



# ***Emerging Free Software market in Developing Countries***

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**TE**chnology for **DE**velopment and **CO**operation

<http://tedeco.fi.upm.es/>





➤ **Introduction**

- TEDECO group
- Free SW experience at Developing countries
- Relation with Embedded Systems

➤ ***Free SW occidental market***

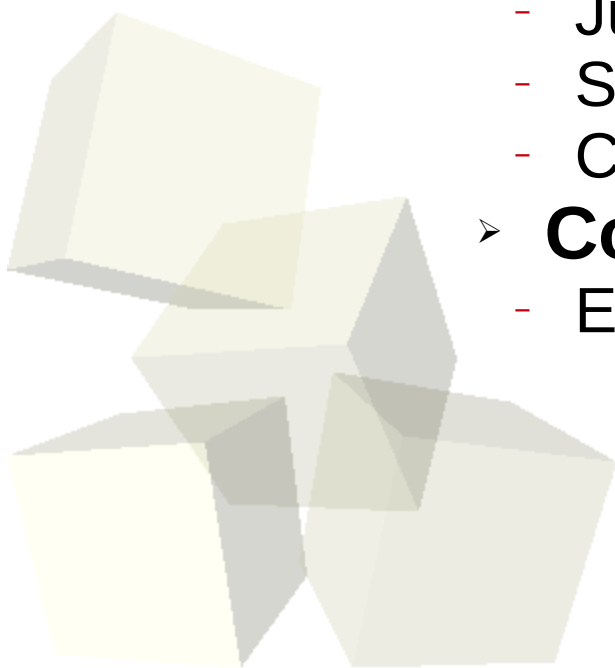
- Mature market
- Fighting against the tradition
- New business models

➤ **Catalysts at developing countries**

- Jumping over an old technology
- SW in Institutional Strengthening
- Cooperation influence in programming education

➤ **Conclusion**

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DENOMINACION	SEDE	AREA TEMATICA	CONTACTO
TEDECO (Tecnología para el Desarrollo y la Cooperación)	Facultad de Informática	Utilización de los conocimientos tecnológicos y docentes para desarrollar una actividad instructiva y de cooperación en países en vías de desarrollo.	Susana Muñoz Hernández
Solidaridad e Ingeniería	ETSI Corinos, Canales y Puertos	Realización de proyectos humanitarios en países de desarrollo. Promoción y formación del voluntariado y sensibilización de los jóvenes españoles acerca de la realidad de otros países.	M <sup>a</sup> Agripino Sanz García
Grupo de apoyo al desarrollo forestal	ETSI Montes	Ordenación y gestión del territorio agroforestal, estudios hidrológicos y de restauración hidrológica, silvicultura y restauración forestal y defensa del monte.	Santiago Vignante Peña
Deporte, Ingeniería del Territorio, Moda y Cooperación al Desarrollo	Facultad de la Actividad Física y el Deporte	Medicina de intervención para educar en valores a través del deporte; tecnologías de diseño y moda para poblaciones desfavorecidas.	Javier Durán González

**Birth date at UPM:**  
November 6, 2006

Madrid 6 de noviembre de 2006

  
Fdo. Jaime Cervera Bravo

**TE**chnology for the  
**DE**velopment and the  
**CO**operation



**New orientation for ICT research:**  
Solving the problems of developing countries

**Projects:**

TESON (2006-2007)

TICAMEN (2008-2009)

MESTUN (2010)



# TEDECO Group (II)

***In 4 years: 34 members directly involved!  
More than 100 people in our mail list***



***Diversity:***  
*Professors*  
*Students:*  
*Graduate*  
*Post-graduate*  
*PhD*  
*Ext. collaborators*

## **TEDECO guidelines:**

Look forward sustainable development  
ICT cooperation-oriented projects  
Free software development





