

Call for papers

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Empirical Research on Free/Libre Open Source Software

Guest Editor

Kevin Crowston
Syracuse University
crowston@ischool.su

Michael Wade
York University
mwade@schulich.yorku.ca

Over the past decade, the Free/Libre Open Source Software (FLOSS) phenomenon has revolutionized the ways in which organizations and individuals create, distribute, acquire and use information systems and services, making it an increasingly important topic of research for information systems researchers. FLOSS has moved from a curiosity to the mainstream: it has become a useful instrument for educators and researchers, an important aspect of e-government and information society initiative and a consideration in all technology business plans (e.g., Fitzgerald 2006).

The apparent success of FLOSS development has challenged the conventional wisdom of the software and business communities about the best ways to develop and acquire software. The research literature on software development and on distributed work more generally emphasizes the difficulties of distributed software development (e.g., Herbsleb et al. 2000), but the apparent success of FLOSS development presents an intriguing counter-example. Characterized by a globally distributed developer force and a rapid and reliable software development process, effective FLOSS development teams somehow profit from the advantages and overcome the challenges of distributed work (Alho et al. 1998). Traditional organizations have taken note of these successes and have sought ways of leveraging FLOSS methods for their own distributed teams. More broadly, FLOSS development provides a commonly referred to model for open collaboration, increasingly seen as a viable approach to community-based development of systems and information resources more generally. Thus, while in many ways unique, the distributed and self-organizing nature of FLOSS teams represents a mode of work that is increasingly common in many organizations.

As well, FLOSS development is an important phenomena deserving of study for itself (Feller 2001). FLOSS is an important commercial phenomenon involving all kinds of software development firms, large, small and startup. Millions of users depend on FLOSS systems such as Linux or Firefox, and the Internet is heavily dependent on FLOSS tools. These systems are an integral part of the infrastructure of modern society, making it critical to understand more fully how they are developed. Furthermore,

FLOSS is an increasingly important venue for students learning about software development. However, researchers are just beginning to understand how people in these communities coordinate software development and the work practices necessary to their success.

Part of the challenge to researchers is that FLOSS is a complex phenomenon that requires an interdisciplinary understanding of its engineering, technical, economic, legal and socio-cultural dynamics. It is similar to many other phenomena (e.g., virtual teams, user innovation, distributed software engineering, voluntary organizations, social movements), without being exactly like any, making it difficult to identify and to apply relevant theories. Indeed, the term FLOSS includes groups with a wide diversity of participants and practices, with varying degrees of effectiveness, but the dimensions of this space are still unclear. Empirically, the study of FLOSS is blessed with an abundance of certain kinds of “trace” data, generated through the everyday actions of developers. However, these data are limited to particular aspects of FLOSS work and are often difficult to connect to constructs of theoretical interest. As a result, research on FLOSS is in critical need of careful conceptualization and theorizing, with particular attention to delineating the boundaries of theories in useful taxonomies of project types.

The growing research literature on FLOSS has addressed a variety of questions. First, numerous explanations have been proposed for why individuals decide to contribute to projects without pay (e.g., Bessen 2002; Franck et al. 2002; Hann et al. 2002; Hertel et al. 2003; Markus et al. 2000). These authors have mentioned factors such as increasing the usefulness of the software (Hann et al. 2004), personal interest (Hann et al. 2004), ideological commitment, development of skills (Ljungberg 2000) with potential career impact (Hann et al. 2004) or enhancement of reputation (Markus et al. 2000). Further work in this area will need to distinguish between motivations for different kinds of projects and for developers with vastly different levels of commitment and contribution to a project and develop richer datasets of actual developer beliefs, intentions and behaviours. A methodological concern is developing valid samples of participants given the highly skewed distributions of activity.

