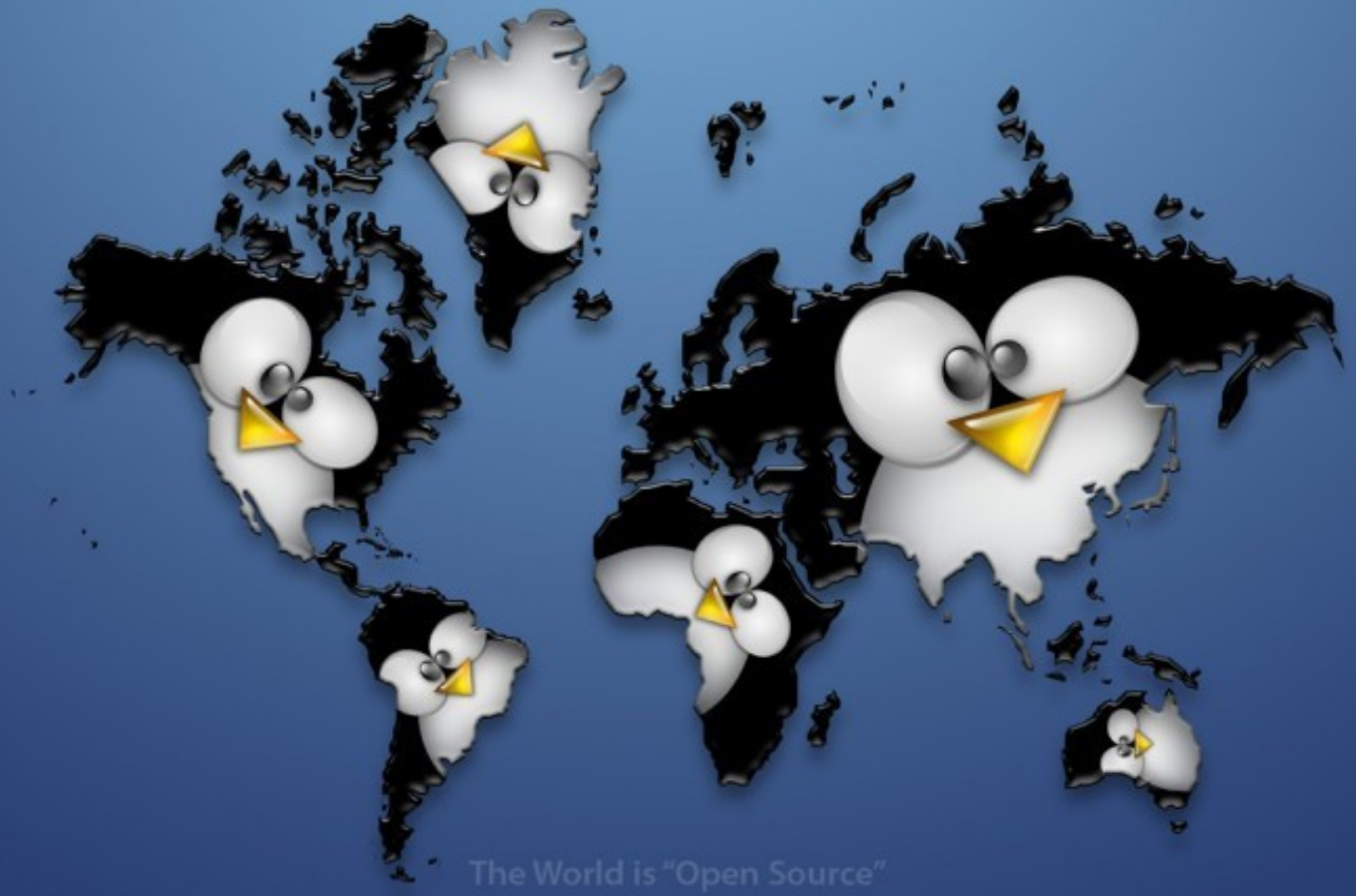
Slobodan software nekad i danas

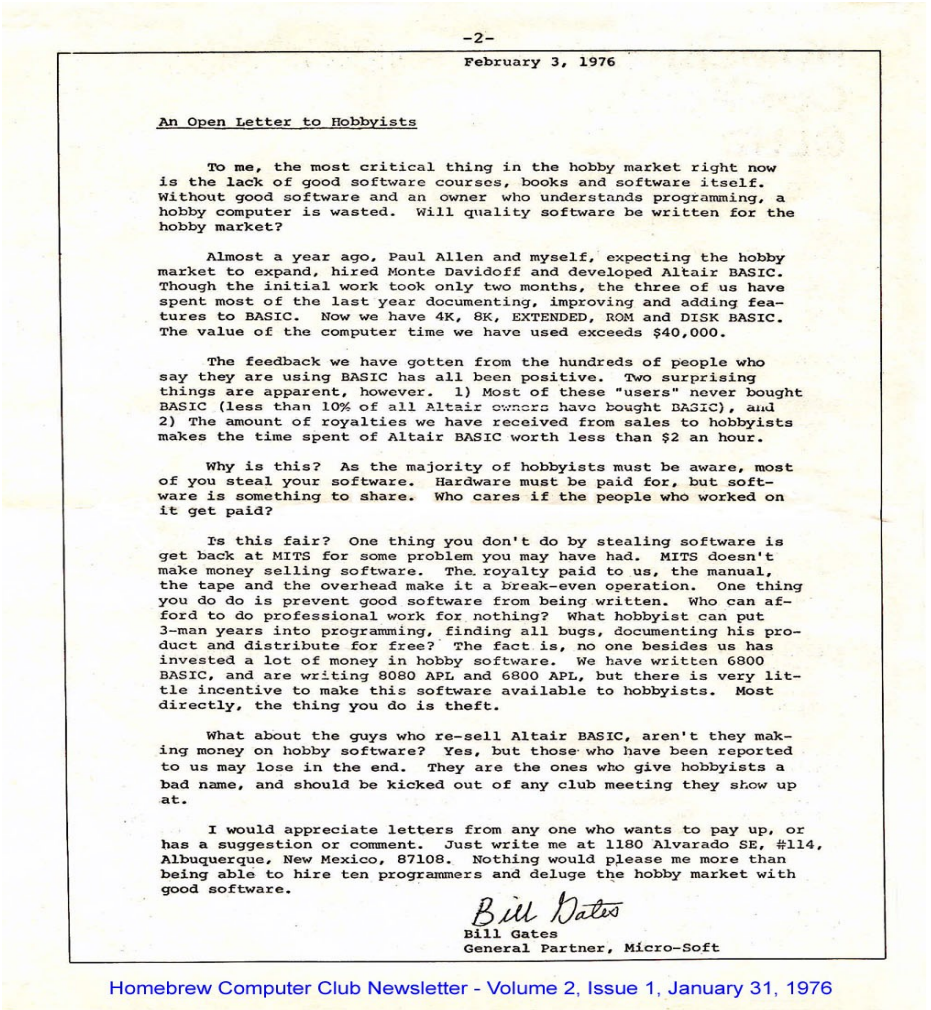


od hakerske igračke do multimilijunskih korporacija

Kako je sve počelo?

