

Association for Information Systems

## AIS Electronic Library (AISeL)

---

UK Academy for Information Systems  
Conference Proceedings 2010

UK Academy for Information Systems

---

Spring 3-23-2010

### THE TERM OPEN SOURCE SOFTWARE RE-NEGOTIATED

Juho Lindman

*Helsinki School of Economics*, [juho.lindman@ait.gu.se](mailto:juho.lindman@ait.gu.se)

Follow this and additional works at: <https://aisel.aisnet.org/ukais2010>

---

#### Recommended Citation

Lindman, Juho, "THE TERM OPEN SOURCE SOFTWARE RE-NEGOTIATED" (2010). *UK Academy for Information Systems Conference Proceedings 2010*. 33.

<https://aisel.aisnet.org/ukais2010/33>

This material is brought to you by the UK Academy for Information Systems at AIS Electronic Library (AISeL). It has been accepted for inclusion in UK Academy for Information Systems Conference Proceedings 2010 by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# THE TERM OPEN SOURCE SOFTWARE RE-NEGOTIATED

**Juho Lindman**

*Helsinki School of Economics, Information Systems Science, Runeberginkatu 22-24,  
00101 Helsinki, Finland*

Email: juho.lindman@hse.fi

## **Abstract**

*Implementing Open Source Software (OSS) technology (tools and practices) entails potential for radical organisational transformation of software production. Not going there yet, this paper discusses the local re-negotiation of the term OSS itself in certain case companies. We claim that these processes (1. organisational change, and 2. renegotiation of the term OSS) are intertwined. Renegotiation of the term is needed in order to create an understanding of what it means to leverage OSS locally. Based on a systematic literature review, we investigate two cases to outline what kind of renegotiation of the term occurs when a company alters its software production. Initial findings indicate that future research on organizational OSS may benefit from a more critical review of the processes occurring under the term OSS.*

**Keywords:** Open Source Software, Inner Source, Software Development

## **1.0 Introduction**

Open Source Software (OSS from now on) has the potential to radically alter the software industry landscape (Fitzgerald, 2006; Hauge et al. 2008). OSS is taken to either include a software licensing method or development process characterized by the publication of the source code under an OSI-approved software license. Research on OSS has mainly focused on the LAMP-stack (Linux, Apache, Mozilla, Perl/Python) (Osterlie&Jaccheri, 2007) and community driven development. Less research effort has been directed towards organisations and organisational change, especially to the process of “inbounding OSS” (Fink, 2003;Wesselius, 2008). Corporate source (Dinkelacker et al., 2003) or Inner source (Linden et al., 2009) are concepts used to characterize OSS limited inside one organisation.

Swanson and Ramiller (1997) propose a concept of organizing vision to describe how organisational diffusion and legitimisation takes place. Past examples of organizational visions include once buzz-wordish innovations such as *CASE-tools*, *client-server* and *intranet* (Swanson&Ramiller, 1997). We are interested in this

diffusion process and choose to view OSS as an organizing vision. Our focus is on understanding the link between local renegotiation and the process of inbound OSS.

This paper reports some of the preliminary results of an on-going research project focused on understanding the organisational dynamic of OSS technology entering an organisation. We seek to answer the question: How is the term OSS renegotiated in relation to organisational change?

## **2.0 Literature review**

Prior OSS research has noted the different organisational opportunities that constrain OSS implementation. Due to these constraints, companies leverage OSS by implementing one of several “generic OSS business models” (Hecker, 1999).

Definitions of OSS in the public press have been directed to the twin audiences of commercial companies (Raymond, 2001) and OSS enthusiasts. It is not surprising that literature finds that “OSS is not a precise term” (Gacek&Arief, 2004, pp. 35)”. We speculate that this holds true also in the organisational field (Scott, 1995) and thus is directly related to the process of implementing OSS technology. This fluidity of the term is the starting point of our argument. The concept of organizing vision stands for a “...a focal community idea for the application of information technology in organizations.” (Swanson&Ramiller, 1997). An organising vision can be divided into three different aspects, which are further be used in our analysis 1) *interpretation*, 2) *legitimation* and 3) *mobilization* (Swanson&Ramiller, 1997).