Second, researchers have investigated the processes of FLOSS development (e.g., Raymond 1998; Scacchi et al. 2006; Stewart et al. 2006). Many of these studies have been done at the project level, e.g., using available data about project-level measures to predict success. These studies are often limited by the available data, which may only weakly reflect theoretical constructs of interest. A few studies have been done at the level of individual developers, though many of the same concerns apply. For example, co-membership in projects can be viewed as a social network (e.g., Méndez-Durón et al. 2009), but strong theory is needed to interpret the network. On the other hand, since data are available longitudinally, there is an opportunity to perform stronger tests of theory (e.g., Subramaniam et al. 2009). Fewer studies have grappled with the details of work practices within projects, in part because data about these practices are more

difficult to identify, collect and analyze. Mainly Logs of email and other kinds of linguistic interactions are generally available, but are quite time consuming to analyze. As well, such studies reveal only the public face of developers' actions, leaving their private work hidden. Still, detailed studies of FLOSS practices could be quite revealing for understanding this form of distributed work.

Third, researchers have examined the implications of FLOSS from economic and policy perspectives. For example, some authors have examined the implications of free software for commercial software companies or the implications of intellectual property laws for FLOSS (e.g., Di Bona et al. 1999; Kogut et al. 2001; Lerner et al. 2001). Rossi Lamastra (2009) found that FLOSS solutions developed by a sample of Italian companies were more innovative than the non-FLOSS solutions, while Henkel (2008) suggested that despite fears to the contrary, corporate participation did not lead to harmful sharing of information. Finally, a few authors have examined the use of FLOSS and its implementation in organizations. For example, Fitzgerald et al. (2003) examined the broad implementation of FLOSS in an Irish hospital. Implementation studies seem like a particularly promising area for information systems researchers, though such studies face a challenge to explicitly theorize about the relationship between the distinctive properties of FLOSS and the processes of implementation and use.

Example topics for the special issue

The research reviewed above, while extensive, is still just a starting point for understanding the phenomenon of FLOSS development and use. Papers are invited for the special issue on any topic related to FLOSS development and use. Papers should be theory-driven or theory-building, with clear implications for further research and practice. Example topics include:

Social science: Understanding organizational and psychological issues in FLOSS

- Diversity and international participation in FLOSS projects
- Learning, knowledge sharing, collaboration, control or conflict in FLOSS projects
- Dynamics of FLOSS project communities, building and sustaining
- FLOSS historical foundations
- FLOSS and social networks
- FLOSS and social inclusion
- Economic analyses of FLOSS and FLOSS development at the level of firms, societies and individuals
- Knowledge management, e-learning and FLOSS

FLOSS systems development:

- FLOSS and distributed development
- Lessons from FLOSS for conventional development

- Open sourcing vs. offshoring of development
- FLOSS and standards
- Mining and analyzing FLOSS project repositories
- Documentation of FLOSS projects
- Efficiency of FLOSS development practices compared to other approaches

Emerging perspectives: Lessons from FLOSS applied to other fields

- Diffusion and adoption of FLOSS innovations
- FLOSS and alternative intellectual property regimes
- FLOSS, Open Science and "Open Knowledge"
- Licensing, intellectual property and other legal issues in FLOSS
- FLOSS and innovation
- Business value of FLOSS

Studies of FLOSS deployment: Current studies and future issues

- Case studies of FLOSS deployment, migration models, success and failure
- FLOSS in the public sector (e.g., government, education, health care)
- FLOSS in vertical domains and the 'secondary' software sector (e.g., automotive, telecommunications, medical devices)
- FLOSS-compatible IT governance architectures
- FLOSS applications catalog (functionality, evaluation, platforms, support providers, training needs)
- FLOSS education and training
- FLOSS, e-government and transformational government
- FLOSS business models and strategies

We particularly hope to receive papers that cut across these dimensions and use the phenomenon of FLOSS to theorize about the evolving nature of technology-supported distributed work.

Important dates

Deadline for articles 15 October 2009
 Initial decisions by 15 January 2010
 Revisions due 15 April 2010
 Final decision by 15 July 2010

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