- '60ih godina – počeci komercijalnih računala
- hardware izrazito skup, software većinom besplatan
- 'prototip' slobodnog softwarea i otvorenog koda
- IBM

Kako je sve počelo?



-2-

February 3, 1976

An Open Letter to Hobbyists

To me, the most critical thing in the hobby market right now is the lack of good software courses, books and software itself. Without good software and an owner who understands programming, a hobby computer is wasted. Will quality software be written for the hobby market?

Almost a year ago, Paul Allen and myself, expecting the hobby market to expand, hired Monte Davidoff and developed Altair BASIC. Though the initial work took only two months, the three of us have spent most of the last year documenting, improving and adding features to BASIC. Now we have 4K, 8K, EXTENDED, ROM and DISK BASIC. The value of the computer time we have used exceeds $40,000.

The feedback we have gotten from the hundreds of people who say they are using BASIC has all been positive. Two surprising things are apparent, however. 1) Most of these "users" never bought BASIC (less than 10% of all Altair owners have bought BASIC), and 2) The amount of royalties we have received from sales to hobbyists makes the time spent of Altair BASIC worth less than $2 an hour.

Why is this? As the majority of hobbyists must be aware, most of you steal your software. Hardware must be paid for, but software is something to share. Who cares if the people who worked on it get paid?

Is this fair? One thing you don't do by stealing software is get back at MITS for some problem you may have had. MITS doesn't make money selling software. The royalty paid to us, the manual, the tape and the overhead make it a break-even operation. One thing you do do is prevent good software from being written. Who can afford to do professional work for nothing? What hobbyist can put 3-man years into programming, finding all bugs, documenting his product and distribute for free? The fact is, no one besides us has invested a lot of money in hobby software. We have written 6800 BASIC, and are writing 8080 APL and 6800 APL, but there is very little incentive to make this software available to hobbyists. Most directly, the thing you do is theft.

What about the guys who re-sell Altair BASIC, aren't they making money on hobby software? Yes, but those who have been reported to us may lose in the end. They are the ones who give hobbyists a bad name, and should be kicked out of any club meeting they show up at.

I would appreciate letters from any one who wants to pay up, or has a suggestion or comment. Just write me at 1180 Alvarado SE, #114, Albuquerque, New Mexico, 87108. Nothing would please me more than being able to hire ten programmers and deluge the hobby market with good software.

Bill Gates

Bill Gates
General Partner, Micro-Soft

Homebrew Computer Club Newsletter - Volume 2, Issue 1, January 31, 1976

- ranih '70ih još nije razvijen osjećaj novčane i tržišne vrijednosti softwarea
- Nastanak manjih računala dovodi do prilike za zaradu softverom
- Bill Gates piše “Open Letter to Hobbyists”

U N I X

- Operativni sustav koji je promijenio svijet računala
- 1969. **AT&T UNIX**
- Ken Thompson i Dennis Ritchie
- kod dostupan u svrhe znanstvenog rada

U N I X

- 1978. **BSD UNIX**

  - izmjenjen i nadograđen AT&T Unix
- **BSD** licenca
- 1982. **SUN OS**

  -zatvoren kod
- Nastaje pravi boom proprietary softwarea

Richard Stallman

- Glavni pokretač i osnivač free software pokreta
- MIT haker

- **1983. GNU Project**
- **1985. Free Software Foundation**
- **1989. GPL licenca**

GNU Project

- 1983. - izvorna reakcija na proprietary software
- Cilj: stvaranje otvorenog i slobodnog operativnog sustava dostupnog svakome
- **GNU** -> GNU's Not Unix

- "a sufficient body of free software [...] to get along without any software that is not free."

Free Software Foundation

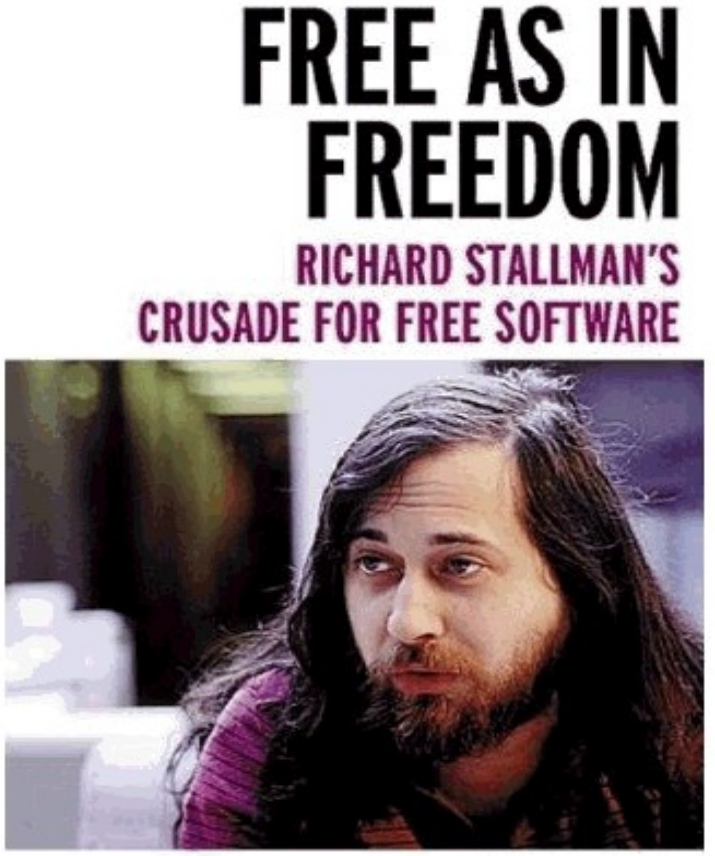
- 1985. osniva se kao neprofitna udruga u svrhu promoviranja slobodnog softwarea

- Utemeljen pojam “**free softwar**e”
- Organizacija objavljuje **službenu definiciju free softwarea**, 1986.

