

# Software sustainability: The ScienceSoft Initiative



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- This is not a definitive answer to the issue of sustainability of software development and maintenance
- It is an on-going discussion to identify gaps and needs that may prevent sustainability and see whether we can do something about them

- EMI: European Middleware Initiative
  - 3-year project (5/2010-4/2013) to support and evolve grid middleware from ARC, gLite, dCache and UNICORE
  - Mainly targeted to research infrastructure and scientific applications
  - Several efforts to involve commercial companies
- Sustainability of the software is a major goal of the project

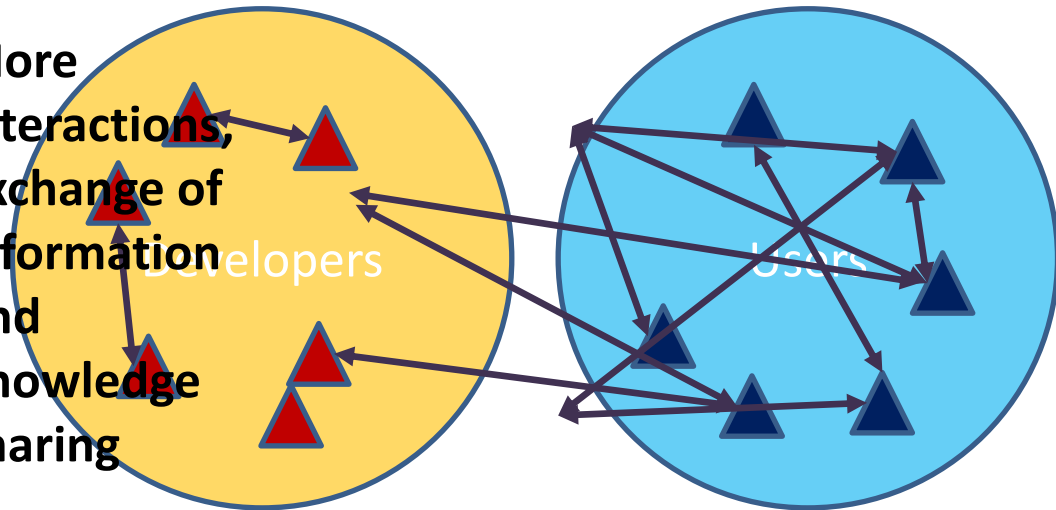
- Option 1: Keep being funded directly by European or national funding agencies
  - Harder and harder, especially for standard software activities (maintenance, porting, etc.)
- Option 2: Apply other existing software sustainability methods
  - Open source software business models
  - Strong, active user and developer communities
  - Community contributions, commercial sponsorships and services

- Most of the software is licensed under a valid OSI-compliant license
- OS is not just about the license
  - Adoption of well-established release and distribution procedures and packaging formats
  - Distribution through mainstream operating system distros and repos (Fedora, EPEL, Debian, Maven, etc.)
  - Bottom-up contribution process with high-level strategic organization

- What we have noticed is that
  - Communities do exist, but are not always interacting with each other
    - *Interaction between user communities and developers communities*
    - *Interaction between different domains or structures*
  - Interaction often happens at project level, but interaction at personal level is very limited
  - Very difficult to know who's using/doing what and how to get and give credit for it

- This prevents from establishing active communities and an efficient exchange of information
- In turn, the lack of active, engaged communities makes sustainability difficult
  - How to justify the need for funding?
  - How to bring in commercial companies?
  - How to preserve useful software at the end of a project?

**More interactions, exchange of information and knowledge sharing**





- Community-oriented not project-oriented
  - Committed contributors
  - Engaged users
- Interactions are stronger if supported by motivated individuals within the more general interests of Institutes or Companies
- Institutes have of course to have policies in place to encourage this behaviour

- One of the most recent and successful online communication model is social networking
  - It is applied to virtually any human activity from personal to business and even in support of real physical revolutions
- LinkedIn, Facebook, Twitter, Google+, Forums, Blogs, etc.
- How can we exploit this model to improve interaction and communication?

- Focus on scientific research at large
- Create the right conditions to operate in a standard open source environment
- Enable the generation of a bottom-up community of contributors and users
- Allow a better exchange of information among developers and users
- Create a marketplace for software and related services, but also for people
- Establish a permanent focal point for technology coordination and discussion

- Open source foundations or communities already exist. Can they be used?
- They fall into one of four categories
  - Technological: Apache, Drupal, Eclipse, etc.
  - Operating System: Fedora, Debian, etc.
  - General purpose: SourceForge, GitHub, etc.
  - Domain-specific: e.g. Nanohub
- They are all partially satisfying the requirements. Is it good or bad?

