

The Economics of Free Software

and why it matters for developing countries

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The worth of free software

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 - **Source lines of code: 55,201,526 (of which Linux forms *under 6%* – Stallman is correct!)**

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 - Estimated effort: 14,005 person years
 - Estimated schedule: 6.04 years (team of 2,318!)
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- **Price of access to the public – and businesses!**
 - Usage: Free; Copying: Free; Editing: Free

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Learning skills – then sharing!

- **78%** of developers *join* the FLOSS community “**to learn and develop new skills**”
- **67%** of developers *continue* their participation in the FLOSS community “**to share ... knowledge and skills**”

Source: Free/Libre/Open Source Software (FLOSS) Study of Developers

These skills have economic value

- **30%** of developers participate in the FLOSS community “**to improve ... job opportunities**”
- **Over 30%** of developers **derive income directly** through their FLOSS work
- **A further 20%** **derive indirect income** as a result of their FLOSS work
- **18%** **got job because of FLOSS experience**

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FLOSS develops local skills

- **Free software is a training environment that enables the ability to create and actively participate rather than passively use ICT.**
- **Free software communities increase 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

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

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 to sharpen a digital divide**

Extremadura: Free software society

- Decided to “leapfrog” into the information society
- Strong political support at the highest level of government
- Principle of universal access and universal active participation

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”

Extremadura: Free software society

- Public Internet access points in every village, 2mb connectivity
- Public libraries in every village
- A computer for every 2 students in every school
- Free “digital literacy” training for pensioners, unemployed, housewives

“Economically possible only with FLOSS”

Extremadura: Free software society

- **Government-supported gnuLinEx project: gnu/Linux distribution adapted to local language *and* culture**
- **Universally adopted by entire public sector**
- **Over 70 000 desktops (running now)**
- **Promoted for private sector too**

Extremadura: Free software society

- 78000 people trained in “digital literacy” programme – GNU/Linux is obviously not hard to learn!
- Training is participatory – creation of multimedia “local knowledge” archives, regional Internet radio...
- School students using gnuLinEx
- Teachers trained to use gnuLinEx

Extremadura: Free software society

- **Business incubator provides business plan assistance**
- **Encourages new local startups to provide services and support**
- **Locally developed (private-sector) applications include FacturLinEx, free software invoice/billing system**

Extremadura: Free software society

- **From a backward, poor region to a leader in many key indicators of ICT access – in FOUR YEARS**
- **Won the European Regional Innovation Award (April 2004)**
- **Agreements to share model with Andalucia, Brazil, El Salvador...**

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)

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 practical:

- **Access – *for everyone***
- **Participation – *active, by everyone***
- **Learning skills – *widely with low barriers***

FLOSS lets developing countries:

- ***Rapidly*** deploy information technology
- ***Affordably*** deploy information technology
- ***Universally*** deploy information technology
- Develop a *local* ICT software and services skills base and foster a *local* ICT software and services economy
- Develop an ICT infrastructure while respecting IPR, limiting “software piracy”

More information...

The EU CALIBRE project:

www.calibre.ie

The FLOSS project pages & final report

flossproject.org

Licence fees & GDP/capita paper:

firstmonday.org/issues/issue8_12/ghosh/