

Keeping the Commons Healthy: Resilient Community Innovation in Open Source Software

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This paper details how open source software (OSS) development communities maintain an ecosystem conducive to constant innovation from its contributing members. We posit that successful open source communities develop a healthy balance of motivation through intrinsic and extrinsic means, along with a strong sense of culture, and supportive governance. Boundary organizations maintain these community attributes providing a foundational support structure, thus fostering the environment for innovation. This paper analyzes the actions within two leading open source projects, Drupal and Joomla (which collectively power millions of websites), that gave rise to healthy ecosystems of innovation.

Drawing on the work of Shah (2006), O'Mahony and Bechky (2008), and others complemented by interview data with founders and lead developers of the Drupal and Joomla projects, we seek to understand the pivots and turns in the projects that have led to high levels of innovation and the role of boundary organizations. The boundary organizations play several important functions: 1) Support infrastructure that allows project leads to hand off repeatable processes to the boundary organization thus reducing their burden and providing increased opportunity to focus on the development of the project; 2) Maintenance of incentive systems that reflect, actively cultivate, and perpetuate the ideals of the community; and 3) A collective gathering point for project leads to provide guidance on the culture and ethos of the community to maintain motivation.

Preliminary research has demonstrated that the boundary organizations engage in direct and indirect activities that seek to strike a balance between intrinsic and extrinsic motivations in their respective communities. Although both the Joomla and Drupal projects started out with different motivations, over time the projects have trended towards each other in motivational balance [Figure 1]. This research looks at the correlations between the events and actions undertaken through the boundary organizations to understand their role and importance in maintaining balance in the community [Figure 2].

Through personal interviews, survey data, and analysis of quantitative data of code contributions, attendance at events, and actions undertaken by boundary organizations and project leads we attempt to paint a historical picture of the rise of these communities thus providing a blueprint to the practicing manager on the cultivation and maintenance of their innovation ecosystem.

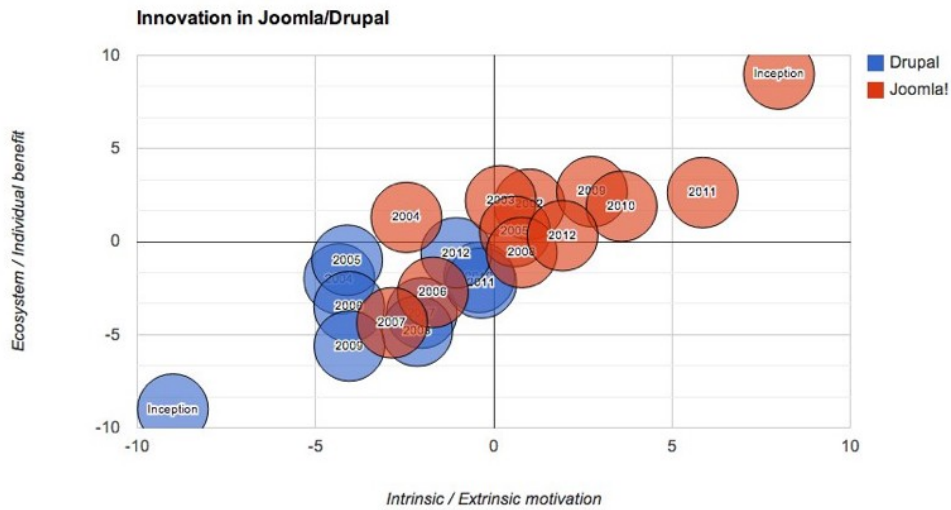


Figure 1
Demonstrates a progression of each project towards a balance of motivations.

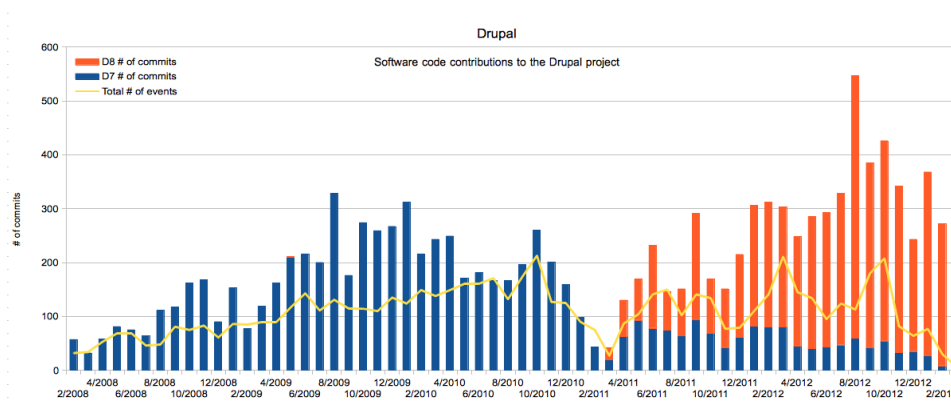


Figure 2
Contributions to the Drupal project follow event activity in the ecosystem often brokered by the boundary organization.

References

- Shah, Sonali (2006). "Motivation, Governance, and the Viability of Hybrid Forms in Open Source Software Development," *Management Science*, 52(7): 1000-1014.
- O'Mahony, Siobhán and Beth A. Bechky (2008). "Boundary Organizations: Enabling Collaboration among Unexpected Allies," *Administrative Science Quarterly*, 53: 422-459.