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Collaboration post-acquisition: The role of acquirers' motives

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Abstract

Research Summary: What role do collaborations with a target's partners play in an acquisition, and how do these collaborations evolve post-acquisition? Research suggests that these collaborations are an important reason to acquire but often diminish post-acquisition. But if they tend to diminish, why are they a reason to acquire? Our analysis of acquirers' motives of 143 acquisitions of firms that collaborate with partners on 298 open-source projects resolves the outlined puzzle and reveals two types of acquisition motives: protection-motivated acquisitions—where acquirers focus on protecting the complementarity with the technology and the partners, and extraction-motivated acquisitions—where acquirers focus on extracting technology and employees. We find that protection-motivated acquisitions are associated with an intensification of collaborations, meanwhile extraction-motivated acquisitions are associated with a diminishment of the collaboration. We contribute to research on acquisitions, collaboration, and OSS.

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Managerial Summary: Acquisitions don't just change ownership—they reshape collaboration with the target's partners. We studied 143 acquisitions of firms that sponsor and collaborate with partners on 298 open-source software projects. We track contributions before and after the acquisition. We find that the motives of the acquirers are associated with different outcomes. When acquirers aim to protect complementarities, contributions from the acquired target and its partners tend to rise. When they aim to extract resources—redeploying code or talent—contributions typically decline. Managerial takeaway: when you are a stakeholder in a particular OSS, examine how likely the acquisition of its sponsors is, and what the acquirers' motives are.

KEYWORDS

acqui-hires, acquisition motives, acquisitions, community, killer acquisitions, open-source software (OSS)

1 | INTRODUCTION

When corporations acquire a target firm, they often do so—in part—to benefit from the collaboration with the target's partners (Agarwal et al., 2012; Argyres et al., 2025; Burns & Collett, 2017; Feldman & Hernandez, 2022). For example, acquirers seek to benefit from a target's supplier network, its web of complementors, or its community of users. But while collaborations with the target's partners are often important, their continuation must not be taken for granted; collaborations often diminish post-acquisition (Rogan & Greve, 2015; Rogan & Sorenson, 2014). The finding that collaborations often diminish post-acquisition motivates corporations to acquire raises the question: what is the acquirers' strategy? It is puzzling that collaborations that tend to diminish are nevertheless a reason for the corporation to acquire.

To better understand acquirers' strategies, we study *the motives acquirers state* when making an acquisition. These motives provide a glance at the strategy that acquirers pursue with respect to the target's collaboration; we categorize these motives and examine if and how they are linked to the collaboration post-acquisition. There are good theoretical reasons to believe these are linked: The stated motives may indicate the future behavior of the target which is by then under the control of the acquirer. They may also allow predicting the target's partners' future collaboration behavior as they consider the motives stated by the acquirer when deciding whether and how to engage in the collaboration post-acquisition.

We follow a question-driven approach (Graebner et al., 2022) and examine our question(s) in the context of the open-source software (OSS) industry. Specifically, we study the acquisitions of OSS-sponsoring firms. OSS-sponsoring firms collaborate with partners on public OSS projects. We start out by categorizing the motives that acquirers state—examining if and how the



collaboration with the target's partners is featured. To categorize motives, we identify and manually code news articles and press releases covering acquisitions. The resulting categorization serves as an input for our main analysis: we examine the linkage between the stated motives and the collaboration post-acquisition. We measure (post-acquisition) collaboration by the number of contributions to OSS projects on whose development the (acquired) target and partner worked jointly, distinguishing contributions by the employees and the partners of the target. To assess if and how acquisitions, and specifically acquisitions associated with different motives, affect collaboration we conduct a difference-in-differences (DiD) analysis of the collaboration on 2386 sponsored OSS projects.

Our analysis of acquirers' motives reveals two distinct types of motives: *to protect complementarities* or *to extract resources*. These are associated with substantially different post-acquisition collaboration behaviors: Acquirers with *protection motives* see the collaboration with partners as complementary to their own efforts and thus seek to protect and support it; we find evidence that collaborations with partners of the target *intensify* after acquisitions with protection motives. In contrast, acquirers with *extraction motives* are focused on extracting the resources of the target, for example, its employees and technologies; for these acquirers, the target's collaborations and their continuation are irrelevant and serve mostly as a signal of the targets' resources. When examining the collaboration post-acquisition, we find that the collaborations with the target's partners *diminish* after acquisitions with extraction motives.