## **Connectivity problems**

Solar panels

Satellite connection

## **Economic problems**

Reusing technologies

Adapting SW

Green-IT

e-Tourism

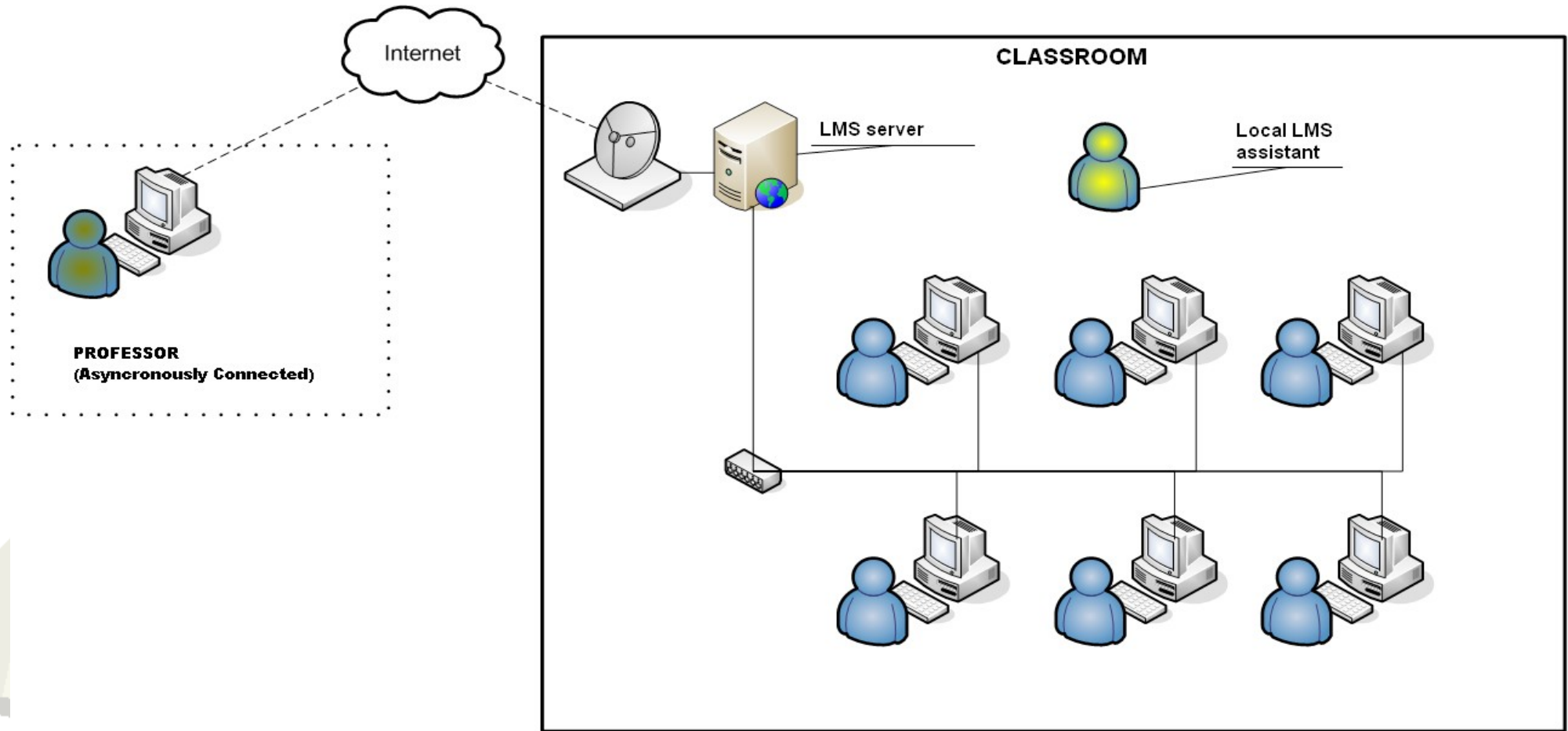
e-Governance

## **Education problems**

Designing studies plans

Studying markets needs

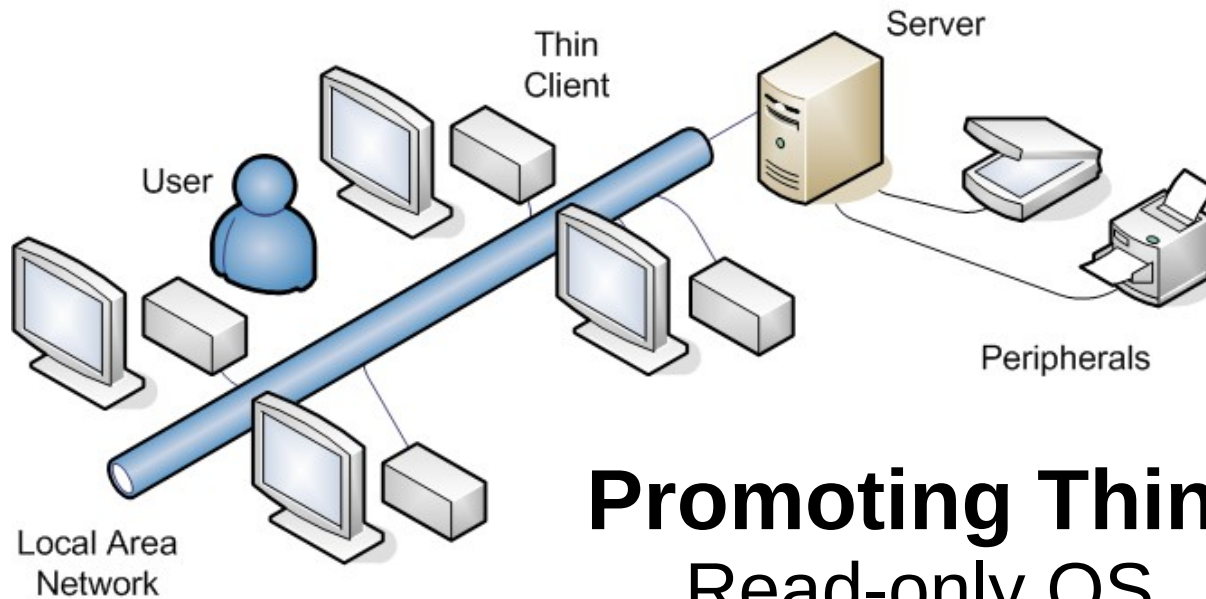
Adapting e-learning tools



**e-learning extensions adapted to  
developing countries conditions**



# Thin Clients developments



## **Promoting Thin Client technology**

Read-only OS

