that I didn't pay any money for which will install itself (or run) if I double click on it?
 - A binary program that I didn't pay any money for which will install itself (or run) if I double click on it, and will also put a bunch of mysterious text files in some folder, reducing the free space available for MP3's.
 - A source tarball that I didn't pay any money for, which I can use to build a working executable assuming that I learn how, and have all the right developer tools, libraries, and header files installed, and the patience to wait.

Advantages of Open Source Software



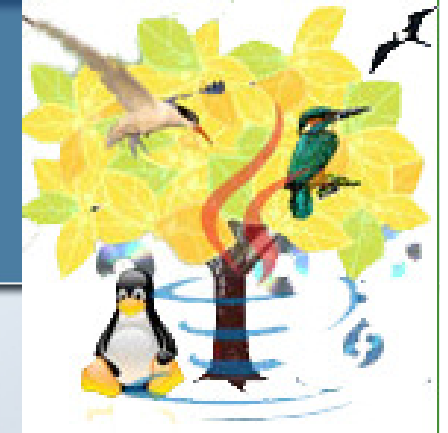
Software experts and researchers on open source software have identified several advantages

- The main advantage for business is that open source is a good way for business to achieve greater penetration of the market.
- it offers the potential for a more flexible technology and quicker innovation.
- It is flexible because modular systems allow programmers to build custom interfaces, or add new abilities to it and it is innovative since open source programs are the product of collaboration among a large number of different programmers

Is your freedom restricted if...

- Your pilot needs a license to fly an airplane?
- Cab and truck drivers need a license to drive?
- The surgeon needs a medical license to perform surgery on your child?
- Your lawyer needs to pass the bar to practice law?
- You need to have a ham radio operator's license to broadcast on Amateur Service frequencies?
- You need to have a programming license to have access to the source?

Disadvantages of Open Source Software

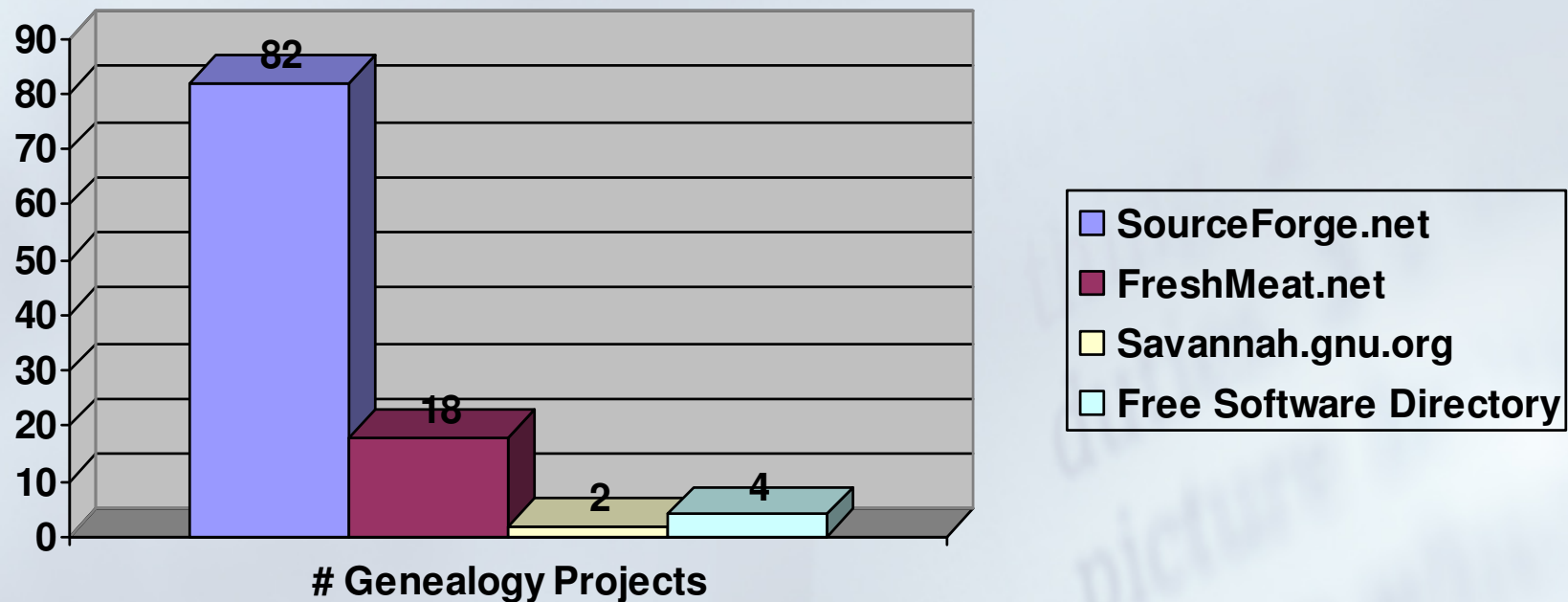


Software experts and researchers on open source software have identified some disadvantages:

