

# The Economics of Free Software

*and why it matters for developing countries*

Seminar on “Contributions to the  
Development Agenda on Intellectual Property  
Rights”

Maastricht, Sep 23-25, 2005

**Rishab Aiyer Ghosh**  
[rishab@dxm.org](mailto:rishab@dxm.org)

MERIT/UNU-INTECH

# Software in society

**“Access [to ICTs] is not enough, it is the ability to create, to add value, that is important”**

**Felipe Gonzalez**  
**former Spanish Prime Minister,**  
Speaking at Open Source conference in Málaga, Spain, 18/2/04

# What is “free software”?

Defined in 1984 as software with the:

- Freedom to run for any purpose.
- Freedom to change and modify.
- Freedom to copy and distribute
- Freedom to share improvements.

All freedoms are commercial and non-commercial: you can sell “free software”

# “Open source”, “libre ...”, FLOSS

- English confuses free as in freedom with free as in no price
- So “open source” was coined in 1997 as a business-friendly term for “free software”
- In French, Spanish, “libre” is not “gratis”, so it's always been *logiciel libre, libre software...*
- It's all about the same software:  
Free/Libre/Open Source Software (FLOSS)

# Why Free/Libre/Open (FLOSS)?

- **Cost – *Total Cost of Ownership!***  
The broad, socio-economic change long promised by ICTs would be limited to a tiny elite without FLOSS
- **Performance, flexibility, localisation**  
Many FLOSS applications provide superior performance & security; adaptation is permitted, e.g. for local languages
- **Skills development**  
FLOSS is a training environment that increases the earning capacity of community participants without any explicit investment in training: a novel form of technology transfer?

# Licence costs seem low...\*

Licensing Cost of Windows XP + Office (USA):  
**\$560\*\***

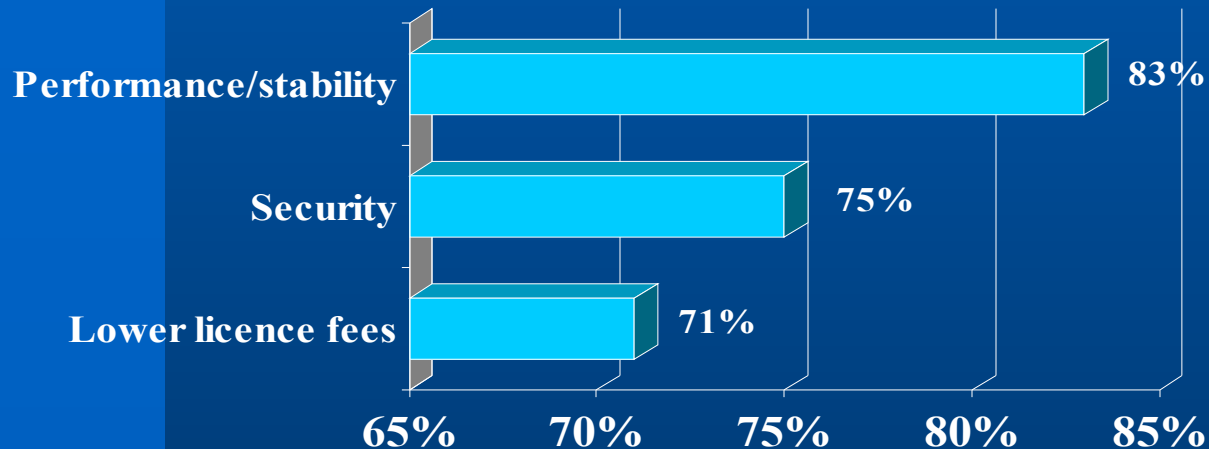
*\*\*Standard Edition, price from Amazon.com,*

*\*The view from the rich world!*

# ...and not the #1 reason for FLOSS

(even in rich countries: UK, Germany, Sweden)

## Benefits from using F/OSS



Source: FLOSS survey of user organisations, FLOSS final report, [www.flossproject.org/report/](http://www.flossproject.org/report/)

# But in Argentina...

Licensing Cost of Windows XP + Office\* in the US:  
**\$560**

**In Ecuador:**

**GDP/capita (average annual income) \$1396**

**Effective cost of Windows XP + Office (per capita)**

**4.8 months' GDP**

(I.e. the cost of a single copy is 4.8 months of average income)

\*Standard Edition – note, prices are similar worldwide



# ...Cost really DOES matter

Licensing Cost of Windows XP + Office in the US

\$560

Ecuador: GDP/capita \$1396

Effective cost of Windows XP + Office (per capita)

4.8 months' GDP

Comparing with US GDP/capita: \$35 277 p.a...

