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Open Source Communities as Liminal Ecosystems

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ABSTRACT

In this paper, we propose a study to explore the movement of individuals engaged in open source communities. Although there is extensive literature on open source communities and growing body of knowledge on corporate engagement in open source communities, our understanding of the movements of individuals within these communities is limited. To analyze these movements, we build on Arnold Van Gennep and Victor Turners' theories on liminality. Through this lens, we build an understanding of the movements of individual members within open source communities.

Keywords

Liminal; Open Source; Community; Corporate Engagement; Liminal Ecosystem; Job-hopping

INTRODUCTION

Corporations are increasingly leveraging open source software communities to reduce development costs by collaborating with competitors on non-differentiating technologies (Germonprez et al. 2013). Open source software communities consist of individuals who have a shared focus and practice. Community members are increasingly corporate employees who are paid to participate in these communities (Dahlander and Wallin 2006; Fitzgerald 2006) in which corporations support these employees not only to develop software but also to influence the direction of the community (Dahlander and Magnusson 2005).

As such, open source communities are a collection of individuals from multiple corporations (Dahlander 2007) whose participation in open source communities creates new organizational structures (Feller et al. 2008). Within these structures, individuals often move between companies while maintaining their role within an open source community. While we know that individual contributions to open source communities lead to higher likelihood of job hopping (Huang and Zhang 2013), our knowledge about the nature of these personnel movements between and among corporations is limited (Aksulu and Wade 2010; Von Krogh et al. 2012).

The nature of individual movement in open source communities can inform corporate training, career advancement, and the health of open source communities. In this project, we explore the experiences of individuals as they join open source communities and move between corporations in the context of open source community engagement. This leads to the research question:

How are movements of individual members of open source communities understood?

CORPORATE ENGAGEMENT IN OPEN SOURCE

Since the early 2000s, many companies like Hewlett Packard, Intel, and Google have been leveraging open source communities as a key component of their for-profit design streams. Open source communities are a diverse collection of members individual volunteers, corporate employees, foundations, and universities, all organized around a practice and goals of a shared endeavor (Kelty 2008). These communities offer corporations lowered internal development costs and decreased product time-to-market. Corporate engagement with open source communities has been studied extensively in recent years. Prior research has explored corporate relationships with open source communities (Dahlander and Magnusson 2005) and how corporations make use of these communities to commercialize open source software (Dahlander and Magnusson 2008). Open source software communities have become sophisticated networks of individuals and corporations that exchange resources between organizations to foster and sustain innovation on non-differentiating technologies (Feller et al. 2008; Germonprez et al. 2016). Further, open source has altered corporate design concepts, creating dynamic and responsive design environments, corporations leverage for financial gain in both proprietary and communal projects (Germonprez et al. 2016). Open source communities

provide corporations a platform to engage in collaborative design on non-differentiating technologies (practices and technologies not unique to an organization) (Germonprez et al., 2013). These communities are attractive to for-profit companies because they provide low-cost solutions for problems that multiple companies may face (Figure 1).

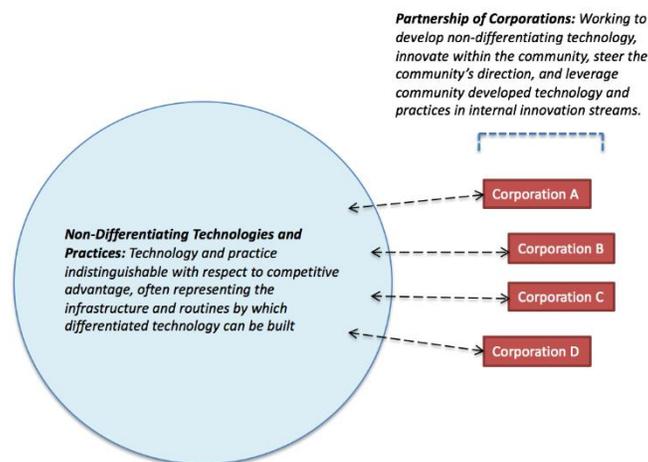


Figure 1: Corporations leverage open source communities to partner on non-differentiating technology. Adapted from Levy and Geromonprez (2015).

LIMINALITY AS A THEORETICAL FRAMEWORK

In prior empirical studies, liminality has been used as a metaphor to study temporary employees (Garsten 1999), individual and organizational learning (Tempest and Starkey 2004), technology implementation (Wagner et al. 2012), trajectory shifts in institutional entrepreneurship (Henfridsson and Yoo 2013), and consulting (Czarniawska and Mazza 2003).

Anthropologist Arnold Van Gennep (1909) introduced liminality in his work *Les rites de passage* to denote rituals of transition of both space and time. Liminality is defined as a midpoint between a starting point (e.g., old employer) and an ending point (e.g., new employer), and as such it is a temporary state that ends when the individual is reincorporated back into the social structure they left or incorporated into a new social structure. While in this liminal space and not yet a part of the new social structure, the individuals' identity is uncertain (Turner 1969).