Non-dependence on HD

## **Low and easy maintenance**

Using a built-in recovery software

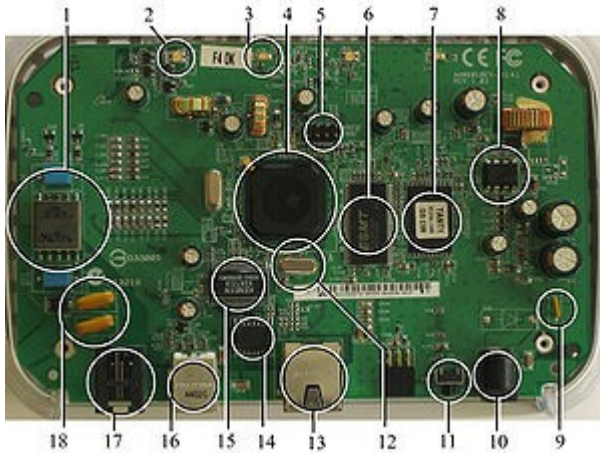
## **Remote support**

Optionally: local duplicated system

## **Low power consumption**



# Relation with Embedded Systems

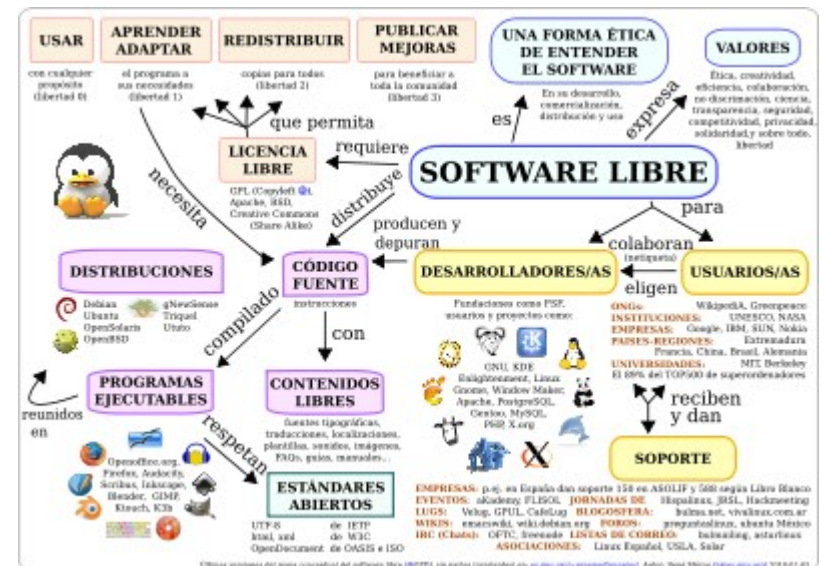


## ➤ **Relation**

- Free SW vs Proprietary SW
- *Embedded Systems vs PCs*

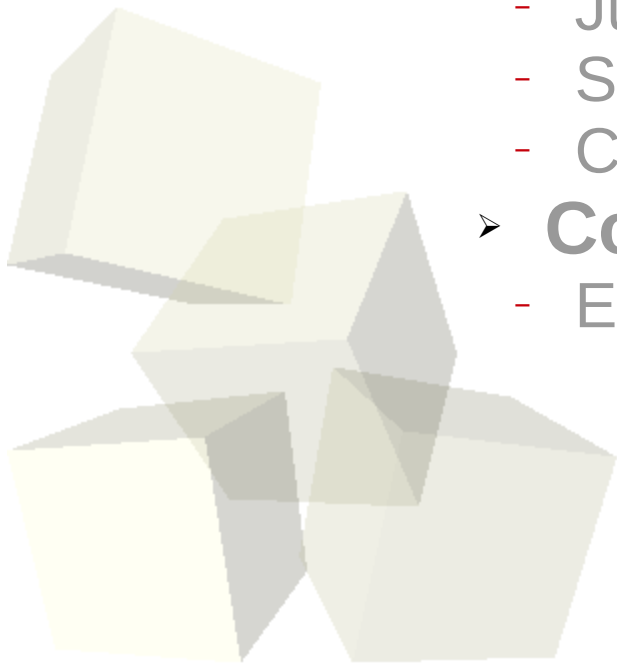
## ➤ **Criteria**

- Reliability
  - maintenance (e.g Thin Clients)
  - industrial cases (e.g radio stations)
- Consume
  - (e.g communication repeaters)





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- ***Free SW occidental market***
  - Mature market
  - Fighting against the tradition
  - New business models
- **Catalysts at developing countries**
  - Jumping over an old technology
  - SW in Institutional Strengthening
  - Cooperation influence in programming education
- **Conclusion**
  - Emerging Free SW market in Developing countries