## **3.0 Methods**

Our focus is on human interaction, which led us to use a qualitative approach and to adopt the protocol of interpretative case studies (Klein and Myers, 1999). The actual research was conducted as part of a European research project (ITEA-COSI) spanning the range of over three years. The two cases were chosen from among the partner companies.

The data was collected using semi-structured thematic interviews. We interviewed 3

people from both case organisations and repeated the interviews for 2 people. In total, we thus had 10 interviews. The interviews were about one hour long. For each case, one respondent was from an internal software service unit, one from an internal business unit and one from the user/developer perspective.

We gathered information on the history of the cases, the organisational changes occurring over time and current challenges. In the analyses we focused on how the respondents talked about the term OSS, about the three aspects of organizational vision and of organisational change. We tabled these instances and found that there seem to exist several different meanings for OSS.

#### **4.0 Case 1: Controlling the development of an OSS tool**

Philips Medical Systems (PMS) is currently employing approximately 31,000 people. The customer base consists of medical professionals and patients. PMS is developing a DICOM (Digital Imaging and Communications in Medicine) validation toolkit named DVTK. The DICOM standard makes interaction between different medical hardware and software possible and the validation toolkit is used to test the compliance. DVTK was developed in 2000 and was originally a proprietary software package developed by two companies, PMS and AGFA. However, the proprietary software license failed because of fears of partiality. The problem was addressed by publishing the source code of DVTK under an LGPL-license.

The publication of the source code led to several changes in how the software production was organised. The change was a change of role from a provider to a joint-developer participating in the community providing the software. PMS aimed to ultimately remove most of the development and maintenance to an active user community. The developer community is mainly driven by the original initiators and contributors who serve as gatekeepers.

We can analyse the flow of events by using the organising vision concept to link negotiation over the term and organizational change. Renegotiation occurred between different organizational groups, creating a joint understanding of how publication of

the software could help the organisation. This discussion was informed by how the term OSS is understood at the organisational field level. The term offered *interpretation* for the publication of the software and the starting point for a collaboration activity, which aimed to gather outside contribution. It also provided *legitimation* by showing the logic of how this collaboration inside and outside the company could work. Furthermore, it *mobilized* the different organizational groups by promising that if certain steps were taken, the project would gain outside contribution. These steps included organizational issues like moving and creating development discussion channels to the voluntary developers and creating the incentives for outsiders to participate.

The term OSS was used to describe software production which changed, during the negotiation, from OSS as a voluntary based open joint collaboration to the direction of a project with a clear management rationale and developed mainly by company employees. The source code is published, though it is mainly provided, hosted and controlled by PMS employees.

## **5.0 Case 2: Implementing OSS Development Practices internally**

NokiaSiemensNetworks (NSN) is a mobile communications company employing about 60000 people. NSN's customer base consists mostly of operators. The company focuses on production and maintenance of telecommunication network equipment. The iSource source code portal was created in 2003. The portal enables the use of OSS practices and tools within NSN's own organisation. It includes version control tools (Subversion, CVS), issue tracker, mailing lists (Mailman), forums, and file management.

Originally iSource was a response to the growing need to address the issues related to the reuse-support of software assets. iSource was intended to (1) build on the familiarity the developers already had with OSS tools and practices, (2) streamline and standardize a transparent set of tools and software development practices, (3) enhance collaboration across units made possible by the wider visibility of the source

code. NSN business units have autonomy to select whether to use iSource or other internal or external services for their projects.

Currently, iSource's active projects are counted in the hundreds and active users in the thousands. The projects attract global participation. Business units value the version control, quick set-up and the possibility to support agile projects. There are several ways to use the portal. Common examples of use include (1) a transparent version control tool, (2) an internal reuse marketplace for software asset showcasing, and (3) a set of tools supporting collaborative software development practices.