FREE SOFTWARE

- Free software != freeware
- Slobodan != besplatan
- “Free software is a matter of liberty, not price. Think of 'free' as in 'free speech', not as in 'free beer'"
- Sloboda korisnika da koristi, kopira, distribuira, mijenja i poboljšava software
- Korisniku se osiguravaju **4 ključne slobode**

FREE SOFTWARE FOUNDATION



Free Software

4. ključne slobode

(freedom 0)

The freedom to run the program, for any purpose.

Free Software

4. ključne slobode

(freedom 1)

The freedom to study how the program works, and change it to make it do what you wish. Access to the source code is a precondition for this.

Free Software

4. ključne slobode

(freedom 2)

The freedom to redistribute copies so you can help your neighbor.

Free Software

4. ključne slobode

(freedom 3)

The freedom to distribute copies of your modified versions to others. By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

GPL

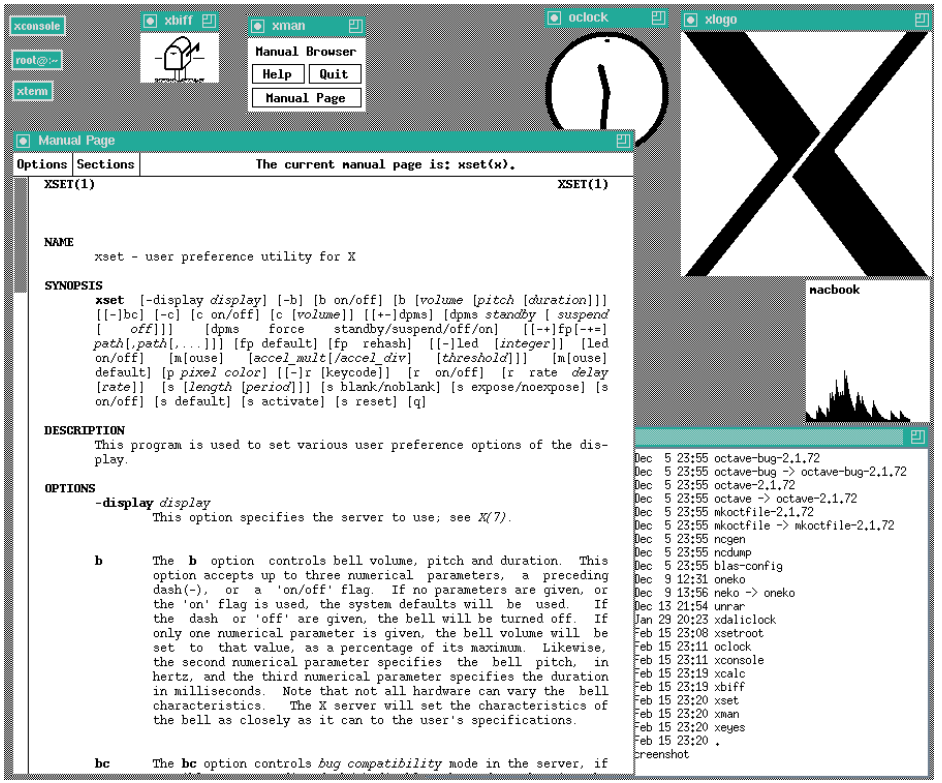
- GNU General Public License
- **Copyleft**
- GPL osigurava korisniku 4 ključne slobode Free softwarea

- Izmjenjen software mora ostati pod GPL licencom

- Krajem '80ih, GNU OS dostiže visoku razinu razvoja
- 1989. osnovana prva kompanija za free software podršku - **Cygnus**
- Dolaze do izražaja prvi značajni projekti otvorenog koda:

  - X Window system (MIT)

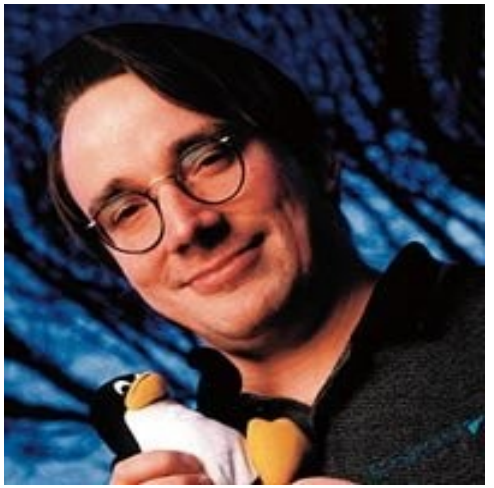
  - razvitak TeX-a



Linus Torvalds

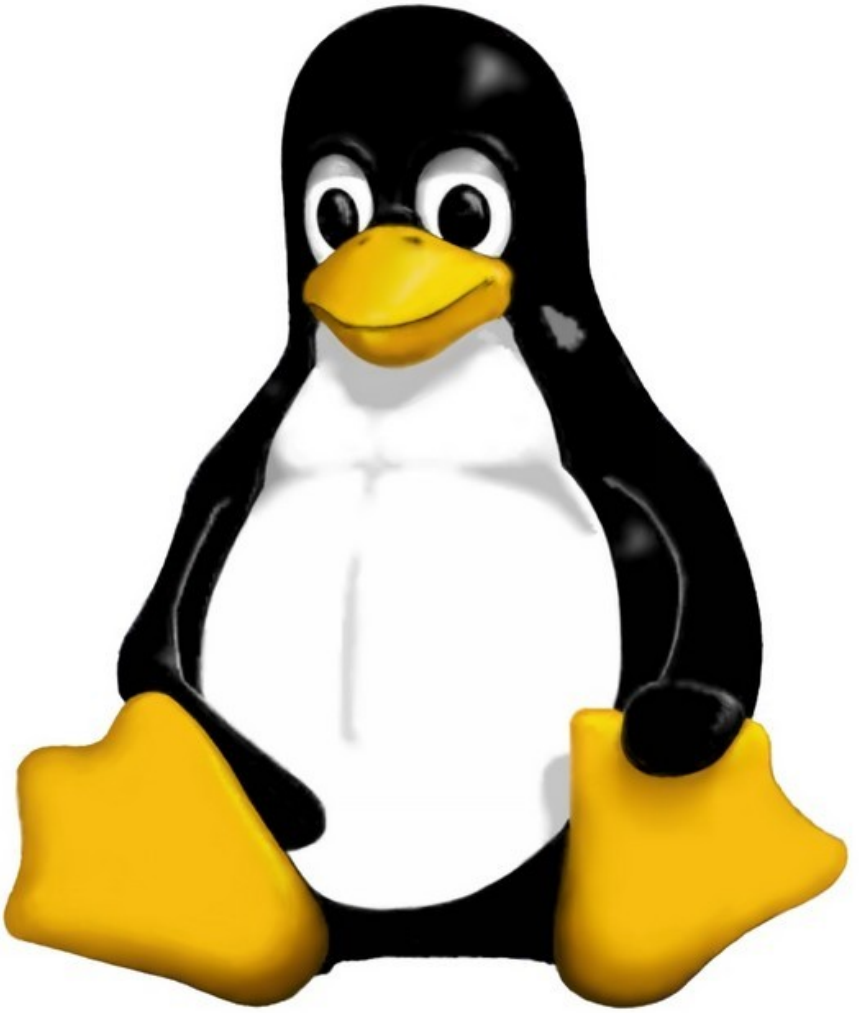
- Nezadovoljan **MINIX**-om, kao student računalstva, odlučuje se na stvaranje vlastitog operativnog sustava
- **1991. piše prvu inačicu Linux kernela** (jezgre)