Liminal individuals are “neither here nor there,” they are “betwixt and between” the positions assigned and arrayed by law, custom, and convention (Turner 1969). As such, their ambiguous nature can be described using a rich variety of symbols (Turner 1969). This liminal space is often characterized by themes of homogeneity, anonymity, absence of property, and the reduction to same status level. Individuals in liminal spaces may develop their own internal social structures thus creating a normative community (Turner 1975). These normative community movements “try to create a *communitas* and a style of life that is permanently contained within liminality. ... Instead of the liminal being a passage, it seemed to be coming to be regarded as a state” (Turner 1975, p. 261). Thus, we use liminality as a lens to understand the movement of individuals engaged within open source communities and refer to participants of open source communities as liminal individuals engaged in practice as members of a *liminal ecosystem*.

PROPOSED METHOD

To understand these liminal individuals, we examine the movements of corporate employees engaged in open source communities. We accomplish this through content analysis (Lombard et al. 2002) to identify themes related to liminality. The characteristics of liminality as described by Victor Turner (1975) will be used to identify similar characteristics in open communities. We thematically analyze interview transcripts (Creswell 2012) from a five-year field study that explored corporate engagement with open source communities. The dataset consists of eighty interviews and three focus group sessions with managers and developers from corporations actively engaged with open source communities (including several Fortune 1000 corporations). As part of their employment, these individuals were actively engaged in open source communities. The participants were asked a series of semi-structured interview questions aimed at assessing their process of engaging with open source communities. The interview questions explored - (1) Why organizations participate in open source communities, (2) How organizations determine the balance between contributions and differentiation, and (3) What educational and human

resources considerations are necessary to participate in open communities. The questions covered a variety of areas including, information gathering, differentiation, compliance, hiring practices, training, and organizational structure.

The preliminary findings of this exploratory study will be used to refine and create focused interview questions (Creswell 2012). Through engaged field study and a set of focused interviews, we will further analyze data related to these liminal individuals. Engaged field study will allow us to build from our own reflective experiences, and to understand the cognitive, social, and technological structures of the field, constructing a “system of meaning within which our experience is embedded” (Dourish 2014, p. 7).

MOTIVATING DATA

Looking at example quotes from the preliminary dataset, we next discuss ways to move forward. In the following example, a manager at a company discusses developers moving to new organizations in order to continue engaging in the open source community.

“[Our company] has a product based on Debian for the telecommunication sector, so we used to hire a lot of Debian developers, and used to invest a lot of effort into Debian (paraphrased)... But then over time, that involvement changed... and so, what you see is that a lot of people have left [our company] because they want to work in Debian, and because they couldn’t do that at [our company] anymore and they just left for a different company.”

Derived from this quote we can see symptomatic issues related to liminality such as the open source community becoming a normative community for these individuals. The individuals may identify less with the organization they work for and more with the open source community. Further, this quote can be used to construct a more directed interview question:

Describe your experiences with companies you have worked for while maintaining engagement in an open source community.

In another example, a manager at a company discusses hiring individuals from open source communities based on project needs and developer expertise.

“One of the things that we also realized is that one of the fastest ways [to engage in an open source community] is to hire some of those people out of the community, so we’ve actually made a number of fairly high-profile hires. So people like [name redacted], for example, works for [our company] because we see a tremendous amount of value in his work, and he’s integrally involved in the kernel operations and has been for forever.”

This quote illustrates that companies look to these normative communities to find individuals to work on specific projects. Additionally, liminality is often associated with rites-of-passage and training (Turner 1969). The following quote, shows companies often hire experienced open source developers to mentor their in-house employees. These positions are often temporary and end when the company’s involvement in the project ends. Illustrating and reiterating a trend of constant movement among organizations.

“Open source communities operate so fundamentally different from the way that people are taught in universities so developers can’t easily [transition to open source development] if they have never had exposure or a fair amount of mentoring. So, what you have to do is you have to bring someone in who understands how this stuff works, who can mentor the other people. Or you need to find someone within your organization who’s done it for fun or on a previous job.”

From these quotes, we can construct questions around an individual’s experiences becoming a part of the open source community:

Could you describe how you became a member of the community? Were there individuals that shared knowledge with you about the community? When did you feel like you were a member of the community?

In our last example, a manager at a company discusses the ambiguity and issues around an individual working for and contributing code to the community as representatives of a corporation.

“For some companies, there are a lot of contributors that contribute under their personal email address, especially to Linux. But they are actually employees of a larger organization... and we typically look and see which company they are employed with so we know where the code is coming from (paraphrased)... A whole lot of active participants in a community may be employed by a certain employer, and they clearly speak on their behalf, and they may or may not think about reputation of their employer...”

From this quote, we see confirmation of the ambiguous nature of an individual being paid to be a member of an open source community. The corporation, community, and the individual may all have different understandings of an individual's identity. From this quote, we can then ask:

How do you understand your position in the community? As an individual? As a corporate employee?

In these preceding examples, we illustrate how the existing data set can be used to derive focused interview questions. It is from these focused interview questions that we will precisely explore liminality and advance our understanding of how the movements of open source community members can be described and understood.

