Evaluating the Health of Open Source Components

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Abstract

Context: Implementing open source components into commercial applications has many advantages for software developers. However, an unforeseen decline in health of the supplying community can lead to a number of complications or large expenses, caused by transition costs to an alternative software component. Successful product managers must be able to assess the health of the open source communities their applications depend on.
Objective: In this paper we present a modular method for software product managers that allows them to assess the health and vitality of open source communities.
Method: The research is founded on a systematic literature review on the topic of open source and software ecosystem health, as well as a case study at a software firm with extensive open source experience.
Results: The main research result is an Open Source Component Health Analysis Method that can be applied and fully customised by software product managers. The method is based on a list of open source vitality indicators, as well as an open source interaction model, including the role of commercial patronage in contemporary open source communities.
Conclusion: Recent appearances of commercial patronage appear to dilute the classical distinction between voluntary private contributions to open source and software development for commercial software firms. The introduced method presents a new and structured approach to open source vitality analysis and can help product managers to increasingly implement open source in their products.

Keywords: open source, vitality analysis, health analysis, software ecosystem

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