We contribute to research on *acquisitions* by examining acquirers' motives and their linkage to collaboration post-acquisition. Our key contribution lies in illustrating two kinds of acquisitions: protection- and extraction-motivated acquisitions. This finding helps to resolve the puzzle that collaborations are a reason for corporations to acquire a target despite often diminishing post-acquisition (Hernandez & Menon, 2018; Hernandez & Shaver, 2019; Rogan & Greve, 2015; Rogan & Sorenson, 2014). In extraction-motivated acquisitions, acquirers do *not* invest in the collaborations, explaining why they often do not continue. In the protection-motivated acquisitions, acquirers do invest in the collaboration, and collaborations tend to perform well post-acquisition. Our analysis also highlights a neglected consequence of a key feature of acquisitions: structural integration. Structural integration affects acquirers' ability to maintain the sought-after collaboration between the target and its partners.

By studying collaboration behavior post-acquisition, we also contribute to research on *collaboration dynamics* (Ahuja et al., 2012; Clough & Piezunka, 2020; Levinthal & Fichman, 1988; Sytch & Tatarynowicz, 2014; Thatchenkery & Piezunka, 2025; Zhelyazkov & Gulati, 2016). We examine how the collaboration between the target and its partners evolves when the target comes under the control of a third party. We illustrate that a change of control of the target does often—but does not have to—lead to the diminishment of the collaboration; the collaboration may as well thrive as long as the new owner is committed to and engages in the collaboration. The frequently observed diminishment of collaborations post-acquisition must not be taken as an indicator of the collaborations' fragility: it mostly reflects the motives and corresponding actions of the (new) actors in charge.

Finally, we contribute to research on OSS. Our study informs research on whether corporations' engagement helps or hurts OSS projects (Dahlander & Wallin, 2006; Safadi et al., 2025; Spaeth et al., 2015; Stewart et al., 2006; Zheng & Wang, 2025). Our data illustrate that both can be the case, but the specific outcome is contingent on the corporations' motives. Our analysis also illustrates the nature of corporations' dependence on OSS. The engagement in *protection-motivated acquisitions* points to their dependence on specific OSS projects, and their engagement in *extraction-motivated acquisitions* points to their dependence on OSS-related skills.

2 | THEORETICAL BACKGROUND

A large body of research in strategy examines the antecedents and consequences of corporate acquisitions.¹ Research in this realm also shows that the target's collaboration partners play an important role in acquisitions. Acquirers are in part motivated by the target's collaboration partners: they strive to gain access to the benefits associated with these collaborations and to improve their structural position within the collaboration network (e.g., reaching a brokerage position) (Burford et al., 2025; Friedmann & Kavusan, 2026; Hernandez & Menon, 2018; Hernandez & Shaver, 2019). While intriguing, this finding is puzzling given the evidence on how these collaborations evolve post-acquisition.

Research examining how collaborations evolve post-acquisition finds that they often diminish. Partners may be unwilling to continue to collaborate. Rogan and Greve (2015) find that following the acquisition of advertising agencies, the agencies' collaborations become more likely to end. In a review of customer roles in acquisitions, Öberg (2013) shows that customers often end their relationship with a firm after it is acquired. The danger of collaborations diminishing is particularly prevalent when partners are not contractually obliged to continue to collaborate (e.g., gig workers, voluntary contributors) (Chung et al., 2025; He et al., 2020; Loh & Kretschmer, 2023; Nagaraj & Piezunka, 2024). Given the frequent diminishment of collaborations post-acquisition, it is puzzling that acquirers are motivated in part by these collaborations.

