Open source software development: "GNU communities" and the social face of ICT

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"*Information architecture is politics in code*"[2]

Defining F/LOSS (Free/Libre Open Source Software)

Generalized definition, which is used hereafter, would refer to F/LOSS projects as a variety of computer programs and platforms, released under an open source license, no matter the particular type. The narratives, accumulated from within F/LOSS project developers communities, commonly ascribe similar attributes to their definition, particularly as a set of free programs, platforms, and operating systems, being developed by communities of users, where no ownership claims over the final product are made and the source code underlying all products ships with the product, or is publicly available for download. (Crowston et al. 2003, Goh, et all 2008, Hemetsberger 2006, 2009, Kettell 2008, McInerney 2009, Raymond 1999, Von Hippel and von Krogh 2003)

Typically, open source software is developed in a cooperative fashion by a network of (normally unpaid) volunteers, incorporating direct feedback from users as a vital part of the process, forming a commons-based, collaborative, and participatory venture (Kettell 2008). In this context, property is organized around the right to distribute. The key concern is developing the best strategies to maximize access and collaboration, opposed to proprietary related ownership and exclusion management (Kawamoto 2007,Stalder 2008).

Methods

The original broader question of building and sustaining F/LOSS development communities shifted to a particular issue, concerning the techno-cultural face of F/LOSS projects` communities as normative laden narratives of identity. Alike the communities being investigated, inquiries into collective development of F/LOSS products steadily develops into a major, "non-geeky" research area. (Hemetsberger 2006, Kettell 2008)

Two main methods underlie the study – participant observation and documentation analyzes, accumulating comprehension on the way participants in one particular F/LOSS project community – the Drupal content management system (CMS) - make claims about their identity, what they do, and how they coin major narratives about the community, aspects of participation, accumulation of symbolic and economical capital.

Participant observation is ongoing, from November 2009 to July 2010 mostly on-line (live streaming from community events, chats, webinars, skype conversations). As of August 2010 – on spot, involving conversations, unstructured interviews, participation at local and

international community events, drafting documentation and everyday cooperation with two developers, as web-site building assistant.

Documentation analyses cover wide aspects of information flow – the project's page (www.drupal.org), personal blogs of community participants, various coders sites, web-sites of different for-profit companies, working with the CMS. General "native" framing of politics of open source licensing. open-source development projects and communities, as well as a historical background to the project were accumulated in the same manner.

Why Drupal

Free and open-source software (F/OSS) projects have been portrayed as the most global and successful examples of user integration and online collaboration (Hemetsberger 2009, Ofcom Report 2008, von Hippel and von Krogh 2003, von Krogh et al. 2003).

Following Crowston et al. (2004), 1) the time of existence, 2) the number of members, and 3) the rate of innovation and diffusion, are used as indicators for successful F/LOSS project, according to which the Drupal CMS is a particular example for a rapidly evolving, long-term, large-community project.

Major data sets defined:

The major data sets were defined based on findings from the observations and the electronic data analyses.

Within this paper the focus is on two major data sets, engaged with the community narratives on:

1. Symbolic and economical capital accumulation, to be addressed through the associated 1)social and technical capacity ranking of core and module developers (voluntary hierarchy), 2) attribution to the Drupal association (level of self organisation), 3) The Burton matrix[3]
2. The politics of the licensing: proprietary and free, closed and open software (addressed in the Burton Matrix, self-structured narratives within communities follow the opposition Cathedral vs. Bazaar, Cave vs. Community, Proprietary vs. Free, Closed vs. Open). As Qvortrup 2006 concludes "stability does not depend on rationality and centralized control…in modern societies the alternative to equilibrium is not chaos, but complexity, and that complexity is the result of dynamic, decentralized self-organization. Polycentrism does not lead to chaos, but to dynamic self-stabilization."

Findings point to modularity of software development and optional value, as identified by Baldwin and Clarkt 2005, as major (though not explicitly reflected) background for community

narratives, and thus a backbone for “native” modelling of software development projects. Dominantly normative narratives, defining cooperativeness, appraisal and freedom are a common narration string within the general community, while project success and expansion comes from shared norms and values (Weber 2004).

Vocal engendered perspectives oppose the otherwise formally community-wide accepted neutral narratives, through a particular reverse to the idea of “geek-ness” when attributing core female developers. (Of particular interest is the total lack of such reverse to “geeky” attributions and marginalisation when narrating female module developers. An intrpretation might be based on the opposition of core-modules as centre-periphery, e.g. a sort of a “reserved territory” image of the core.) Another noticeable issue is the predominantly female community-building activity on large scale community events, with the majority of sessions devoted to community building matters being led by female speakers.

Conclusions:

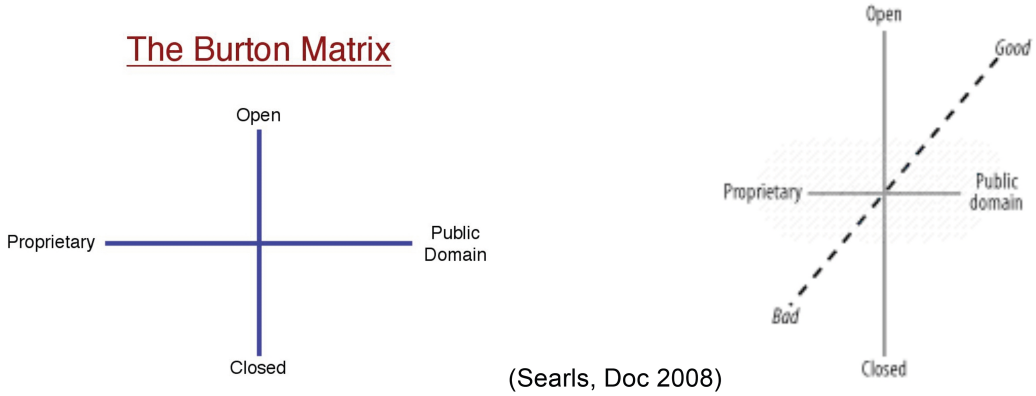
The analysis point to two specific approaches within the community to modelling software development projects: 1) A community based approach, with primal focus on identity narratives and a 2) Platform/Infrastructure approach, with technical networks at its core. These are in turn translatable into a number of renowned inquires based on game theories, organisational development theories and narrative theories.