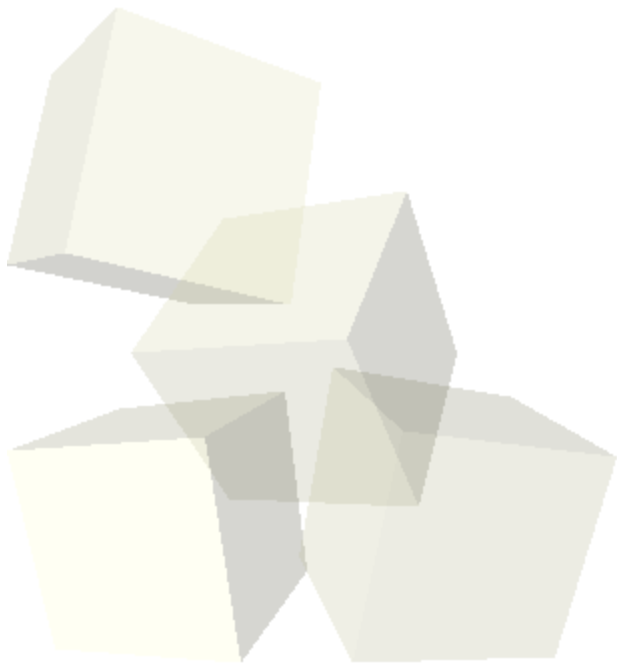




# Free SW occidental market



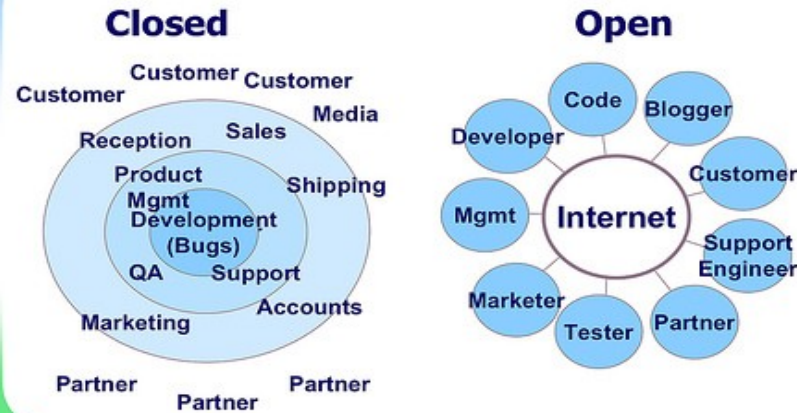
- **Advantage**
  - **Mature market of Free SW**
    - Successful experiences (Linux)
- **Drawback (majority)**
  - **Fighting against the tradition**
    - Migration expenses





# Free SW occidental market

Open source makes companies permeable  
Support and engineering is front and center, not hidden behind sales/marketing



May 28, 06

17



## ➤ New business models

- INES [ines.org.es](http://ines.org.es)
  - EzWeb Project
  - Vulcano Project
    - Competence center
- QualiPSO consortium [qualipso.org](http://qualipso.org)
  - Trust and quality in Open Source Systems
- MORFEO [www.morfeo-project.org](http://www.morfeo-project.org)
  - Create business opportunities around defined standards

## ➤ New methodologies

- Agile [www.agileopen.net](http://www.agileopen.net)
  - Scrum, eXtreme Programming, Lean Software Development



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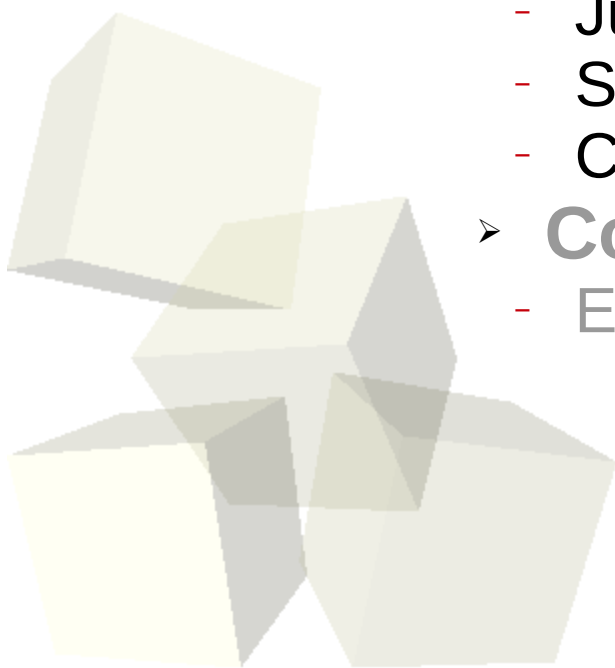
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# Catalysts at developing countries



