

Scientific study about Debian Project governance and social organization

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Two academic management researchers, Siobhán O'Mahony and Fabrizio Ferraro, performed a detailed scientific study about Debian Project governance and social organization from the management perspective.

How ~~did the~~ big non-commercial, non-paying community evolve into one that produces some most respectable Operating Systems and applications packages

Introduction

The study analyzed 13 years of Debian Project participants and previous Leaders, and carefully observed patterns.

The open nature of Debian Project history, registered at discussion lists archives and irc logs, meetings reports, were also used during the data collection phase.

The study is VERY interesting as scientific analyzed HOW an open source project survived, evolved and flourished during 13 years, overcoming many troubles only challenged by long term BIG communities, reaching solid institutional foundations to resolve disputes.

Motivation

A large body of scholarship has examined the introduction of democratic or participatory mechanisms into bureaucratic organizations. The authors, [Siobhán O'Mahony](#) Professor at the [University of California's Graduate School of Management](#), and [Fabrizio Ferraro](#) General Management Professor at IESE, have studied the reverse process – the introduction of bureaucratic mechanisms into community forms.

One reason why community forms of production have not received as much attention as traditional capitalist forms is their inability to resolve problems of power, authority and governance.

With ethnographic research, the authors showed how a production community designed a governance system that incorporates a constitutionally endowed basis of authority with democratic mechanisms to ensure control by the majority, with shifting conceptions of authority and meritocracy over time.

Relatively little is known about the process of organizing in communities – how social groups accomplish the critical task of coordinating the actions of multiple individuals to achieve important outcomes.

The research takes a step toward filling this gap by examining how a social group designs a shared basis of authority and thus, a governance system.

The authors' examination of the emergence of a governance system in an open source software community shows how a community uses a formal bureaucratic basis of authority to reinforce the community's meritocratic norms.

However, this approach depends upon democratic mechanisms that not only limit that basis of authority, but allows the system to adapt with members' changing interpretation of leadership.

The authors find that while technical proficiency is an important criteria for leadership in such a group, it is not sufficient. Despite espoused preferences for 'hands-off leaders,' skill in building the organization becomes increasingly important over time.

Production communities differ from prior research on community forms in three ways that make them theoretically distinct and ripe for study.

First, unlike communities of practice or occupational communities, they do not share a common employer or workplace.

Second, unlike online communities, production communities must integrate individual contributions into a common pool, which can heighten interdependencies and the need for coordination mechanisms.

Third, production communities often 'own' the output of their work and work toward collective goals outside of the scope of their employer.

In any organization, there is a constant tension between fulfilling individual goals and integrating them with a common goal.

Organizations without a consensual basis of authority lack an important condition necessary for their survival. Those with directly democratic forms of participation do not tend to scale well and are noted for their difficulty managing complexity and decision-making – all of which can hasten their demise.

To retain the interest and commitment of voluntary members, any form of authority introduced must simultaneously preserve democracy and accountability to its members.

Weber thought that bureaucracy lead to meritocracy, "exercise of control on the basis of knowledge" (Weber, 1978). Parsons (1947) and Gouldner (1954) were among the first to note that Weber's notion of bureaucracy could lead to contradictory outcomes – arguing that positional authority and technical competence could be de-coupled and lead to bureaucracy without meritocracy.

Recent scholarship on open source communities suggests that any governance system introduced must be meritocratic in order to attract high quality contributions from voluntary members.

By rewarding merit with greater status, responsibility, or opportunities to enhance their own development, production communities can satisfy a contributor's need for recognition and reward in ways that their work lives may no.

Although it is widely recognized that successful open source projects often have strong leaders,

few have examined the roots of such governance systems.

Findings

The authors identified four phases to the evolution of Debian's governance system:

1. De facto Governance (1993 – 1996);
2. Designing Governance (1997 – 1999);
3. Implementing Governance (1999 – 2003); and
4. Stabilizing Governance (2003 – 2006).

The research provides two distinct theoretical contributions.

First, the authors clarify earlier speculation about how production communities organize and find evidence of a limited form of bureaucracy that is more enabling than it is coercive.

Second, the authors show that even in a community of open source programmers that espouses the value of technical contributions above all else, members' conceptions of leadership change over time to increasingly value organization building contributions.

Democratic mechanisms enable the community's governance system to adapt as members learn how to interpret leadership and authority in a community context. This suggests an evolving and context-dependent notion of meritocracy and that democratic mechanisms serve an important adaptive function.

The authors identified five new conceptions of leadership that varied in their degree of authority and in their focus on organizational versus technical concerns:

1. hands-off leader;
2. technical manager;
3. visionary leader;
4. organization builder;
5. organizational leader.

Debian was selected for further analysis because its longevity (it was formed in 1993) exposed it

to governance issues that may occur only over time.

As of the study writing, nine different leaders have led Debian over 13 years, suggesting that the Debian community had a mode of governance independent of its founder.