To address this puzzle, we suggest studying the motives that acquirers state when making an acquisition and linking them to the collaboration post-acquisition. We focus on stated motives as there is good reason to believe that they are linked to the post-acquisition collaboration behavior: they reflect the acquirer's intended approach to managing the target and also influence partners' anticipation of the acquirer's commitment to the collaboration, shaping their own decision about how much they want to engage and commit. Given stated motives have been shown to have predictive power for various organizational outcomes (Rabier, 2017), we suggest they may also have predictive power with respect to post-acquisition collaboration. That prior research on acquisition and collaboration has so far neglected stated motives, suggests there may be untapped potential. Of course, if the motives have predictive power and affect how partners respond to an acquisition, they also have managerial implications as it highlights the need to be considerate about what is communicated when acquiring. Finally, given our overarching interest in the acquirers' strategy with respect to their acquisitions and collaborations—it appears almost mandatory to examine what the acquirers state themselves.

3 | SETTING AND DATA: OSS AND ACQUIRERS' MOTIVES

We study whether and what type of acquirers' motives affect the collaboration post-acquisition with a target's partners using a question-driven approach (Bennett & Chatterji, 2023; Graebner et al., 2022; Honoré & Ganco, 2020; Oxley et al., 2010; Sætre & Van de Ven, 2024). With respect to the research design, we build on the research design developed by Chen et al. (2022) who

¹For example, improvement of strategic position (Haleblian et al., 2009), market consolidation (Cunningham et al., 2021; Graebner et al., 2010; Santos & Eisenhardt, 2009), access to complementary resources (Graebner, 2004; Helfat & Eisenhardt, 2004; Lord & Ranft, 2000; Rabier, 2017). Research has also illustrated how acquisitions affect outcomes such as profitability (Haleblian et al., 2009; Haleblian & Finkelstein, 1999), innovation (Choi & Kim, 2022; Colombo & Rabbiosi, 2014; Desyllas & Hughes, 2010), or turnover (Kim, 2022, 2024; Krishnan et al., 2007).



examine the effect of acquisitions on the continuation of collaborations. By adopting this approach, we can build on an established design, allowing us to carve out and illustrate the role of acquirers' motives. Our study of motives complements their work as they neither develop theoretically nor examine empirically the role of acquirers' motives.

OSS projects are an appropriate setting to study collaboration as in these projects an *OSS-sponsoring firm* collaborates with *partners* on the development of OSS in a symbiotic and productive manner by dispatching their developers to contribute code or by letting them take over managerial and administrative tasks in the community (Conti et al., 2025; Dahlander & Magnusson, 2005; Dahlander & Piezunka, 2014; Dahlander & Wallin, 2006; He et al., 2020; Nagle, 2018; Shah & Nagle, 2020; Smirnova et al., 2022). Partners—in the context of OSS often referred to as the community—are typically people who volunteer in their free time to advance a project (e.g., because they are personally interested) or employees from other firms who are asked or allowed to contribute because their employer has a strategic interest in a particular OSS project.

3.1 | Data collection

For data on acquisitions as well as on acquiring and sponsoring firms, we rely on Crunchbase (Block et al., 2015; Contigiani, 2023; Hallen et al., 2023; Kovács & Sels, 2025; Ter Wal et al., 2016) (see Appendix A for details); for data on OSS activities, we rely on GitHub, the most widely used platform—by individuals and firms—for public OSS development (Burton et al., 2017; Conti et al., 2023, 2025; Haese & Peukert, 2025).

To identify *stated acquirer motives*, we rely on press releases from the acquirer—and, in some cases, from the target—announcing an acquisition. We complement these sources by reporting from newspapers (leveraging the Factiva database) and from various other media outlets such as TechCrunch, VentureBeat, GeekWire, or CNBC to arrive at a comprehensive appraisal of each acquisition.²

For our analysis of the effect of acquisitions and the role of acquirers' motives, we construct a treatment sample of OSS projects whose sponsoring firm was acquired and a sample of a matched control group of non-acquired OSS projects. For the treatment group, we started by identifying all firms that were acquired between 2012 and 2017 using Crunchbase.³ As we focus on acquisitions where the target has sponsored OSS projects, we used GitHub to determine such projects. We did so by identifying projects to which target employees of the above-identified acquisition targets contributed in the 12 months preceding the acquisition. To identify these employees, we matched the email domains of targets obtained from Crunchbase with the email domains of email addresses of GitHub users, an approach used by Nagle (2018) for the case of Linux.⁴ We excluded targets that do not allow us to clearly identify their employees.⁵ We

²We ensured to have at least three documents describing each acquisition and arrived at 450 documents overall.