- **Jumping over an old technology**
  - Trains: steam → electric





# Catalysts at developing countries



- **Jumping over an old technology**
  - Telephony: fix → mobile





# Catalysts at developing countries

- **Jumping over an old technology**
  - Proprietary Sw → Free SW





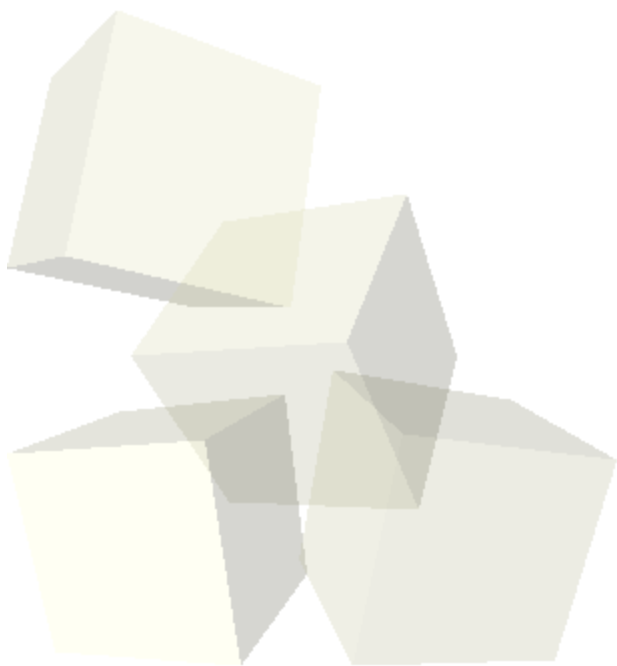


# Catalysts at developing countries



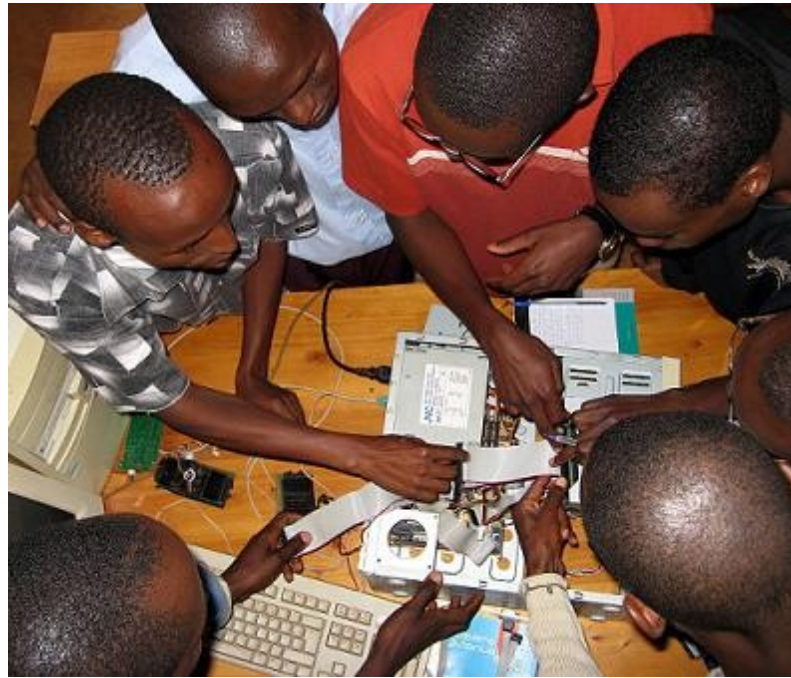
## ➤ **SW in Institutional Strengthening (NGOs influence)**

