A Grounded Theory Approach to the Study of Open Source Software Development Process

Yuhong Tian
University of Nebraska at Lincoln, yhtian@unlserve.unl.edu

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yhtian@unlserve.unl.edu

ABSTRACT
Open source software is becoming increasingly important and popular. However, the process of open source software development (OSSD) is far less understood when compared to the prevalent final products of the process. The unique characteristics of OSSD imply that the traditional software development process can not be readily applied to OSSD. In addition, research on OSSD process is scanty at best and there are no comprehensive propositions on standardizing OSSD processes. In this research, we propose an in-depth grounded theory approach to understand open source software development process. We analyze the archives of an OSSD project’s mailing lists and we will also conduct online interviews with OSSD practitioners. The preliminary finding of this research is a Phase-Role-Skill-Responsibility (PRSR) OSSD process model. The proposed model consists of three OSSD process phases -- Launch Stage, Before the First Release, and Between Releases. These three phases address the characteristics of the OSSD process as well as the identified factors that influence the OSSD process. In the PRSR model, different roles/actors are required to have different skills and responsibilities corresponding to each of the three OSSD phases. This research contributes to the software development literature as well as to open source practice with the development of a comprehensive software development process model that depicts OSSD process.