³We collected GitHub data for 2011–2018 (the GitHub Archive is available as of 2011) and acquisition data for 2012–2017 in order to observe 1 year of OSS activity before and after each acquisition. For more information on sample selection, see Appendix H.

⁴Some GitHub users do not use their firm email address. To ensure correct labeling of those users, we use an algorithm that checks firm affiliation by matching names of GitHub users to LinkedIn profiles. We checked over 100,000 GitHub users working on projects in our sample and identified ~20,000 users working for a sponsoring firm on a project without using a firm email address.

⁵The reasons for being unable to clearly identify employees are as follows: We could not include email providers such as yahoo (acquired by Verizon in 2017) in our dataset, as most commits under the “yahoo.com” domain are from users of

restricted the sample to targets that sponsor independent projects—that is, projects that are not forked from a parent project—with at least five members from the target and five who are not. We required that the target's share of all contributions to a given project is above 5% and below 95%. We selected these requirements, which deviate from the less restrictive ones by Chen et al. (2022), because they ensured that the OSS community plays a relevant role in the project development as our focus is on acquisitions where the OSS collaboration was likely a central motive.⁶ Our final sample consists of 143 acquisitions.

For the control group, that is, OSS projects that are sponsored by non-acquired firms, we apply the same selection criteria as for the treatment group of projects with acquired sponsoring firms and exclude projects in which an acquisition target was active. We then use coarsened exact matching (CEM) to create samples from the treated and control groups that are similar with respect to the joint distribution of (potentially confounding) variables at the OSS project and target firm levels (Iacus et al., 2017). Like Chen et al. (2022), we use several pre-treatment firm and project characteristics for matching, measured respectively at the time of acquisition or averaged over the previous year; namely, the size and age of the focal firm at the time of the acquisition, its share of contributions to the project, the project's age and license, contributions activity, number of contributors, and the contributions activity growth trend of the project in the year before and after the acquisition. Using these coarsened variables, we find one or more matches for each treated project. Our matched control group comprises 2088 OSS projects associated with 695 non-acquired firms (see Appendix B). We use CEM weights to account for varying strata size (Blackwell et al., 2009). As a robustness check, we use alternative matching procedures that use propensity score matching (see Appendix C). We also conducted 52 interviews that guided our analysis and our interpretation of the findings (see Appendix D).

3.2 | Data analysis

We examine the continuation of the collaboration using a DiD approach (Bertrand et al., 2004; Colombo & Rabbiosi, 2014). We capture collaboration behavior by measuring the number of contributions to an OSS project by both—target employees and partners of the acquired target—before and after the acquisition. We measure contributions to the project as the number of code commits; that is, changes in the source code (Daniel et al., 2018).⁷ Our unit of analysis is the individual OSS project on GitHub sponsored by the target, defined by the repository

the yahoo email service, not employees. For a similar reason, we excluded acquisitions of online education facilities such as the Flatiron School (acquired by WeWork), as they often use GitHub as a host for their students' projects, as well as firms using a LinkedIn or Facebook page as their homepage or a government or a university domain on Crunchbase. We also excluded firms which used their parent organization's domain (prior owner in case of a carve-out or acquirer) on Crunchbase, as we cannot differentiate between those employees affected by an acquisition and those not.

⁶Chen et al. (2022) included all GitHub projects where a focal organization was the owner, regardless of activity and size. However, according to Kalliamvakou et al. (2016), more than two-thirds (71.6%) of GitHub projects have only one participant (its owner). By filtering, we ensure that the firm has invested considerable resources in a project and avoid selecting projects to which employees contribute as hobbyists outside of their work. Furthermore, we ensure that the projects were successful in attracting contributions from the community, which allows us to capture the effect of an acquisition on contributions from the acquired target as well as on those from the community.

⁷The operationalization of engagement and collaboration via contributions is in line with prior work in the realm of crowdsourcing, open innovation, and open source (Belenzon & Schankerman, 2015; Haese & Peukert, 2025; Klapper & Reitzig, 2018; Lerner et al., 2006; Nagle, 2018; Piezunka & Dahlander, 2015, 2019; Smirnova et al., 2022).



containing all project files. Our sample of 143 acquisitions includes 298 OSS projects sponsored by the target firms.