- Administration
- Education
- Health





# Catalysts at developing countries



## ➤ Cooperation influence in programming education

- Explicit knowledge transfer
  - educational agreements
  - e-learning projects
- Tacit knowledge transfer
  - user SW (e.g SIG projects, Qcad, ...)
  - Web visibility





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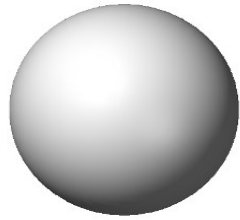




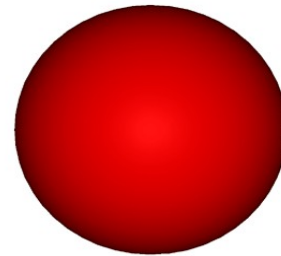
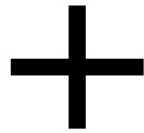
- **Advances from developing countries**
  - 15 African countries have already published recommendations of free SW over proprietary SW solutions (Angola, Benin, Kenya, Senegal, South Africa, Tanzania, Uganda, Zambia, ...)
  - Recommended priority sectors
    - Education
      - Digital libraries
      - e-learning
    - Public Administrations
      - e-Governance
    - Health
      - e-Health
- ***Cooperation influence in priority sectors***
- **Private sector**
  - Conditioned by
    - public administrations
    - education
    - cooperation



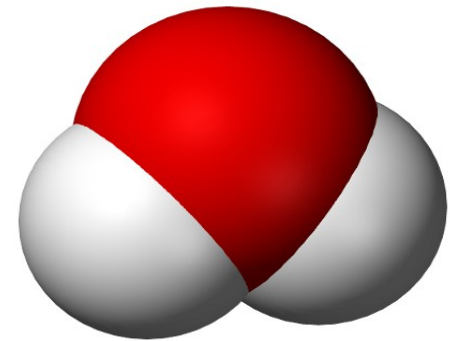
Progress  
Change  
Innovation



Non-traditional  
Markets



Free Software  
Catalyst

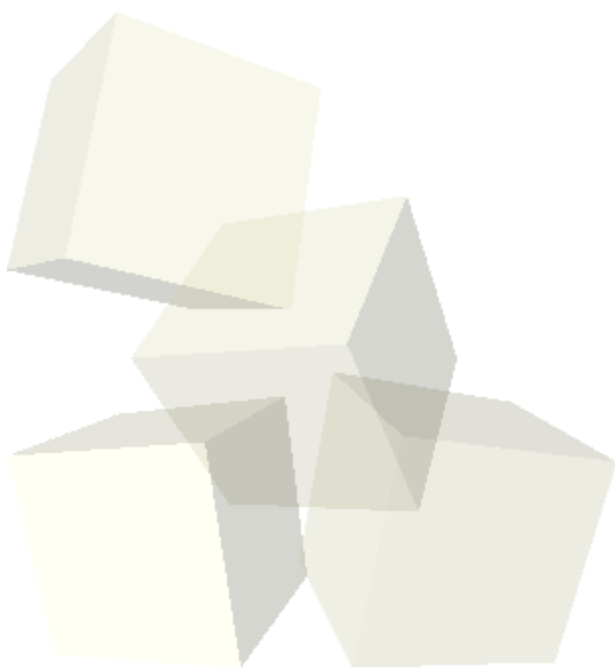


Emerging Market at  
Developing Countries





- Susana Munoz-Hernandez and Jesús Martínez- Mateo.  
***“An Opportunity for Libre Software Companies:  
Emerging Market in Developing Countries”*** The  
European Journal for the Informatics Professional. Pages  
51-53. Vol. X, issue No. 3, June 2009.





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