- Open source development process may not be well defined and the stages in the development process, such as system testing and documentation may be ignored.
- Not all OSS initiatives have been successful, e.g.: SourceXchange and Eazel.
- Software experts and researchers who are not convinced by open source's ability to produce quality systems identify the unclear process, the late defect discovery and the lack of any empirical evidence as the most important problems

Open Source Software Resources

- Open Source communities
 - <http://www.sourceforge.net>
 - <http://savannah.gnu.org>
 - <http://www.freshmeat.net>




How to get involved

- Choose a software package that you like and begin using it
- Integrate yourself into the user community for the project. Read the forums and mailing lists
- Decide how you would make the software better and work within the community to make it happen

Questions?



Open-Source Software: Present & Future



“I have a vested interest in the future, because I plan on living there.”

- *Neil Gershenfeld, MIT Media Lab*



“The future is here.
It's just unevenly distributed.”

- *William Gibson, author*

Recent Open-Source Developments

Interesting <Times> Ahead

- Mah Police tender: 1,500 PCs running Linux with Devnagari
- Indian govt (CDAC, NCST) release Linux in 5 languages
- Red Hat revenues up 36% last quarter; profitable
- Sun releases Java Desktop System
- Virus fear could hurt Windows (WSJ headline)
- Novell buys Ximian
- China, Korea, Japan working on open-source Asian OS
- Brazil recommends Linux in government
- Munich shifts 14,000 desktops to Linux
- Nutch: an open-source search engine under development
- Chandler: next-generation PIM (Mitch Kapor)
- Lindows PCs for USD 169-199

Information Flow

- Our Open-Source Usage and Experience
- Open-Source as Business
- Open-Source in India
- Open-Source and Affordable Computing
- Opportunity: SME Market
- Open-Source Project Ideas

Netcore Solutions

Engineering Tech's Next Revolution

- Creating disruptive innovations to bridge the digital divide in technology's next markets
 - Next set of opportunities will be driven by the twin themes of Utility and Affordability
 - Use new and emerging innovations to build Affordable Tech Utilities
- Focus: SMEs and Rural Markets
 - Pragatee, Emergic (Affordable Computing Solutions)
 - Deeshaa (Rural Infrastructure and Services Commons)
 - BlogStreet (Weblogs, RSS, Publish-Subscribe Web)11

Open Source Software in IW and Netcore - *users since 1994*

- IndiaWorld (1994-2000)
 - All websites built on Intel+Linux platform
 - Samachar.com, Khel.com, Khoj.com, Bawarchi.com
 - Hosted 150+ corporate websites
- Netcore (1998-present)
 - MailServ: Email, IM, Proxy, Firewall, Anti-Virus, Global Address Book – on Linux
 - 200+ corporate customers, 500+ locations
 - Thin Client-Thick Server Computing within our office
 - Pragatee and Emergic on Linux
 - Support for IndLinux for language computing on Linux

- All-In-One, Affordable Server
- Messaging and Security
 - Email, Proxy Server, Firewall, Anti-Spam, Anti-Virus
- Desktop Computing
 - File and Print Server
- Information Management
 - Digital Dashboard
- Business Applications
 - Accounting, CRM, Database, Reports Generator
- Support and Services

- Suite of specialised, affordable software solutions for SMEs
- Vision: “a connected computer on every desktop”
- Enables SMEs to become intelligent, real-time enterprises.

- Messaging and Security: Emergic MailServ
- Desktop Computing: Emergic Freedom
- Information Management: Emergic Topsight
 - Traction, Digital Dashboard, Events Horizon, Info Aggregator
- Business Applications: Emergic Enterprise
 - Integrated eBusiness suite, Visual Biz-ic, Forms Designer
- Support and Services: Emergic Services

Our Experience

Open-Source Everywhere!

