ABSTRACT

Background: Open Source Software (OSS) today makes up a central part and source of innovation for a diversity of firms and their business models. This is done either directly as a part of, or indirectly as an enabler for their product and service offerings. The openness implies a membership for the focal firm to a dynamic ecosystem with both known and unknown stakeholders. This needs consideration in regards to how the firm should act and bridge their internal Requirements Engineering (RE) process with the external one, and in the end what to share openly with ecosystem, when and to whom.

Aim: The aim is to create a foundation for future strategic support that can help firms involved in OSS ecosystems to make decisions on what to share and what to conceal, in order to influence the external RE process to align with internal strategies and business incentives.

Research Methodology: To investigate the problem from a real-world perspective, empirical software engineering research methods with a focus on case studies are used. Studies were performed both from a firm as well as an ecosystem perspective to understand the interaction between them. Open Innovation theory is used to define the problem from a firm’s perspective.

Results: The studies suggest that firms adopting OSS internally can use the external workforce of the OSS ecosystem as a source of innovation in regards to both their internal processes and products. RE processes towards the ecosystem are informal and social, matching the general culture of OSS RE. Software considered as non-competitive or commodity are shared openly while stricter guidelines apply for that which has a higher business criticality or need for control. The OSS ecosystems in which the firms operate have evolving stakeholder populations where firms’ influence and collaboration fluctuates with time. Influence is a pertinent attribute in stakeholder identification and analysis of OSS ecosystems. It can help understand stakeholders’ agendas and provide input to contribution decisions.

Conclusion: By creating guidelines for what to share, when and to whom in OSS ecosystems, firms can align and bridge internal strategies and RE process with the ecosystems’. Future strategic support should combine such guidelines with the input of a systematic and continuous stakeholder analysis process of the ecosystems in terms of the stakeholders’ influence and interactions in the ecosystems.