**Effective cost in \$ equivalent for a *single copy* of  
Windows XP + Office in Ecuador: \$14 149**

# ...Cost really DOES matter

Country	GDP/cap	PCs ('000s)	Piracy	WinXP Cost*	cost in GDP months
Brazil	2915	10835	56%	6777	2.3
Ecuador	1396	300	62%	14149	4.8
Egypt, Arab Rep.	1511	1010	58%	13075	4.4
India	462	6031	70%	42725	14.5
Iran, Islamic Rep.	1767	4495	n/a	11177	3.8
Peru	2051	1262	60%	9630	3.3
Sierra Leone	146	n/a	n/a	135380	46.1
United States	35277	178326	25%	560	0.2
Latin America (incl Caribbean,	4335	18703	n/a	4557	1.6
Africa	652	7636	n/a	30297	10.3

*GDP/capita in US\$, WinXP cost in \$ equivalent; Latin America incl Mexico, Caribbean*

*\*Windows + Office XP effective \$ cost calculation = \$560 \* (US GDP per capita / country GDP per capita)*

*Source: World Bank World Development Indicators Database, (2001 data); Business Software Alliance*

# Why Free/Libre/Open (FLOSS)?

- **Cost – *Total Cost of Ownership!***  
The broad, socio-economic change long promised by ICTs would be limited to a tiny elite without FLOSS. Although other barriers exist (hardware, bandwidth) software licence fees are yet another additional barrier, but can be avoided.
- **Performance, flexibility, localisation**  
Many FLOSS applications provide superior performance & security; adaptation is permitted, e.g. for local languages
- **Skills development**  
FLOSS is a training environment that increases the earning capacity of community participants without any explicit investment in training: a novel form of technology transfer?

# Why Free/Libre/Open (FLOSS)?

- **Cost – *Total Cost of Ownership!***  
The broad, socio-economic change long promised by ICTs would be limited to a tiny elite without FLOSS
- **Performance, flexibility, localisation**  
Many FLOSS applications provide superior performance & security; adaptation is permitted, e.g. for local languages
- **Skills development**  
FLOSS is a training environment that increases the earning capacity of community participants without any explicit investment in training: a novel form of technology transfer?

# Why Free/Libre/Open (FLOSS)?

- **Cost – *Total Cost of Ownership!***  
The broad, socio-economic change long promised by ICTs would be limited to a tiny elite without FLOSS
- **Performance, flexibility, localisation**  
Many FLOSS applications provide superior performance & security; adaptation is permitted, e.g. for local languages
- **Skills development**  
FLOSS is a training environment that increases the earning capacity of community participants without any explicit investment in training: a novel form of technology transfer?