- Linux/Open-Source offers more than cost savings
 - Freedom, Flexibility; Platform to build a business on
 - Set of commodity software components that can be put together for different purposes
- Open-Source Software is more than Linux
 - Sendmail, Apache, MySQL, PostgreSQL, LTSP
 - JBoss, SQL-Ledger, OpenCRM, SpamAssassin
 - Evolution, OpenOffice, Mozilla, KDE/Gnome, GAIM

In Our Office

Linux Desktops

- Linux on the desktop is a reality
 - Email, Web Browser, Office Suite, IM Client, PDF Reader/Writer, File Manager
- Server-centric computing
 - Thin Clients (old, low-cost PCs) with Thick Server
 - Simplified Administration
 - OpenOffice can read/write MS-Office file formats
 - Virus-free, spam-free environment!

Open-Source as Business

Is there Money to be Made?

- Open-Source as the operating platform
 - eBay, Amazon, Yahoo, Google
- Open-Source products, solutions and support
 - IBM, HP, Dell, Red Hat, Suse, Sun
 - MySQL, JBoss Group, Codeweaver
 - Six Apart (MovableType and TypePad)
- Open-Source ancillary services
 - Lindows (hardware integration, software subs.)
 - O'Reilly (books and conferences)

Open-Source in India

Too Little, Too Slow, But...

- Software Market: Piracy and Non-consumption
- Server-side usage increasing
- Open Office on desktops
- Lack of Government support
- Windows/Office hardwired into school curriculum
- Lack of a packaged software distribution network

- Need to shift from consumption to production
- Software development opportunity - can we lead the world?
- Colleges as focal points for change
- Enabler of the New, Emerging India

The Great Leap

Driving Innovation from the Bottom

- Disruptive Innovations compete against nonconsumption – that is, they offer a product or service to people who would otherwise be left out entirely or poorly served by existing products and who are therefore quite happy to have a simpler, more modest version of what is available in the high-end markets.
 - Stuart Hart and Clayton Christensen (Sloan Management Review)

Is Open-Source Software a Disruptive Innovation?

OSS and Affordable Computing

Targeting the Next Billion Users

- Opportunity to build the next computing platform
- Disruptive Innovations for the next users
 - SMEs, Individuals / Families in Emerging Markets, Rural
 - Focus not on competition, but non-consumption
 - R&D Costs have to be minimal
 - Lag hardware by one generation; use latest software
 - From India to other emerging markets
- Low-Cost Computers
- Server-centric Computing
- Linux and Open-Source Software
- Localisation (Language Support)
- Remote Server Management

Opportunity: SME Problem Statement

3 million in India; 75 million globally

- SMEs are caught in two traps: technology and marketing
- Computing is still expensive
- Business benefits of using technology are still not clear to most SMEs
- As a result, SMEs use very little of computing – hardware and software
- SMEs do not have access to real-time information
- Supporting and managing technology is still a challenge
- There is no easy way to sell software to SMEs
- SMEs find it hard to find other SMEs for tapping business opportunities

Solution Outline: SME Tech Utility

Need for Co-ordinated Action

- Demonstrate how connected computers and the Internet can help SME business
- Create/propose a reference IT architecture for enabling intelligent, real-time SMEs
- A connected computer for every employee for less than Rs 500 per month
- Integrated Software Bundles, built around “only handle information once”
- Development platform for ISVs to build vertical / local solutions
- Managed services to remotely manage IT at SMEs
- A virtual marketing and connection mechanism for SMEs

7 SME Innovations

Each is an OSS Business Opportunity

- All-In-One Server-Software Solution
- Rs 2,500 Thin Client (Rs 5,000 with monitor)
- New Desktop
- Visual Biz-ic
- Social Network Software
- Information Marketplace
- Software Distribution Network

Simplicity, Affordability, Integrated, Managed

Open-Source Project Ideas

From Consumption to Production

- VMWare-clone: Run Linux and Windows on the same server
- Windows Terminal Services Clone
- Reverse-engineer Tally File Formats!
- New Desktop / Microcontent Client / Web Services Browser
- Social Software: Blogs, Wikis, People Networks
- Visual Biz-ic for Business Process Management
- Local Language Software and Applications
- RSS-based Information Marketplace
- Outsourced Linux Support / Development Centre
- Open Office Call / Support Centre

The Next New Thing

10X Change

- When a change in how some element of one's business is conducted becomes an order of magnitude larger than what that business is accustomed to, then all bets are off. There's wind and then there's a typhoon, there are waves and then there's a tsunami.