- *“I'm doing a (free) operating system (just a hobby, won't be big and professional like GNU)”*

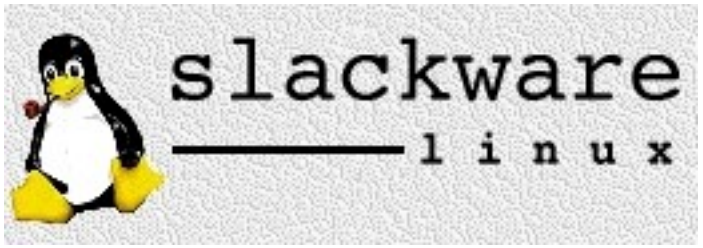


LINUX

- U počecima ga razvijaju programeri i hakeri okupljeni na internetu
- Kernel predstavlja idealnu završnu komponentu GNU OS-a
- Spajanje Linux jezgre i GNU aplikacija
- 1992. - GPL - nastaje (**GNU)Linux OS**



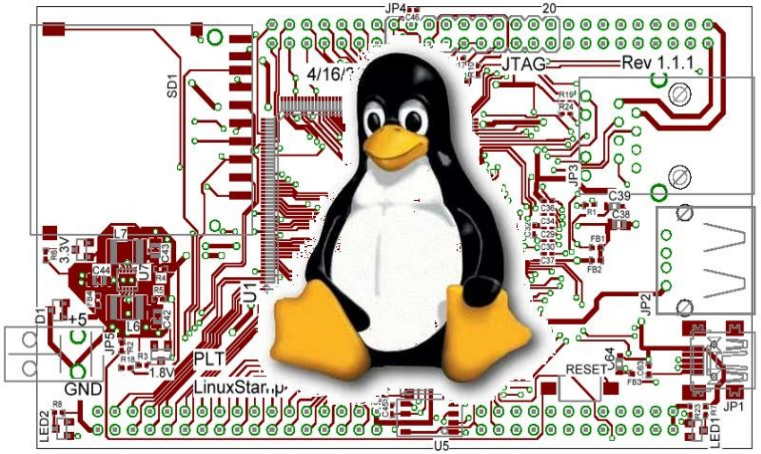
LINUX



- 1993. najstarija Linux distribucija – **Slackware**
- Kasnije iste godine - **Debian** project
- 1994. Linux kernel 1.0
- Nastaju prve Linux kompanije - **Red Hat i SUSE**

LINUX

- 1991. - 10.000 linija koda i 1 korisnika
- 1992. - 40.000 linija koda i 1000 korisnika
- 1993. - 100.000 linija koda i 20.000 korisnika



- Sredinom '90ih Linux postaje ozbiljna alternativa mnogim firmama
- 1995. - 250.000 linija i 500.000 korisnika
- 1997. - 800.000 linija i 3.5 milijuna korisnika

LINUX

- Krajem '90ih popularnost Linuxa ubrzano raste
- 1998. mega-kompanije **IBM, Compaq i Oracle** objavljuju službenu podršku za Linux
- Server > desktop

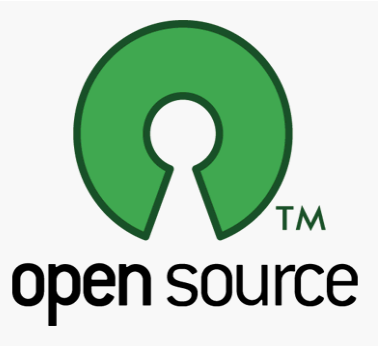
- 1998. - 1.5 milijuna linija koda i 7.5 milijuna korisnika
- 1999. - 12 milijuna korisnika

Open Source pokret

- **Eric Raymond** piše "**The Cathedral and the Bazaar**" 1997.
- Netscape otvara kod
- “Open source” umjesto “free software”
- **Open Source Initiative** 1998.
- **Bruce Perens**
- 10 kriterija open source softwarea

Open Source

10 točaka definicije

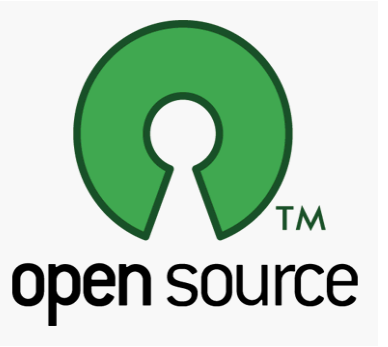


1. Free Redistribution

The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.

Open Source

10 točaka definicije

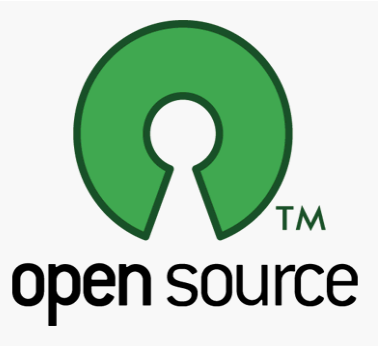


2. Source Code

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge.