3.3 | Variables

3.3.1 | Dependent variable

The dependent variable *contributions to the collaboration* (Y_{it}) measures the extent to which the collaboration between the OSS-sponsoring firm and its partners continues by capturing the number of commits to OSS project i in month t . We measure the overall number of contributions to a project and separately the commits made by employees of the target firm and those made by its partners. We use logarithms, as those variables have a right-skewed distribution.

3.3.2 | Primary independent variable: Acquirers' motives

We examine if and how the motives stated by acquirers are associated with the continuation of the collaboration post-acquisition. Using a content analysis, we focus on the motives that directly address or could have implications for the collaboration with partners. In our categorization of the motives (for details, see Appendices E and F) we identified two overarching types of motives: *protection* and *extraction*.

Protection motives

Our data reveal that one important reason for corporations to acquire OSS-sponsoring firms is that they benefit from *complementarities* and strive to *protect* them. Specifically, acquirers want to protect the complementarities with the OSS itself (i.e., the outcome of the collaboration between the target and the partner) (*protecting complementarity with technology*) and with the collaborating partners (*protecting complementarity with partner community*). In both cases, the target's collaboration with partners is crucial to secure the prevalence of complementarities.

Our content analysis shows that in 36% of the cases (52 out of 143), acquirers strive to *protect the complementarity with technology*. Press releases stress the importance of the sponsored OSS projects; for example, “Engine Yard [the acquirer] is dedicated to supporting this critical open-source project and we welcome contributions and input from everyone. All of the OpDemand [the OSS-sponsoring target] employees will join the Engine Yard team and continue contributing to the open-source project.”

In 10% of cases the acquirer referenced the importance of *protecting the complementarity with the partner community* as a crucial motive for the acquisition. The value of the collaboration came up often in press releases and interviews: “Yeah, I think that one was kind of a selling point. ... [the target] had a decent community [of partners] around it.” The complementarity between the community and the acquirer is anchored in multiple roles that partners can play, not only as co-developers of the OSS, but also as testers, customers, and advertisers of the acquirer's products. The acquisition of Gitter by GitLab exemplifies the complementary value of partners. Gitter, an OSS-sponsoring firm developing a chat and networking tool, was supported by many partners. By integrating Gitter's functionality with its own platform, GitLab made it easier for Gitter's partners to use GitLab products.

Extraction motives

The content analysis also reveals a different type of motive: corporations often acquire an OSS-sponsoring firm to *extract* its OSS-related resources; namely, its code (*extracting technology*) or the developers (*extracting employees*). These motives relate to the collaboration as they affect a central resource of the collaboration (i.e., the technology) and one side of the partnership (i.e., the target's employees).

Our content analysis reveals that in 21% of the acquisitions surveyed (31 out of 143), the stated motive is to *extract technology*, in particular parts of the acquirer's own software with code from the OSS project sponsored by the target. For example, a press release states, "Socrata [the target] provides a much stronger [version of the acquirer's software]. We expect that that would be replaced or powered by Socrata going forward." *Extracting technology* requires redeploying not only the code but also the target's employees who are familiar with it. If the acquirer does so, the OSS project misses out on the crucial contributions and knowledge of these employees. In brief, the acquirer *extracts* the target's OSS code, reallocates the target's developers to other internal tasks, and abandons the public OSS project.

Our content analysis shows that in 14% of the press releases (20 out of 143 acquisitions), *extracting* the target's *employees* was named as a key factor. For example, one news article covering an acquisition reflects the importance of the programmers and top management team: "The tipsters further claim that the transaction was an acquihire, which would seem to indicate that Google [the acquirer] wasn't particularly interested in the startup's flagship mobile development toolkit." As this quote highlights, acquirers intending to redeploy employees often show little interest in the OSS projects themselves, in contrast to acquirers driven by protection motives.

In sum, the analysis reveals the following collaboration-related motives: *protecting complementarity with technology* and *partner community* as well as *extracting technology* and *employees*. Based on the categorization, we use binary variables for each motive in the regressions, where 1 indicates the presence of the motive in the relevant acquisition.