When examining how the events came about, it is clear that iSource was meant to test the benefits of open source inside one large organisation. The *interpretation* of the tool was based on it enabling access to certain good sides of OSS, namely reuse and collaboration. It was *legitimated* as a proven light-weight portal with certain benefits to those projects and developers who were willing to use it. The *mobilisation* was also based on voluntarism, but a service unit was created to give iSource institutional credibility and to promote it internally. The resulting organization was a more light-weight environment compared to some of the more rigid development tools in use.

If the answer to the question of what is OSS and what is not is based on the software license, then iSource is not OSS. However, the technical infrastructure that supports the development process is an almost direct copy of the development process used in OSS communities on the internet. Instead of OSS, the respondents tended to talk about inner source. Under negotiation the term morphed from published source code and open collaboration into internal collaboration based on maintenance costs divided between business units and buzz-wordish inner source. At the same, a new software production organisation reflecting certain open source practices inside organization was formed.

## 6.0 Conclusions

For academic audience, the two empirical cases show the potential of OSS to cause fundamental institutional changes in organisations. Even more importantly, we find that this change process is directly related to the re-negotiation of the term OSS itself. This renegotiation happens in the context of a certain software development organisation. Academic work may benefit from taking a more critical approach of the term OSS when enacted in a certain organization and how it directly relates to the changing software production.

To practitioners, we have shown empirically that organisations can approach OSS technology in different ways. One of the key issues of the success of the diffusion of technology is related to the renegotiation of the term itself. Thus we hesitate to promote, or criticize, the leveraging of OSS technology in general terms, without first engaging the organisation to find out what OSS technology could actually mean to an organisation. The examples of leveraged OSS technology offer valuable lessons, if they can be transferred to a different context.

## References

- Fink, M. (2003). *The Business and Economics of Linux and Open Source*. Prentice Hall, New Jersey.
- Fitzgerald, B. (2006). The Transformation of Open Source Software. *MIS Quarterly*, 30 (3), 587-598.
- Gacek, C. and Arief, B. (2004). The Many Meanings of Open Source. *IEEE Software* 21 (1):34-40.
- Dinkelacker, J., Garg, P., Miller, R., Nelson, D. (2002). Progressive Open Source. In *Proceedings of ICSE 2002*, 174-184.
- Hauge, Ø., Sørensen, C.-F., and Conradi, R. (2008). Adoption of Open Source in the Software Industry. In Eds. Russo, B., Damiani, E., Hissam, S.A., Lundell, B., and Succi, G. *Open Source Development Communities and Quality Working Group 2.3 on Open Source Software*, volume 275 of *IFIP International Federation for Information Processing*, pages 211–222. Springer, 2008
- Hecker, F. (1999). Setting Up Shop: The Business of Open-Source Software. *IEEE Software*, 16(1):45–51, January-February.
- Klein, H. K. and Myers, M. (1999). A Set of Principles ofr conducting and Evaluating Interpretative Field Studies in Information Systems, *Mis Quarterly*, 23 (1), 67-94.
- Linden, F., Lundell, B., Marttiin, P. (2009). Commodification of Industrial Software – a case for Open Source. *IEEE Software*, July/August 2009.

- Østerlie, T., and Jaccheri, L. (2007). A Critical Review of Software Engineering Research on Open Source Software Development. In Proceeding of the 2nd AIS SIGSAND European Symposium on Systems Analysis and Design, Gdansk, Poland, June 5.
- Raymond, E. (1999). *The Cathedral & The Bazaar - Musings On Linux And Open Source By An Accidental Revolutionary*. O'Reilly Associates, Sebastopol, CA.
- Scott, W.R. (1995). *Institutions and Organizations*. Sage, Newbury Park, CA.
- Swanson, B., and Ramiller, N. (1997). The Organizing Vision in Information Systems Innovation. *Organization Science* vol. 8, nro. 5, September/October 1997, 458-474.
- Wesselius, J. (2008). The Bazaar inside the cathedral; Business models for Internal Markets. *IEEE Software*, 25 (3), 60-66.