Open Source

10 točaka definicije

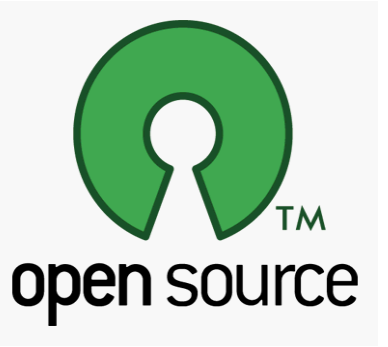


3. Derived Works

The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.

Open Source

10 točaka definicije

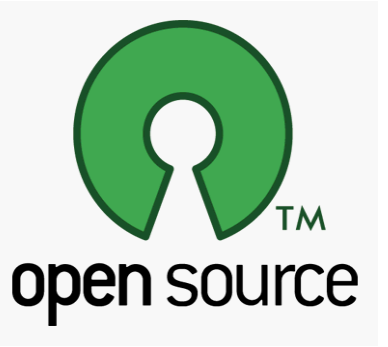


4. Integrity of The Author's Source Code

The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time.

Open Source

10 točaka definicije

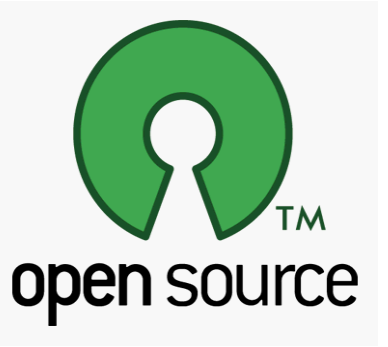


5. No Discrimination Against Persons or Groups

The license must not discriminate against any person or group of persons.

Open Source

10 točaka definicije

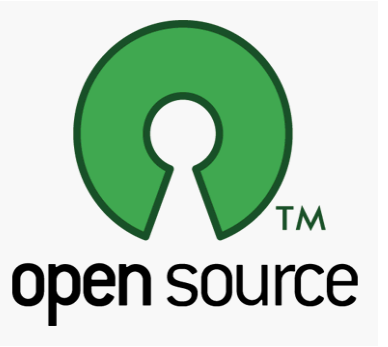


6. No Discrimination Against Fields of Endeavor

The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.

Open Source

10 točaka definicije

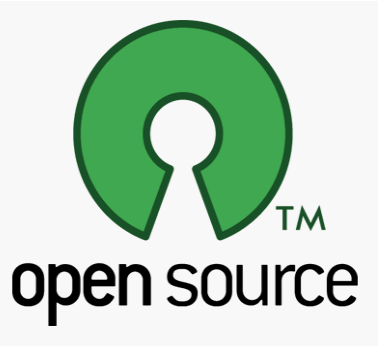


7. Distribution of License

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.

Open Source

10 točaka definicije

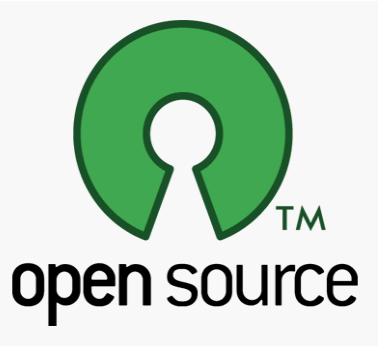


8. License Must Not Be Specific to a Product

The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.

Open Source

10 točaka definicije

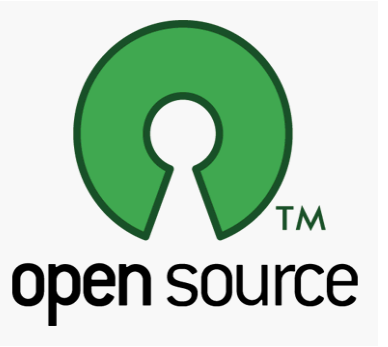


9. License Must Not Restrict Other Software

The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

Open Source

10 točaka definicije



10. License Must Be Technology-Neutral

No provision of the license may be predicated on any individual technology or style of interface.

Open Source/Free Software

"Open source is a development methodology; free software is a social movement."

- FSF – koncept sobode, inzistiraju na terminu “free”
- Općeprihvaćen zajednički termin **FOSS ili FLOSS**

FOSS

- **Najčešći primjeri:**
  - **Apache**
  - **MySQL**
  - **PHP**
  - **OpenOffice.org**
  - **phpBB**
  - **Mozilla**
  - **Perl**
  - **Media Wiki**
  - **WordPress**
  - **Joomla**
  - **Blender (3D)**
  - **GIMP**
  - **Audacity**
  - **Moodle**
  - **...**