# **FLOSS develops local skills**

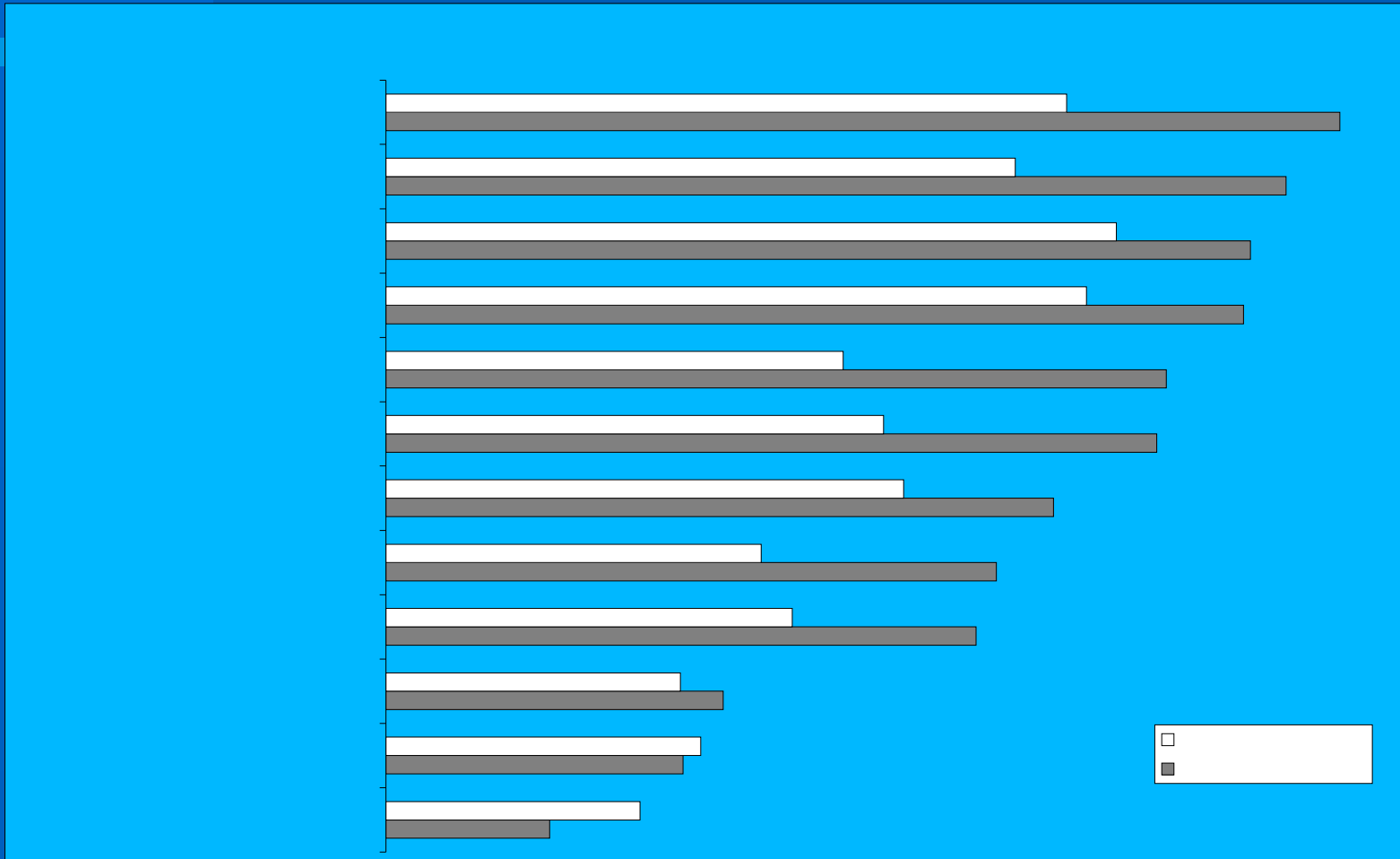
**FLOSS is a training environment that enables the ability to create and actively participate rather than passively use ICT.**

**FLOSS increases the earning capacity of community participants without any explicit investment in training: a novel form of technology transfer.**

# FLOSS develops local skills

- **Not skills *to use* FLOSS applications, but skills *learned from* participating in the FLOSS community**
- **Skills learnt through participating in the FLOSS community:**
  - programming
  - copyright law and licenses
  - teamwork and team management

# These skills are valued more





# Building *local* ICT competencies

- Be passive users of “black-box” software or active participants in global ICT?
- Being active requires being able to create, locally – and choose with the least barriers the level of creativity
- Skills development requires access to the ability to create – you don’t have to be a programmer, but you *should* have the choice.
- Relative local value addition is much higher with free software, as compared to proprietary (where the vendor controls and provides the most value)

# Extremadura: Free software society

- **Poorest region in Spain, one of the poorest in Europe**
- **Agricultural and remote with limited transport infrastructure**
- **1999: EU telecoms liberalisation threatened a digital divide**

# Extremadura: Free software society

**“We could use proprietary software to provide access to all government officials, even all doctors and lawyers, but to provide access to all *citizens* – to *everyone* – we had to use free software”**

*Carlos Castro-Castro, Director General Information Society,  
Junta de Extremadura*

# Extremadura: Free software society

- **Government-supported gnuLinEx project: Linux distribution adapted to local language *and* culture**
- **Universally adopted by entire public sector**
- **Promoted for private sector too**

# Extremadura: Free software society

- 78000 people trained in “digital literacy” programme
- Training is participatory – creation of multimedia “local knowledge” archives, regional Internet radio...
- School students using gnuLinEx
- Teachers trained to use gnuLinEx

# Free software's social potential

“Access [to ICTs] is not enough, it is the ability to create, to add value, that is important”

Free software can make more practical:

- Access – *for everyone*
- Participation – *active, by everyone*

# Policy implications of FLOSS

- It is not cast-off technology; in some sectors it is cutting edge: Amazon, Google
- It helps build a local IT services industry – and retains value added locally
- It provides an environment for training – a global university to develop local skills
- It adapts to local support – language, culture – easier than proprietary software

# Policy actions for FLOSS

- Increasing pressure against software piracy: FLOSS is the solution (“*sé legal, copia LinEx*”!)
- Consider FLOSS in public procurement, especially for schools and universities
- Buy hardware that works with FLOSS
- Don't just consume, contribute – FLOSS allows active participation, take advantage



# More information...

The FLOSS project pages & final report

<http://flossproject.org>

Licence fees & GDP/capita paper:

[http://firstmonday.org/issues/issue8\\_12/ghosh/](http://firstmonday.org/issues/issue8_12/ghosh/)