- Andy Grove (Intel)

*Is Open-Source the Software Industry's
Tsunami?*



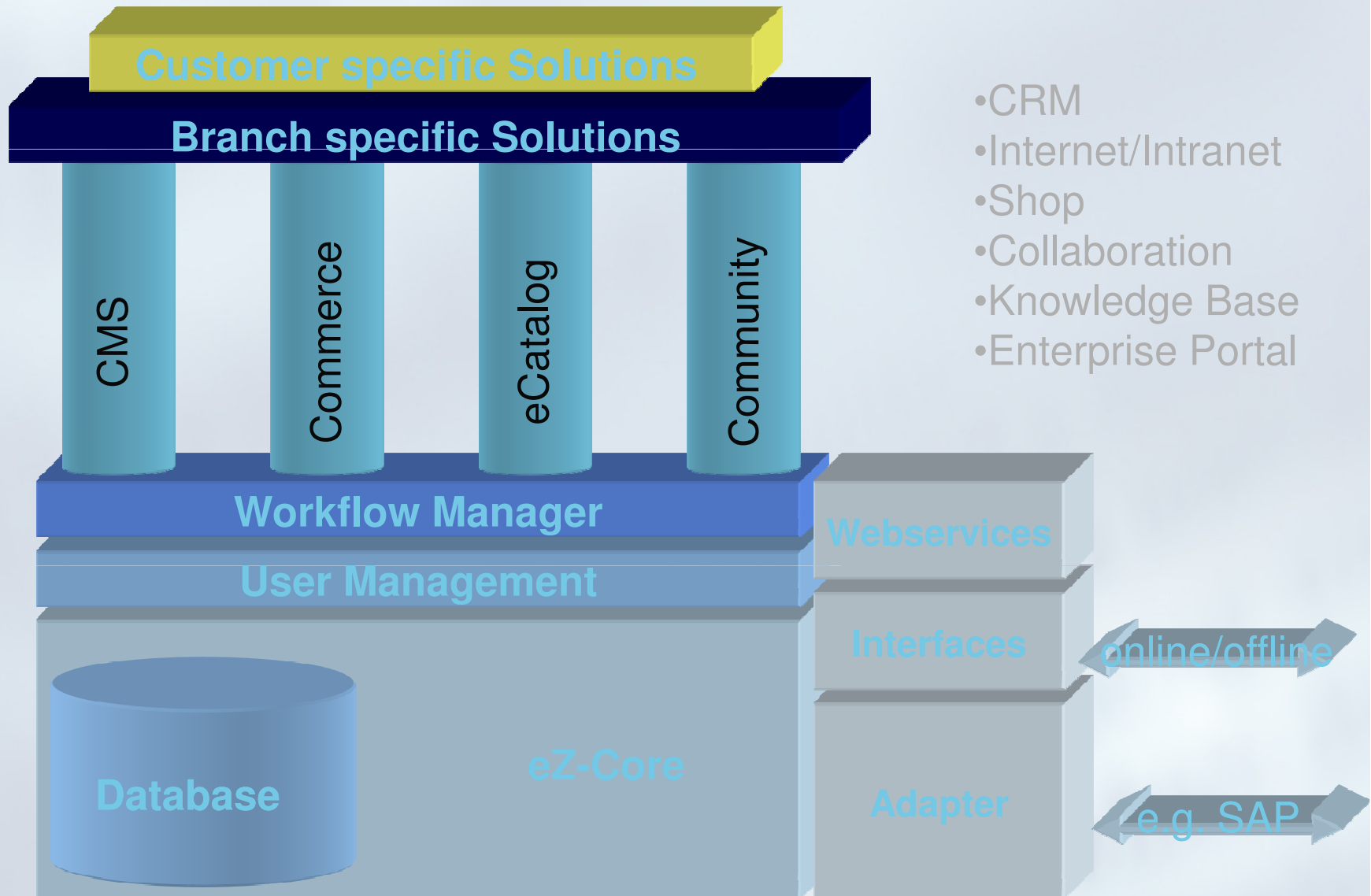
Moreover

Resources

- SourceForge, Freshmeat for Software
- Linux Today, Linux Journal, Linux Weekly News
- O'Reilly and ora.com for Books and Tech Articles
- Slashdot.org for Community
- Emergic.org (my weblog) for links, analysis, comment