Operating system

Webserver

FreeBSD

Operating system

Programming language

Thunderbird
Email client

Office productivity suite

Programming language

Web-based
collaboration software

Relational database
management system

HTML editor

Media player

Desktop environment

Programming language

GNU compiler collection

Cross-platform
remote control

Mail server software

Software development tool

The GIMP
Bitmap graphics editor

3D graphics package

Internet file distribution

Desktop environment

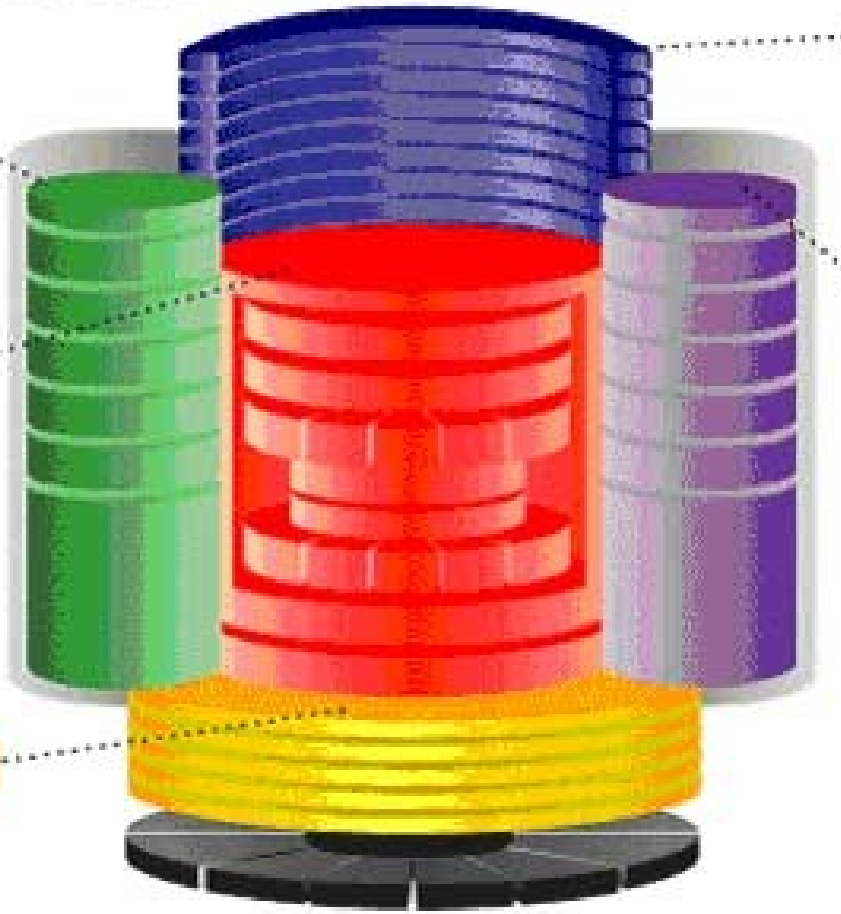
GNU/Linux distribution

FOSS

- **Primjena FOSSa:**
  - **Wikipedia**
  - **Google**
  - **Yahoo**
  - **Amazon**
  - **Cisco**
  - **US Government agencies**
  - **NASA**
  - **US army**
  - **US postal service**
  - **Toyota Motors**
  - **Ivo Josipović :)**

OPEN SOURCE SHORT LIST

Open source software permeates the software stack. This summary highlights the most prominent open source software in each area of the stack.



CLIENTWARE
- OpenOffice
- Mozilla Firefox
- Ximian Evolution
- GIMP

MIDDLEWARE
- Openadaptor
- OpenLDAP
- Apache Axis
- OpenJMS
- Hibernate

PLATFORMS
- Linux
- FreeBSD
- Globus/OGSA

MANAGEWARE
- MX4J
- MC4J
- CVS

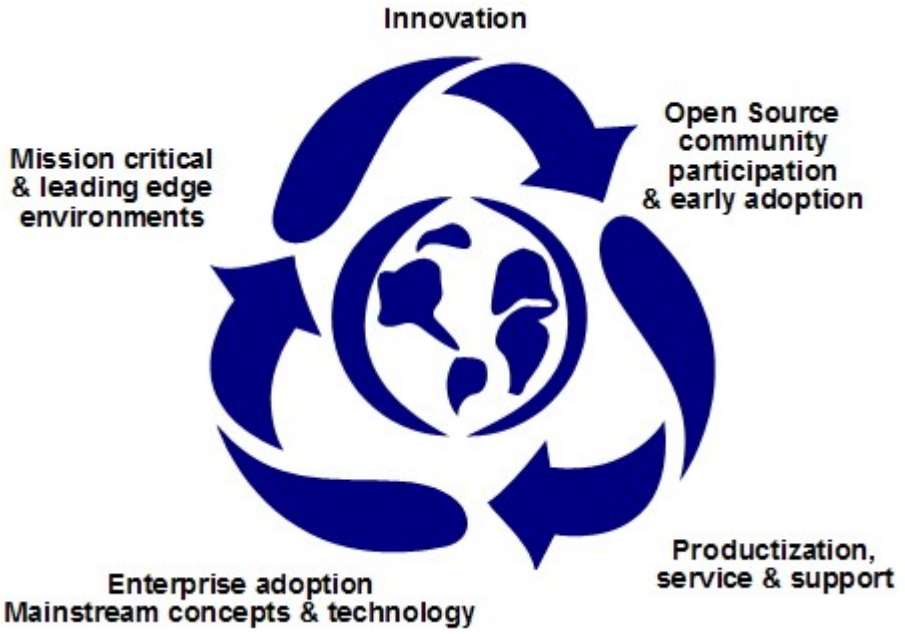
SERVERWARE
- MySQL
- Apache
- JBoss
- OpenCMS
- Jetspeed
- Samba
- Sendmail

Source: CSC with Flashmap Systems

Linux kompanije

- Razvojem Linuxa i FOSSa nastaju različite kompanije
- Promidžba i distribucija
- Linux ne posjeduje niti jedna kompanija
- Vremenom se stječe zarada, kompanije postaju korporacije
- Naplata podrške, OS većinom besplatan

- Ogromna ulaganja u FOSS

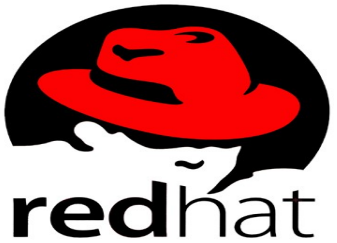


RED HAT

- 1994. - najstarija Linux kompanija
- jedna od najvećih kompanija koja podržava slobodan software
- Počeli kao mala firma, danas korporacija sa 1500 developera
- Mark Ewing
- 12% Linux kernela

- Danas vodeća kompanija u Linux svijetu
- **RH Enterprise Linux**
- **Fedora**

RED HAT



GODIŠNJI PRIHOD:

652.000.000 $

“Despite these challenges, Red Hat seems destined to thrive. $652 million in revenue doesn't come even remotely close to matching Microsoft's tens of billions, but it's definitely not pocket change, either.”

NOVELL

- 1983.
- Do početka '90ih jedna od vodećih IT tvrtki
- Tek 2003. Novell se okreće Linuxu i FOSSu.
- **Open SUSE**
- **SUSE**

  Linux Enterprise

NOVELL

Novell.