- Collect and publish information about software
  - who develops it, who uses it, what licences are used, who likes or dislike it, etc.
  - stats by developer, by user, by Institute, by geographical region, by scientific community/domain, etc.
- Provide “social network” channels
  - among developers, among users, between users and developers, special-interest groups, etc.

- Provide info and services to Institutes and companies to promote their worth
  - Support funding requests, increase users
- Organize and promote events
  - Conferences, workshops, contributors gatherings
- Look for and manage funding streams
  - Commercial sponsorships, donations, membership fees, institutional funding (EU or local)

- Enhance the motivational aspects of software development and usage
  - Software is well advertised, it's use is known and acknowledged
  - Users can share experiences, get help and rate the software
  - Developers can be more responsive to user needs
- Increase visibility and opportunities:
  - Being able to show that software is used and well rated helps with sustainability (getting funds)

- Increase cross-domain interaction
  - A solution/problem found in one domain or community doesn't need be repeated again
- Improve opportunities for commercial usage
  - Companies get knowledge of potential markets
  - Can propose additional services to interested users
  - Also suitably equipped Research Institutes can provide additional value-added services

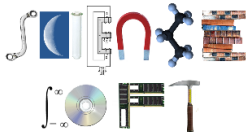


- First draft of a document describing the current ideas and discussion
  - Originated within EMI
  - Distributed to user and developers outside EMI
- Group of people being formed to improve the document
  - EMI, EGI, StratusLab, iMarine, OpenAIRE, Maat, SixSq, dCore Systems, SysFera, (PRACE), (HEP), ...
  - work out more details of possible mandate, scope, functions, governance, funding model, etc.

- Tentative name and motto:
  - ScienceSoft: Open Software for Open Science
- Domain name registered:
  - sciencesoft.org
- Place-holder web site:
  - <http://sciencesoft.web.cern.ch>

# ScienceSoft *Open Software for Open Science*

Home | Projects | Community | Support | About us



LEARN MORE  
TAKE THE 2-MINUTE TOUR



## What is it?

ScienceSoft is an initiative to coordinate and promote the development and use of open source software for scientific research

## Who is it for?

It is for software developers producing applications, middleware, tools for science. It is for researchers to find software, get support, express recommendations

## Why use it?

ScienceSoft allows to organize and promote projects, find software and connect to people developing or using it. It allows to take decisions based on information shared and verified by a large community of researchers

## NEWS AND EVENTS

**06.02.2012**  
1st ScienceSoft workshop at CERN

**05.12.2011**  
The ScienceSoft initiative design phase starts with the creation of the expert Steering Committee

### QUICK LINKS

- [2nd EMI Technical Conference](#)
- [OSI - Open Source Initiative](#)
- [The FEDORA Project](#)

## IN THE SPOTLIGHT



### ScienceSoft - Open Software for Open Science

In December 2011 EMI, the European Middleware Initiative, and EGI, StratusLab, OpenAIRE, Marine and other scientific research projects have started a collaboration to promote and coordinate the development and use of open source software for scientific research.

The new initiative, called ScienceSoft, supports research Institutes developing software in establishing sustainable open source policies, adopt standard methods and tools, publish software in the most used operating system distributions and promote their products to a wider audience.

ScienceSoft also helps scientific researchers in finding the software they need, get support, share experiences, recommend software to other researchers and rapidly find solutions to their problems.

[read more](#) →

## FEATURED PROJECTS



**EMI**  
EMI, the European Middleware Initiative, is a project partially funded by the European Commission to coordinate the development of grid middleware in Europe.



**EGI**  
EGI, the European Grid Infrastructure, manages the largest scientific research grid in Europe.



**StratusLab**  
StratusLab develops a complete, open-source cloud distribution that allows grid and non-grid centers to offer an "Infrastructure as a Service" cloud.

- It is meant to be a realistic implementation if the described requirements
- It is not EMI 2
- It is not just about middleware
- It is not an EC-funded project (although here opinions differ)
- It must be an open, community-driven effort

- Survey being designed
  - to be sent to developers and users communities
  - collect ideas and feedback on the proposed initiative, whether there is a perceived need for it, what it should do
- Expected to be sent out at the beginning of February for 3 or 4 weeks

- Presentation in Amsterdam on Jan 25<sup>th</sup> at the EGI workshop on sustainability
- A first workshop being organised at CERN on 8<sup>th</sup> February to discuss about the initiative and refine it
- Regular workshops during the year
- Official presentations/sessions at ISGC, EGI/EMI Conference, OGF, CHEP, ...

- Implementation of
  - Organization
  - Technical features
- Start in the second half of 2012, make it operational in 2013
- Incremental approach