Observed self-structured narratives within F/LOSS project development communities are organised around an “hourly glass”, where depending on the approach, different values are identifiable[4].

The Burton Matrix and the politics of licensing resemble community narratives about the social face of ICT in a dynamically created set of normatively laden oppositions.

Appendix:

1. Figure 1: The Matrix



(Searls, Doc 2008)

2. Excerpts from drupal developers` posts:

"I am also an Open Web evangelist and Social Web architect, second-class citizens within the Drupal community"

"However, culturally Drupal has from the very early days focused around Drupal.org as the one-stop-shop for all things Drupal. That's where development happens, that's where collaboration happens, that's where module forking (friendly or hostile) happens, everything. Drupal.org does not have a facility for charging for modules per-download. In part that is historical. In part it's because commercialized modules inhibit collaboration; why provide a patch with a new feature to a module you have to pay for? Why provide an extension to someone else's for-pay module, as it only makes more money for that other person and not for you?...the "Drupal Way" is not anti-commercial, but it is anti-non-collaborative."

Notes

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2. McInerney 2009
3. See Appendix, figure 1
4. See Appendix, Excerpts from drupal developers` posts

References

Backstrom, Lars (2006) Group Formation in Large Social Networks: Membership, Growth, and Evolution KDD'06, August 20–23, 2006, Philadelphia, Pennsylvania, USA.

Baldwin, Carliss & Kim B. Clark (2005) The Architecture of Participation: Does Code Architecture Mitigate Free Riding in the Open Source Development Model? Code architecture and open source development 2003, available at: www.people.hbs.edu/cbaldwin/DR2/BaldwinArchPartAll.pdf

Crowston, Kevin, Hala Annabi & James Howison. (2003a) Towards A Portfolio of FLOSS Project Success Measures, Twenty-Fourth International Conference on Information Systems, 2003 (Published conference paper)

Crowston, Kevin, Hala Annabi & James Howison. (2003b) Defining Open Source Software Project Success, Twenty-Fourth International Conference on Information Systems, 2003 (Published conference paper)

Faulkner, Wendy & Merete Lie (2007) Gender in the Information Society : Strategies of Inclusion, *Gender Technology and Development* 2007 11:157

Goh, Dion, Brendan Luyt, Alton Chua, See-Yong Yee, Kia-Ngoh Poh & How-Yeu Ng, Evaluating open source portals, *Journal of Librarianship and Information Science* 2008 40: 81

Grechanik, Mark and Dewayne E. Perry (2006) Analyzing Software Development as a Noncooperative Game, The Center for Advanced Research In Software Engineering

(ARISE). (Research Dokument)

Hemetsberger, Andrea & Christian Reinhardt (2006) Learning and Knowledge-building in Open-source Communities. A Socialexperiential Approach, *Management Learning* 2006 37: 187,

Hemetsberger, Andrea & Christian Reinhardt (2009) Collective Development in Open-Source Communities: An Activity Theoretical Perspective on Successful Online Collaboration, *Organization Studies* 2009 30: 987

Hemphill, Thomas (2005) Government Technology Acquisition Policy: The Case of Proprietary Versus Open Source Software, *Bulletin of Science Technology & Society* 2005 25: 484

Hippel, Eric &•Georg von Krogh (2003) Open Source Software and the "Private- Collective" Innovation Model: Issues for Organization Science, *Organization Science* Vol. 14, No. 2: 209

Kawamoto, D. (2007). European Union court rejects Microsoft's appeal in historic case. CNet News, available at http://news.cnet.com/8301-10784_3-9779499-7.html

Kelsic, Eric (2005) Understanding complex networks with community-finding algorithms, SURF 2005 Final Report

Kettell, Steven (2008) The Political Economy of Open-Source Software in the United Kingdom, *Bulletin of Science Technology & Society* 2008 28: 306

Krishnamurthy, Sandeep (2002) Cave or Community?: An Empirical Examination of 100 Mature Open Source Projects, *First Monday* 7: 6

McInerney, Paul-Brian (2009) Technology Movements and the Politics of Free/Open Source Software, *Science Technology Human Values* 2009 34: 206

Mitcham, Carl (1999) Why Science, Technology,and Society Studies? *Bulletin of Science Technology & Society* 1999 19: 128

Ofcom (2008) Social Networking. A quantitative and qualitative research report into attitudes, behaviours and use (Research Dokument)

Qvortrup, Lars (2006) Understanding New Digital Media : Medium Theory or Complexity Theory?, *European Journal of Communication* 2006 21: 345

Raymond, Eric (1997, last revision 2000) The Cathedral and the Bazaar (available at: http://www.catb.org/~esr/writings/homesteading/)

Searls, Doc, (2008)Understanding Infrastructure, Linux Journal, available at: http://www.linuxjournal.com/content/understanding-infrastructure (n/a) blog, available at: http://www.linuxjournal.com/blogs/docsearls

www.drupal.org, http://buytaert.net