GODIŠNJI PRIHOD:

862.000.000 $

2006. potpisano partnerstvo s Microsoftom

Company Name	# of Changes	% of Total
None	11,594	13.9%
Unknown	10,803	12.9%
Red Hat	9,351	11.2%
Novell	7,385	8.9%
IBM	6,952	8.3%
Intel	3,388	4.1%
Linux Foundation	2,160	2.6%
Consultant	2,055	2.5%
SGI	1,649	2.0%
MIPS Technologies	1,341	1.6%
Oracle	1,122	1.3%
MontaVista	1,010	1.2%
Google	965	1.1%
Linutronix	817	1.0%
HP	765	0.9%
NetApp	764	0.9%
SWsoft	762	0.9%
Renesas Technology	759	0.9%
Freescale	730	0.9%
Astaro	715	0.9%
Academia	656	0.8%
Cisco	442	0.5%
Simtec	437	0.5%
Linux Networx	434	0.5%
QLogic	398	0.5%
Fujitsu	389	0.5%
Broadcom	385	0.5%
Analog Devices	358	0.4%
Mandriva	329	0.4%
Mellanox	294	0.4%
Snapgear	285	0.3%

preko 3,200 developera iz 200 companija pridonosi razvoju Linux kernela

Kernel danas => 6,399,191 linija koda

LINUX Kernel == $10.8 billion

“*The total development cost represented in a typical Linux distribution was $1.2 billion. We've used his tools and method to update these findings. Using the same tools, we estimate that it would take approximately $10.8 billion to build the Fedora 9 distribution in today's dollars, with today's software development costs. Additionally, it would take $1.4 billion to develop the Linux kernel alone. “*

