

Free/Libre and Open Source Software: Survey and Study

FLOSS

**Workshop on
Advancing the Research Agenda on Free / Open Source Software**

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Summary list of research questions

This is a sorted summary list of priority research questions highlighted from the overview of research priorities in the workshop report. As with the overview, references to background statements of workshop participants are made in [brackets] at the end of each section followed by keywords: discipline/methodology/area of study discussed.

Creativity, Community

What impact does ideology, personal trust, and a common set of beliefs have on modes of organization and development?

What policies and ownership regimes could foster creativity and inclusion?

What can we learn from open source modes of organization and production that could be applied to other areas as well?

There is a need for ethnographic study of open source by researchers who actually go in the field to see how open source community participants live, work and interact.

[Leach, Stewart, Cox, Crowston]

Keywords: anthropology, sociology/psychology; ethnographic research

Measurement, productivity, efficiency and security

A whole research area in the measurement and quantification of specific aspects of the open source organization and development process. A number of tools are required to quantify metrics for the further analysis of the open source process.

What is efficiency in the context of open source development? What is the concentration of (and what are the methods of) contribution in development?

How (and how efficiently) do bug fixes and innovations propagate from developer to end-user? How does the development model scale? How much modularity is there in the production model, and how much duplication?

What is the relationship between incentives and efficiency – especially in terms of improving security, or performing “mundane” tasks (as against actual coding)?

[Stewart, Daffara, Jones, Laurie, Tuomi, Herbsleb, Fitzgerald, FLOSS5].

Keywords: software engineering analysis techniques, analysed from the perspectives of economics, sociology, software engineering.

Modeling, prediction and empirical research

What are the other types of mechanisms, not based on markets, prices and their invisible hand, that govern production and allocation?

How does open source allocate resources and how can we predict this, based on multiple motivations driving participants?

To what extent does the open source model provide economic efficiency, and how does that relate to the fact that economic motivations are not necessarily important to participants themselves?

Is it possible to learn about or predict the behaviour of open source communities by running simulations of them (agent-based model)?

[Cremer, David, Dalle, Herbsleb, Jones, Tuomi, Crowston, Burt]

Keywords: economics, economic modeling, AI/agent-based simulation, empirical data collection and analysis

Open source and the world: dynamics, learning, social barriers

Many people are studying open source as an example of something else - we need a concerted effort on open source in itself, for itself and what it means to the world - What do processes of open source mean for the global economy, for the software industry, for the information industry, for developing countries?

What is the importance of learning/training in the open source process and how does it work?

How poorly are women represented in open source communities? What can be done to bring more women into the open source world?

Is the transparency in organizational and developmental structure of open source more conducive to a meritocracy that ignores national, economic, socio-political hierarchy?

How do language barriers create divisions within the open source source community?

[Iacono, Metiu, Tuomi]

Keywords: organizational studies, sociology, gender, policy,

Innovation, incentives, organisation and structure

What is the form of organization in open source, and how does it fit with traditional classifications of organization systems?

How does one measure (and predict) innovation in the open source model? What is the link between motivation, incentives and open source innovation?

Can incentives and motivations among participants in projects/communities be correlated to their organizational structure, and structure correlated to quality, efficiency or other measures of "success"?

Is it possible to measure the impact of intra- and inter-project competition and cooperation in open source communities, to correlate with and predict "success"?

[Garzarelli, Kuan, Crowston, FLOSS4]

Keywords: economics, sociology, innovation and organizational studies

Standards and interoperability

What is the impact of open source on standardization and interoperability in software and ICT?

What is the impact of different open source licenses on standards? Do some licences (e.g. GPL) increase the likelihood of retaining interoperability while making improvements to de facto standards?

What is the impact of the ability to freely change development trajectories in open source (code-forking) have on interoperability and on innovation?

What is the impact on interoperability of requiring open source reference implementations for any "open" standard? How does open source, or a reference implementation, affect barriers to entry?

[Egyedi]

Keywords: economics, law, standards policy

Funding open source

What are the current ways that open source development is funded (publicly or privately)? Are there better ways to fund development, and to reward and recognise success and innovation through the recognition of contribution to open source?

Is dual licensing – GPL and proprietary commercial in parallel – useful as a viable business model, or as an effective way of licensing publicly funded software?

What are the ways in which public funds are being (or could/should be) used for the development of open source and what is their impact – on open source, public infrastructure and the software market?

[Cathcart, Schmitz, Strawn]

Keywords: economics, business studies, policy

Incentives & IPR, licensing schemes & policy

What role does IPR play in supporting open source? Copyright law has been used to enforce the GPL and ensure that open source code is not re-appropriated to the exclusive advantage of any one party, as could happen with public domain software.

How do the incentives of IPR protection relate to innovation in open source? Do IPR regimes, especially software patents, act as disincentives for open source, and create entry barriers to software innovation?

What is the relationship between IPR and open standards? What are the implications on standardization and innovation of different licensing regimes, including different choices of open source licence

What IPR issues – e.g. uncertainty over IPR ownership, third-party infringement claims – are faced by potential users/deployers of open source?

[Van Alstyne, Blind, Kahin]

Keywords: economics, innovation, standards, IPR law, policy