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It is More Blessed to Give than to Receive – Open Software Tools Enable Open Innovation

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ABSTRACT

Open Innovation (OI) has attracted scholarly interest from a wide range of disciplines since introduced by Chesbrough [1], i.e. "a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology". However, OI remains unexplored for software engineering (SE), although widespread in practice through Open Source Software (OSS). We studied the relation between SE and OI and in particular how OSS tools impact on software-intensive organization's innovation capability.

We surveyed the literature on SE and OI [3] and found that studies conclude that start-ups have higher tendency to opt for OI compared to established companies. The literature also suggests that firms assimilating external knowledge into their internal R&D activities, have higher likelihood of gaining financial advantages.

In a case study, we observed how OSS tools Jenkins and Gerrit enabled open innovation [2]. We mined software commits to identify major contributors, found them be affiliated to Sony Mobile, contacted five of them for interviews about their and their employer's principles and practices with respect to OI and tools, which they gave a consistent view of.

Our findings indicate that the company's transition to OI was part of a major paradigm shift towards OSS, while the adoption of open tools was driven bottom up by engineers with support from management. By adopting OI, Sony Mobile achieved freed-up developers' time, better quality assurance, inner source initiatives, flexible development environment, faster releases and upgrades. Particularly, the introduction of a test framework was proposed by Sony Mobile but implemented by other contributors [2]. However, the benefits are gained through investing significant attention and resources to the OSS community in terms of technical contributions and leadership.

BODY

Sharing software tools enables open innovation, brings faster upgrades and frees up resources, but demands investments in the open community

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