Developers who contribute to the community consider themselves to be part of “an association or a club, much like your local Linux User Group or Rotary, with the principle exception being that we hardly ever meet face to face.”

Debian receives corporate support and equipment donations from at least ten firms, two of which are Fortune 500 firms.

Phase I: De facto Governance (1993 – 1996).

The authors found that for its first five years, the Debian Project operated reasonably well without a formal means to represent its contributors in project governance.

Phase II: Designing Governance (1997 – 1999).

The community drafted a Constitution to formalize leadership roles, rights and responsibilities. It was ratified using itself, as a test case.

The governance system designed embraced two important and potentially contradictory elements:

- 1) formal positional authority and
- 2) limitation of that authority through democratic means.

Developing positional authority.

the authors found that Debian members were only interested in supporting a positional basis of authority if this role was also limited in ways that facilitated democratic control by the rest of the community.

Limiting positional authority through democratic means.

The authors found that positional authority, once created, was limited in four ways that preserved democratic rule.

First, the Constitution requires those in positional power to act in deference to the wishes of the collective.

Second, a Debian Project Leader is subject to the same rules as any member. The authority that comes with the role is just enough to encourage consensus building.

Third, as a failsafe measure, the authority of the leader can be recalled by the collective through a General Resolution process.

The fourth way that positional authority is constrained by democratic rule is through a countervailing source of authority.

Phase III: Implementing Governance (1999 – 2003).

In 1999, with the Constitution ratified, Debian developers began electing a project leader for one-year terms - effectively initiating a phase of experimentation with the leader role.

Phase IV: Stabilizing Governance (2003 – 2006).

Leadership, authority and meritocracy conceptions

Variation in conceptions of leadership that prevailed throughout the third phase began to reach settlement with the emergence of a new conception of authority, Organizational Leader, in 2003.

Organizational Leader platforms connected both organizational building and technical activities to the project's vision and goals.

Organizational Leaders focused on the challenges of motivating volunteers and aligning their interests with those of the community.

The authors identified six different conceptions of authority over time, and found that leaders embraced more organizational building behaviors over time.

Developers were more likely to become a member of the leadership team when their technical contributions were widely used by other members, as opposed to the mere volume of their efforts. Contrary to a simplistic meritocratic explanation, developers who engaged in organization building behaviors were more likely to become members of the leadership team.

Thus, Debian may be a meritocracy, but merit is not measured solely by ones' technical contribution.

Governance system validation: resolving conflicts within the approved framework

While the Debian Project community achieved some shared consensus on the preferred conception of leadership and authority, this does not imply that the community was free from strife or conflict. The authors' claim is merely that in Phase IV, when conflict over a leader's authority occurred, community members resolved these issues within the new governance framework that had been created and debated in Phases II and III.

As evidence of settlement, in 2006, Debian Project governance system survived a crucial test.

A group of developers used the General Resolution process to recall the project leader when they became unsatisfied with his management of the boundaries of the project.

This was the first leader recall in ten years, but now a formal process existed to handle challenges to a leader's authority.

The recall did not pass the General Resolution process, but provides evidence of members' ability and willingness to work within the governance system they designed.

As Selznick explained, "giving life to a constitution is partly a matter of achieving general consensus regarding proper ways of winning power and making laws".

By the end of 2006, the Debian Project community had achieved this.

The actual research text file

The [previously released](#) version of the research can be found [here](#)

The latest revised version, published in [Oct 2007, Vol 50](#) of [Management Journal](#) Issue 5, p1079-1106, 28p; (AN 27169153), is copyrighted and can not be published here.

About the Debian Project

Debian of [GNU/Linux](#) systems ([free](#) [libre](#) [GNU/Linux](#) [GNU/Hurd](#) [GNU/NetBSD](#) [GNU/kFreeBSD](#) [BSI3+](#) [officially](#) [packages](#) [15 hardware](#) [platforms](#) [and develops](#) [network devices](#) [mainframes](#) [supercomputers](#) by more than [volunteers](#) from [all over the world](#) [collaborate](#) [the internet](#) the [Debian Project](#)

Debian's dedication of [Free Libre Open Source Software](#) [constitutional](#) [open](#) and [meritocratic](#) model, [organization](#) [governance](#) [a first](#) among free libre operating system distributions.

The Debian project's key strengths are its [volunteer base](#) [Debian Social Contract](#) to [Debian Systems](#) [commitment](#) provide the best [attainable](#) [worldwide](#) [established](#) [policy](#) [QA Team](#) [users](#)

reporting [bugs, suggestions](#) [exchanging ideas](#) [registering experiences](#)

You [can help](#) [contribute](#) [without joining](#) [even not being a programmer](#)
development and or service

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to the Debian Project.

Debian Project news, press releases and press coverage can be found from the official Debian
wiki [page](#) contact at

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