SOCIAL CAPITAL AND VALUE CREATION IN OPEN SOURCE SOFTWARE COMMUNITIES: THE ROLE OF FIRM-SPONSORED DEVELOPERS

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Open source software (OSS) communities consist of users, developers as well as firms and constitute a resource pool companies may utilize to complement their own resource base (Grand *et al.*, 2004). The way in which companies benefit from OSS communities varies and corresponds with the strategy they maintain (Dahlander and Magnusson, 2008). For example, software development firms can benefit by capturing technical knowledge available in the OSS community (Colombo *et al.*, 2013) but also cut costs through integrating OSS software in their own products. These different strategies become possible as OSS shares characteristics of a public good, that is, non-excludability and non-rivalry (Wasko *et al.*, 2009).

Although these characteristics enable firms to appropriate from OSS as such, it is difficult to differentiate own offerings that rely on, or benefit from OSS from those of competitors (Da Silva and Alwi, 2008). Thus, it is vitally important to at least influence the development trajectory of an OSS project to optimize the benefits that arise from making use of OSS communities (Schaarschmidt, 2012). One way of establishing influence in OSS communities is by deploying own resources to an OSS project (Schaarschmidt *et al.*, 2013; West and O'Mahony, 2008). Firm-sponsored developers are contractually bonded to the firm and are likely to behave in the firm's sense while contributing to the OSS project as "a man on the inside" (Dahlander and Wallin, 2006). Thus, assigning own paid developers to work for an OSS project is a suitable means to influence project work. On the other hand, the pertinent literature on user communities and governance in OSS maintains that a large proportion of influence individuals have in a community depends on their position in the community (e.g., Crowston and Howison, 2006; Dahlander and O'Mahony, 2011). This view is reflected by social capital theory, which posits that strong relationships and network positions that are advantageous to access information are valuable resources that affect different downstream variables, most importantly value creation (Tsai and Ghoshal, 1998). Recently, the relation between network position in an online community and different positive outcomes, which can be seen as a proxy for the value created, has been emphasized in various areas. For example, Chou and He (2011) were able to show that a developer's social capital positively affects expertise integration and task completion. Relatedly, Wasko and Faraj (2005) found for electronic networks of practice – communities that share characteristics with OSS communities – that social capital is associated with knowledge contributions. Aside from these research efforts, which mainly measure the downstream variables via questionnaires, important aspects that pertain to the measurement of firm-sponsored developers' created value in OSS projects via network or source code data have not been addressed yet. Against this background, this study aims to extend research using social capital to predict diverse forms of value by using alternative operationalizations of the different social capital dimensions (Nahapiet and Ghoshal, 1998) as well as forms of value (e.g., source code contributions).

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