Benefits of OSS to SME's Business Solutions

OSS for SME solutions



OSS in Special Application Areas

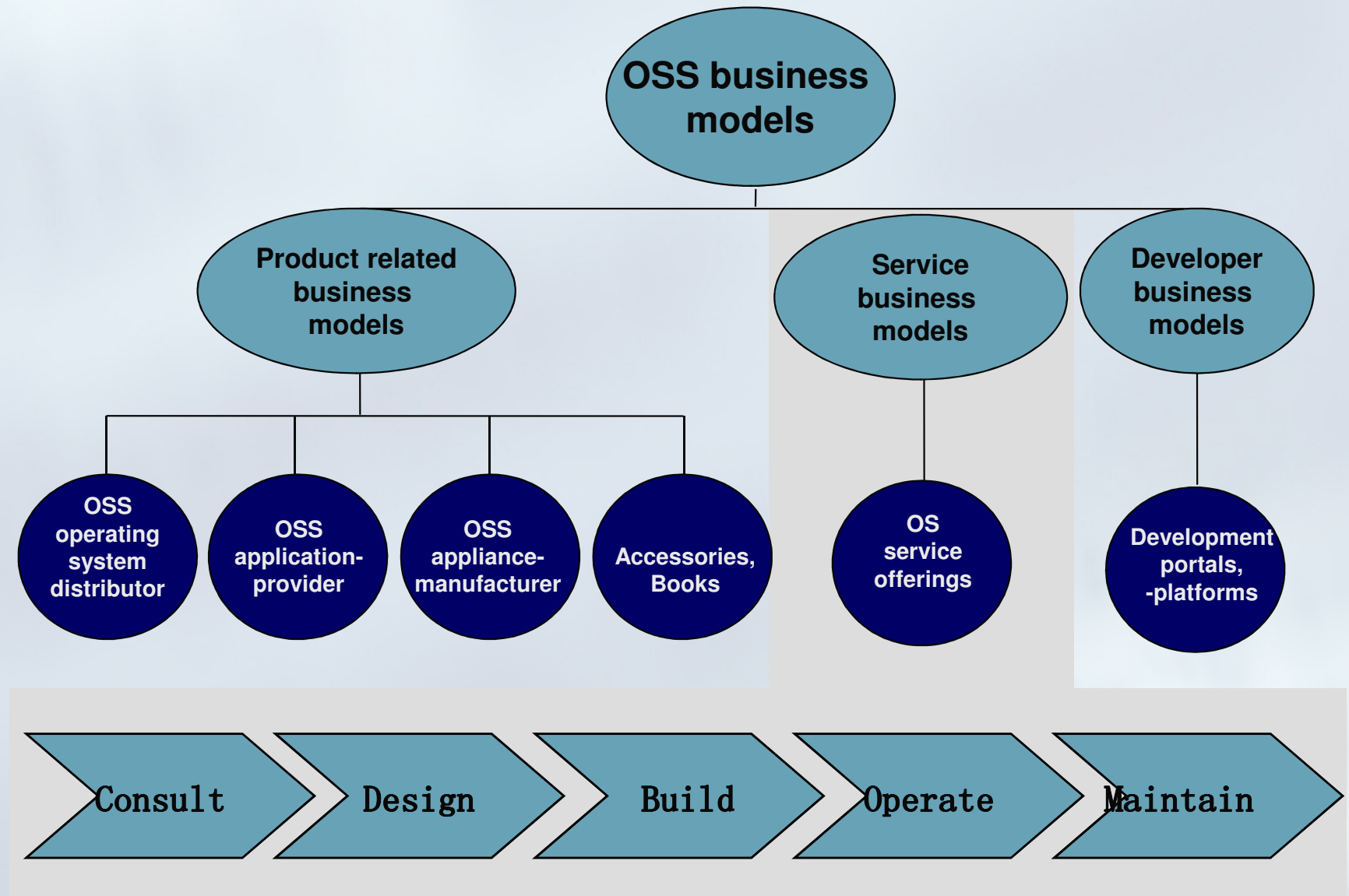
OSS in Special Application Areas - SCM

SCM - complex, standardized software solutions for collaboration across different steps of the value chain

Small size of community, often causes lack of quality and support in some specialized application areas

Name	Developing Members
9 of 14 analyzed Projects	
Smart ERP+CRP	45
EzyBiz	2
OSSUITE	7
OXERP	3
Openlogistics	9
MIS	3
ConTuX	8
phpMyERP	3
Supply Chain Management	3