3.3.3 | Additional independent, contingency, and control variables

We use two variables for our DiD approach. The variable d_i^{Treat} indicates whether the OSS project's sponsoring firm was acquired during the study period and takes the value of 1 if the project belongs to the treatment group and 0 if not. The second variable, d_{it}^{Post} , takes the value of 1 for months after the acquisition for projects in the treatment group and 0 for months before the acquisition. For the control group, consistent with Chen et al. (2022), d_{it}^{Post} is set to 0 for all months since these projects were never acquired (Goodman-Bacon, 2021). Their interaction—the DiD term—captures the effect of the acquisition; namely, the change in contributions in the treatment group compared with that in the control group.

We also collected data on key contingencies identified in OSS and acquisition research. We measure the *OSS project license*, as it captures how the code can be redeployed (Capron et al., 1998; He et al., 2020; Sakhartov & Folta, 2014). License type is coded 1 if it is permissive, allowing unrestricted code redeployment, or 0 if it is copyleft, which restricts re-use of the code in proprietary software.⁸ Next, we determine *structural integration*, which represents how the

⁸Code under a copyleft license cannot be turned into proprietary code and any "derivative work"—code based on or merged with the copylefted code—must itself be under the copyleft license. This restriction makes it impossible to keep the source code of derivative work secret and to license the software on a per-unit basis.

acquirer uses the target's resources. Structural integration affects post-acquisition performance; in particular, that of the acquired (target) firm (Du & Tsolmon, 2026; Paruchuri et al., 2006; Puranam et al., 2006; Puranam & Srikanth, 2007). Using data from press releases, newspapers and media outlets, we code this variable 1 if the target was structurally integrated into the acquirer's organization. If the sources refer to the (continued) organizational independence of the target, we code the acquisition as structural separation. If the sources highlight the process of combining or integrating, we code it as integration.⁹

We control for several potentially confounding factors. We account for time-varying aspects of the OSS projects. In line with prior work (Chen et al., 2022), we control for the age of the target firm (*target age*) and of the OSS project (*OSS project age*). Due to the skewed distribution of these variables, we apply a natural logarithm transformation. We determine the *number of contributors* to each project per month, and the number of OSS projects sponsored by the target firm (*number of OSS projects*). We account for the sponsoring firm's share of all contributors and its share of all contributions to a project in a month (*share of contributions by target contributors* and *share of contributors from target*, respectively) and for the overall number of contributions to a project (*contributions [cumulative]*).¹⁰

3.4 | Specification

The following equation specifies how we estimate *contributions to the collaboration* (Y_{it}) with a DiD approach. Because the treatment variable is collinear with the fixed effect, the equation amounts to:

$$Y_{it} = \beta_0 + \beta_1 \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_2 \times \mathbf{X}_{it} + \alpha_i + \gamma_t + u_{it}.$$

Note that bold print indicates vectors. The coefficient β_1 shows the effect of the DiD term, $d_i^{\text{Treat}} \times d_{it}^{\text{Post}}$. We estimate our models with control variables ($\mathbf{X}_{it}$), OSS project-level (α_i) and month-level (γ_t) fixed effects. To test the influence of acquirers' motives, we add a binary variable for each motive and multiply it by the interaction term:

$$Y_{it} = \beta_0 + \beta_1 \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_2 \times \mathbf{Motives}_i \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_3 \times \mathbf{X}_{it} + \alpha_i + \gamma_t + u_{it}.$$

We estimate clustered standard errors and cluster on the OSS project level using the Stata package `reghdfe` (Correia, 2014).

3.5 | Interviews

To gain a better understanding of the empirical context we conducted 52 qualitative interviews with professionals in the OSS space. Beyond gaining a better understanding, these

⁹We also examine the target's website to verify whether the target was indeed integrated. If the target's website links to the acquirer's website or was shut down, this suggests that the target was structurally integrated.

¹⁰We also collected information on the acquirer's *OSS experience* as an indicator of its activity in and knowledge of the target's domain (Chen et al., 2022; Halebian & Finkelstein, 1999). We operationalize it as a binary variable, measuring the acquirer's contribution activity on public GitHub repositories in the year pre-acquisition relative to its size, measured by the number of employees. All firms with a score of 1 or higher are categorized as having OSS experience.

interviews also helped us with respect to the operationalization of our variables and the interpretation of our results. The interviews were conducted by one of the co-authors in English or German. For an overview of the interviews, please see Table D1 in Appendix.