CONCLUSION

Open source communities are complex ecosystems where individuals move between corporations, often continuing engagement with the same open source community on behalf of the new corporation. As a collection of individuals, these communities form a normative structure that cuts across corporations. By exploring the movement of individuals in these open source communities we can better understand the complexity and relationships of the open source ecosystem allowing corporations to make better decisions. Viewing the open source ecosystem through the lens of liminality, allows us to advance liminality by developing it as a modern organizational theory and shedding light on the practice associated with corporate engagement with open source communities.

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REFERENCES

1. Aksulu, A., and Wade, M. 2010. "A comprehensive review and synthesis of open source research," *Journal of the Association for Information Systems*, (11:11).
2. Creswell, J. W. 2012. *Qualitative inquiry and research design: Choosing among five approaches*, (3rd ed.), Los Angeles: SAGE Publications.
3. Czarniawska, B., and Mazza, C. 2003. "Consulting as a liminal space," *Human Relations*, (56:3), pp. 267–290.
4. Dahlander, L. 2007. "Penguin in a new suit: A tale of how de novo entrants emerged to harness free and open source software communities," *Industrial and Corporate Change*, (16:5), pp. 913–943.
5. Dahlander, L., and Magnusson, M. 2008. "How do firms make use of open source communities?," *Long Range Planning*, (41:6), pp. 629–649.
6. Dahlander, L., and Magnusson, M. G. 2005. "Relationships between open source software companies and communities: Observations from Nordic firms," *Research Policy*, (34:4), pp. 481–493 (doi: 10.1016/j.respol.2005.02.003).
7. Dahlander, L., and Wallin, M. W. 2006. "A man on the inside: Unlocking communities as complementary assets," *Research Policy*, (35:8), pp. 1243–1259.
8. Dourish, P. 2014. "Reading and interpreting ethnography," in *Ways of Knowing in HCI*, J. Olson and W. Kellogg (eds.), Springer, pp. 1–23.
9. Feller, J., Finnegan, P., Fitzgerald, B., and Hayes, J. 2008. "From peer production to productization: A study of socially enabled business exchanges in open source service networks," *Information Systems Research*, (19:4), pp. 475–493.
10. Fitzgerald, B. 2006. "The transformation of open source software," *MIS Quarterly*, (30:3), pp. 587–598.
11. Garsten, C. 1999. "Betwixt and between: Temporary employees as liminal subjects in flexible organizations," *Organization Studies*, (20:4), pp. 601–617.
12. Germonprez, M., Allen, J. P., Warner, B., Hill, J., and McClements, G. 2013. "Open source communities of competitors," *Interactions*, (20:6), pp. 54–59.

13. Germonprez, M., Kendall, J. E., Kendall, K. E., Mathiassen, L., Young, B., and Warner, B. 2016. "A theory of responsive design: A field study of corporate engagement with open source communities," *Information Systems Research* (doi: 10.1287/isre.2016.0662).
14. Henfridsson, O., and Yoo, Y. 2013. "The liminality of trajectory shifts in institutional entrepreneurship," *Organization Science*, (25:3), pp. 932–950.
15. Huang, P., and Zhang, Z. 2013. "Participation in open knowledge communities and job-hopping: Evidence from enterprise software," SSRN Scholarly Paper No. ID 2276937, , Rochester, NY: Social Science Research Network.
16. Kelty, C. M. 2008. *Two bits: The cultural significance of free software*, Duke University Press.
17. Levy, M., and Germonprez, M. 2015. "Is it egalitarianism or enterprise strategy? Exploring a new method of innovation in open source," Presented at the 21st Americas Conference on Information Systems, AMCIS 2015, Americas Conference on Information Systems (available at <https://nebraska.pure.elsevier.com/en/publications/is-it-egalitarianism-or-enterprise-strategy-exploring-a-new-metho>).
18. Lombard, M., Snyder-Duch, J., and Bracken, C. C. 2002. "Content analysis in mass communication: assessment and reporting of intercoder reliability," *Human Communication Research*, (28:4), pp. 587–604 (doi: 10.1111/j.1468-2958.2002.tb00826.x).
19. Tempest, S., and Starkey, K. 2004. "The effects of liminality on individual and organizational learning," *Organization Studies*, (25:4), pp. 507–527.
20. Turner, V. 1969. *The ritual process: Structure and anti-structure*, Transaction Publishers.
21. Turner, V. 1975. *Dramas, fields, and metaphors: Symbolic action in human society*, Cornell University Press.
22. Van Gennep, A. 1909. *The rites of passage*, University of Chicago Press.
23. Von Krogh, G., Haefliger, S., Spaeth, S., and Wallin, M. W. 2012. "Carrots and rainbows: Motivation and social practice in open source software development," *Mis Quarterly*, (36:2), pp. 649–676.
24. Wagner, E. L., Newell, S., and Kay, W. 2012. "Enterprise systems projects: the role of liminal space in enterprise systems implementation," *Journal of Information Technology*, (27:4), pp. 259–269.