A Survey of Software Development with Open Source Components in Chinese Software Industry

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Abstract. Chinese software companies are increasingly using Open Source Software (OSS) components in system development. Integrating such components into new software systems leads to challenges related to component selection, component integration and testing, licensing compliance, and system maintenance. Although these issues have been investigated industrially in other countries, few state-of-the-practice studies have so far been performed in China and with a representative subset of software companies. It is therefore difficult for Chinese software companies to be aware of special issues, or to plan improvement of OSS-related processes. This paper describes a questionnaire-based survey in Chinese software companies of software development with existing OSS components. Data from 47 finished development projects in 43 companies have been collected. The results show that use of web search engines was the most common method to locate OSS components. Local expertise combined with requirements compliance was the most decisive factors when choosing an identified component. To avoid legal exposure, the common strategy was to use components without licensing constraints. About 84% of the components needed bug fixing or other code changes, rarely relies on support from the OSS community. However, close participation with the OSS community was rare, although most developers meant that this was important.