OSS in Business Models

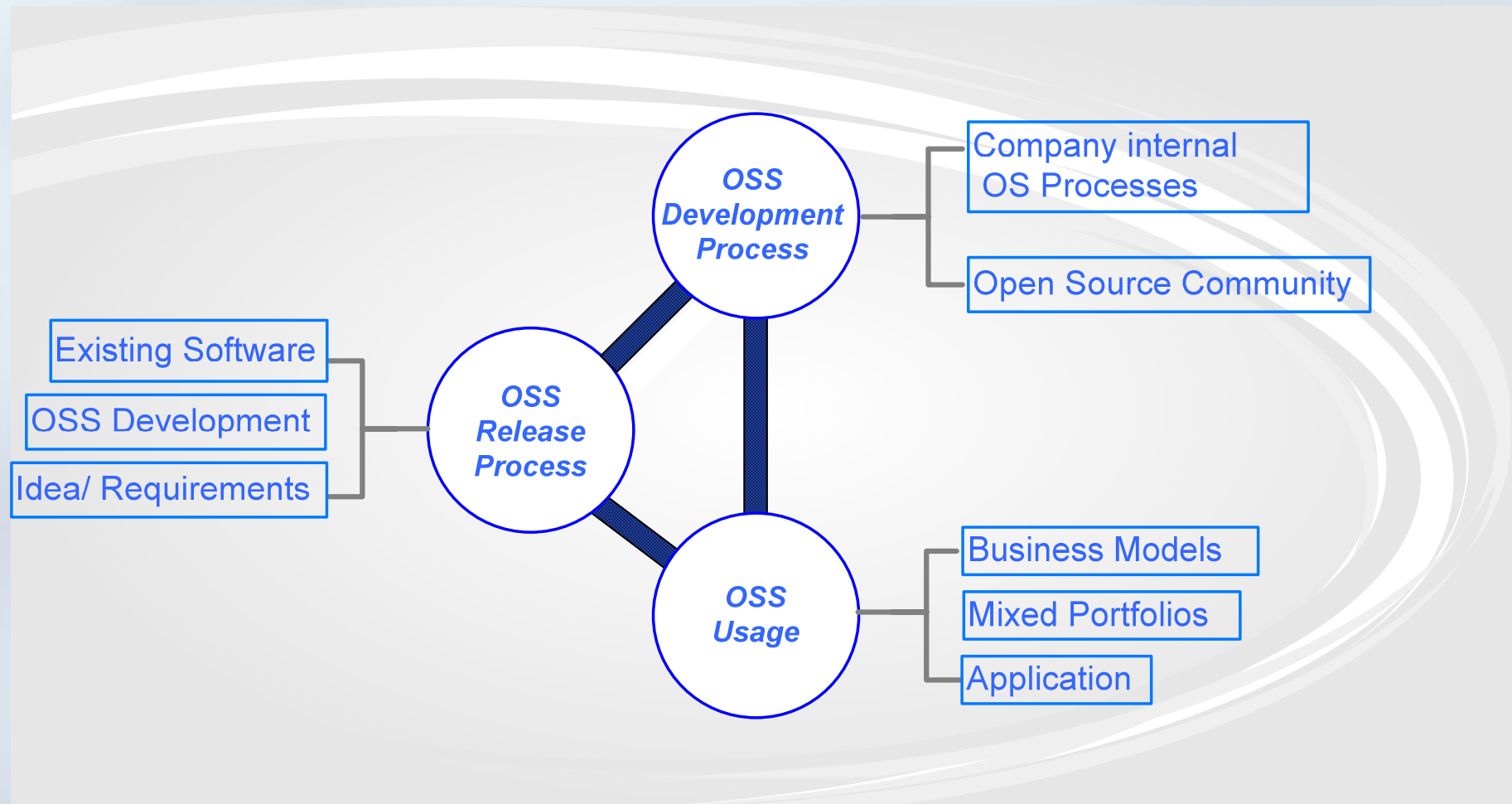


Upcoming Business Models

- OSS may influence a modularization of tasks and services concerning software, e.g. formerly bundled in a software developing company
 - Project management
 - Providing a platform
 - Documentation
 - Quality assurance/ Testing
 - Support
 - ...
- OSS model of procedure enables participation of different partners in a distributed software development process
- Driving forces may be: gaining common agreement, core competence focusing, efficiency

OSS Fields of Action

Open Source Fields of Action



Conclusion

Open Source Software

- Enlarging and enriching the portfolio of available components
- Improving customer's benefit following the idea of „best of both worlds“
- Establishing new business models

Open Source Lessons Learned

- Impulse for evolutionary and distributed software development

Questions...