Ars Technica OS market share: December 2009

Percent

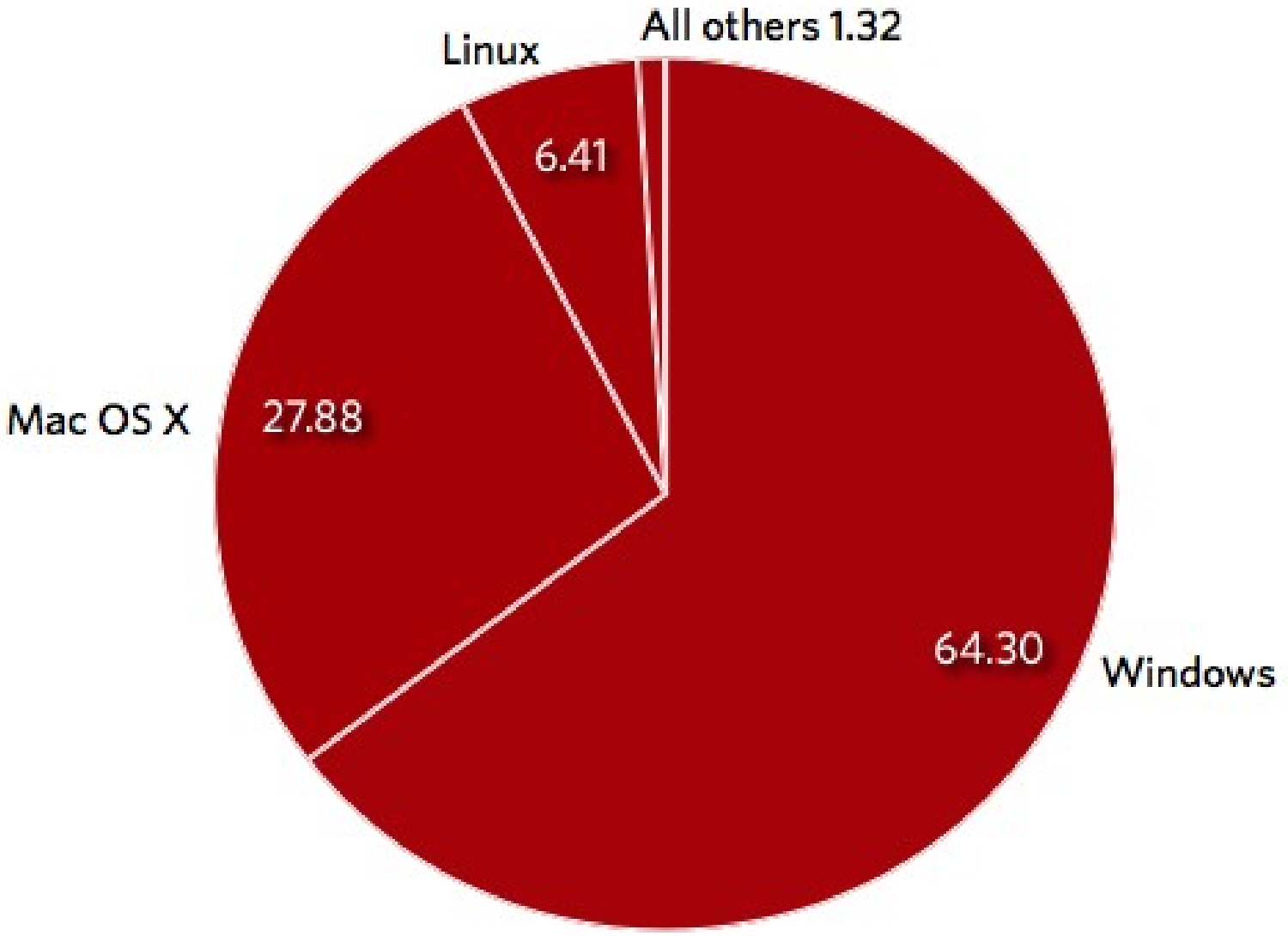
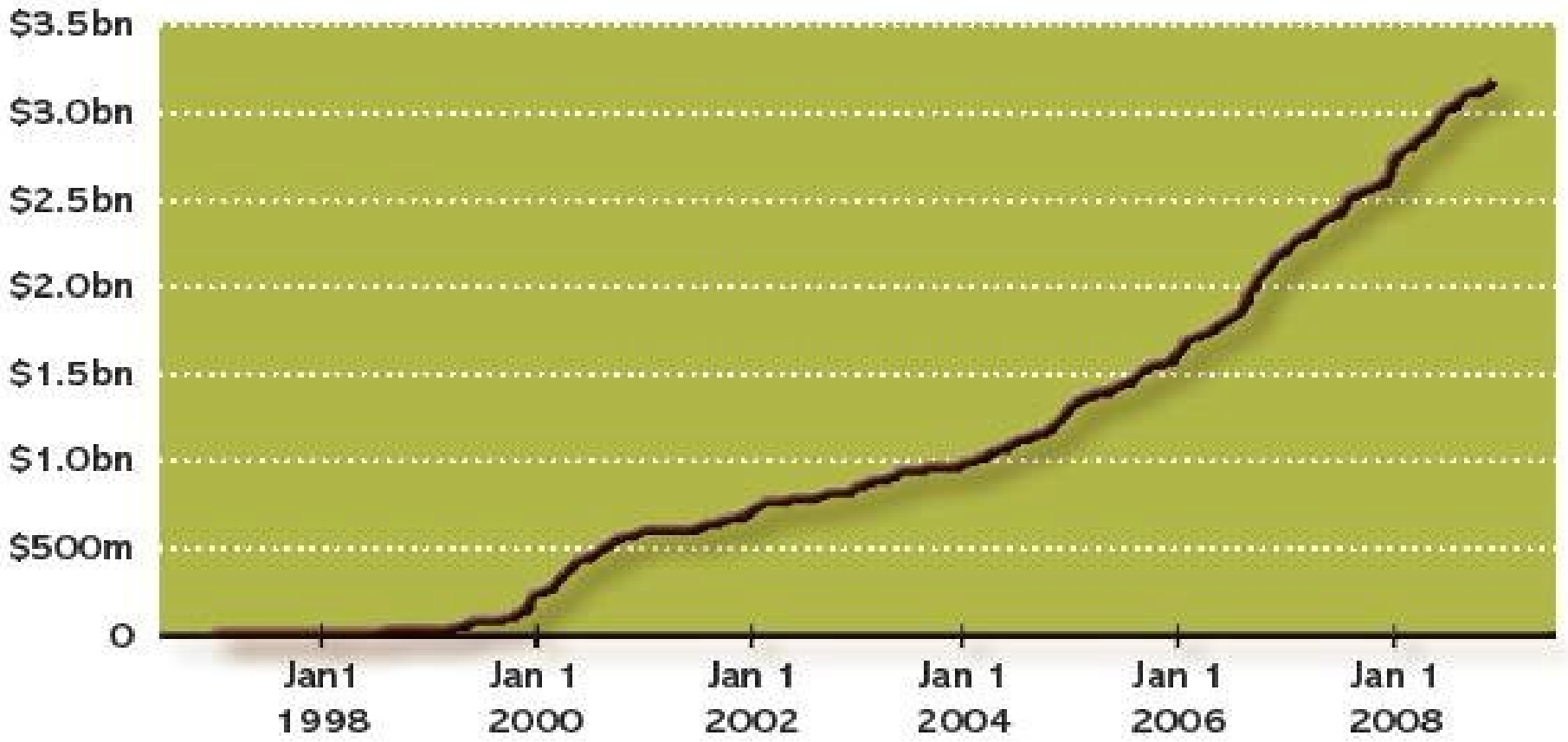
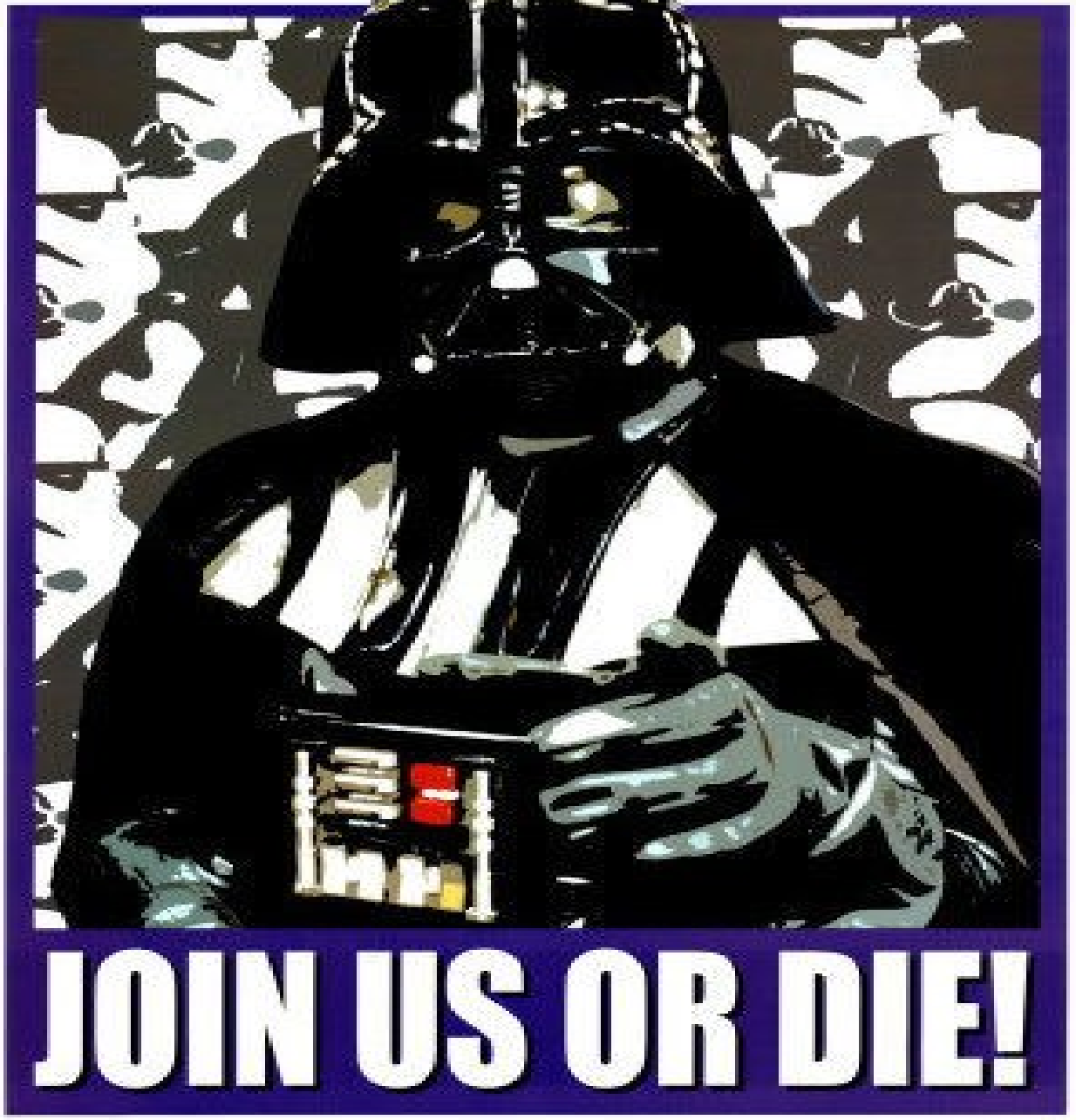


FIGURE 5: CUMULATIVE INVESTMENT IN OPEN SOURCE VENDORS 1997-2008



FOSS ?= $$

FOSS u budućnosti?

“Free software Micro$oft” ili dobri stari GNU project?

Microsoft®