EXPRESSING THE DOMESTICATION OF OPEN SOURCE: HOW THE ECOSYSTEM METAPHOR ILLUMINATES AND OBSCURES UNDERSTANDING OF ORGANIZATIONAL PARTICIPATION IN OPEN COMMUNITIES

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ABSTRACT

In our investigation, we explore the domestication of open source [2] moving away from the idea of free software as a social ideal. We explore the domestication of open source as the joint production of open source software vis-à-vis a relationship between for-profit corporations and open source communities. The domestication of open source constitutes an evolutionary change in the ecosystem composed of organizational participants, developers in open source environments, and the artifacts, standards, and practices they create together.

INTRODUCTION

Our paper looks at the widely expressed metaphor of ecosystem, identified in interviews with over 80 employees including managers and developers from 40 organizations participating in the broad Linux environment as they discuss their participation in the rapidly evolving relationship between proprietary and open source development efforts. In the course of our research, we examine the idea of what constitutes this important metaphor, and how metaphors are paradoxically and simultaneously both help and hinder understanding in the multifaceted relationship that is open source.

THE OPEN SOURCE SOFTWARE DEVELOPMENT ECOSYSTEM

For our methodological approach, we use the work of Mars, Bronstein, and Lusch [5] in order to frame a conceptual understanding of how the ecosystem metaphor is functioning in the relationship among for-profit organizations, the nonprofit Linux Foundation, and the Linux open source environment they both function in.

The metaphor of the ecosystem is adopted freely on nonprofit foundation websites such as those of the Apache Foundation and the Linux Foundation. A readily understandable translation or meaning of ecosystem in those situations might be “The world of Linux,” or “The world of Apache.” But ecosystem has resonance as a conceptual frame, and appeared in our interview data as a popular metaphor for describing the interactions of software, organizations, and people working together. Often the idea of ecosystem is employed just because it is thought to be widely understood. Used in this “shorthand” way, the metaphor of the ecosystem is meant to evoke volumes with one word.

Building on the work of Mars, Bornstein and Lusch [5] as well as research in the use of metaphors in systems development [3] [4], we systematically explore the use of the metaphor of the ecosystem in interviews with open source participants. We generate insights into the differences and similarities of biological and organizational systems, explore the entailments of the ecosystem metaphor that might result in miscommunication, or that might obscure, rather than reveal, the important aspects of the complex interdependencies between the open community and for profit corporations. Finally, we contemplate the possibility of creating models that predict emergent organizational dynamics once the ecosystem metaphor is truly shared and understood.

DOMESTICATION, RISK MANAGEMENT, AND PROVENANCE

As a prominent organizational dynamic within a software development ecosystem, domestication manifests itself in a number of ways, one of which is risk management, or more specifically, risk mitigation [1]. One recommendation to strengthen the positive aspects of risk mitigation is to consider provenance, which is used in the world of fine art to express many details regarding the history of a painting, for example. It documents not only the artist who created the painting, but who first appreciated and purchased it, who owned it through time, how it was stored, and where and when it was exhibited. Provenance can be used to authenticate a painting. Provenance has been used to document fine wine, rare books, and in the sciences, including archaeology, paleontology, and biology.

Provenance can be useful in documenting the creation or modification of a specific open source package or the use and redistribution of such a package. It is advantageous because it reframes the licensing aspects of open source software from a negative exercise to a positive approach, an important part of domestication. Rather than concentrate on the negative aspects of risk management regarding license compliance, provenance documents the positive aspects of collaboration in open source software development. By adding provenance to software meant to provide SPDX (Software Package Data Exchange) specifications, a positive record of the ecosystem can be included.

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