4 | RESULTS

4.1 | Descriptive statistics

Table 1 provides the descriptive statistics of the OSS projects sponsored by the targets. Table 2 reports the DiD regressions for *contributions to the collaboration*: overall contributions, those from the employees of the acquired target, and those from target partners.

4.2 | Baseline analysis

Without including the acquirers' motives the baseline results show that the coefficient of the interaction term, *treated* $\times$ *post-acquisition*, is -0.339 ("Overall" model, $p < .001$). This indicates that *contributions* to OSS projects are on average significantly lower by 28% post-acquisition compared with the control group. This finding underscores the outlined puzzle: collaborations that have been shown to be a reason for acquisitions tend to diminish. The reduction in *contributions* is driven by both employees of the acquired target, with a coefficient of -0.415 ($p < .001$) and target partners, with a coefficient of -0.135 ($p = .007$). An explanation for the stronger relative decrease in *contributions* by employees than partners ($p = .007$) is that employees are directly affected and disrupted by the acquisition, whereas target partners have more freedom to (not) change their *contributions* (Chung et al., 2025). Next, we investigate how these post-acquisition *contributions to the collaboration* are affected by the acquirers' motives.

4.3 | Main analysis: Motives and post-acquisition collaboration behavior

We now turn to our main analysis: the link between motives and contributions. Table 3 shows how *protection* and *extraction* motives are related to a change in *contributions to the collaboration* post-acquisition. In studying the motives associated with *protection*, we find that the motive of *protecting complementarity with technology* is associated with an increase in *contributions* to the collaboration, supporting our expectation that target partners continue to collaborate when acquirers strive to protect OSS projects. Projects involved in such acquisitions receive relatively more *contributions* post-acquisition ($\beta_{\text{overall}} = .539$, $p < .001$; $\beta_{\text{partners}} = .363$, $p < .001$; $\beta_{\text{employees}} = .432$, $p < .001$) than comparable acquired projects. For the motive of *protecting complementarity with partner community*, we again find the expected positive sign—though with much lower significance ($\beta_{\text{overall}} = .116$, $p = .398$; $\beta_{\text{partners}} = .172$, $p = .185$; $\beta_{\text{employees}} = .043$, $p = .713$)—supporting the notion of *protecting* OSS projects. In both cases, the responses by target employees and partners are similar (see Section 4.4.2. for more details).

In studying the motives associated with *extraction*, we find that the motive of *extracting technology* is associated with a significant decrease in *contributions* by target employees ($\beta_{\text{employees}} = -.200$, $p = .040$) but an increase, though insignificant, of those by target partners

TABLE 1 Descriptive statistics and correlation coefficients.

Project-month (N = 54,878)		Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	Overall contributions	2.183	1.692	0	7.547	1											
(2)	Contributions by target employees	1.788	1.62	0	7.337	0.91	1										
(3)	Contributions by target partners	1.177	1.37	0	7.107	0.75	0.5	1									
(4)	Permissive license	0.898	0.302	0	1	-0.03	-0.02	-0.01	1								
(5)	Integration	0.777	0.416	0	1	0	0.01	-0.02	0.08	1							
(6)	OSS experience	0.522	0.5	0	1	0	0.01	-0.01	0.07	0.47	1						
(7)	Contributions (cum.)	671.002	133	0	30,374	0.3	0.28	0.31	-0.06	0	-0.02	1					
(8)	Number of contributors	3.563	4.496	0	113	0.71	0.63	0.69	-0.04	-0.02	-0.02	0.36	1				
(9)	Target age (log)	4.453	0.767	2.773	7.653	-0.01	-0.05	0.03	-0.18	-0.37	-0.51	0.03	0.04	1			
(10)	OSS Project age (log)	3.063	0.815	0	4.883	0.05	0.04	0.04	0.02	0.06	0.09	0.32	0.06	0.04	1		
(11)	Number of OSS projects by target	4.147	5.09	1	40	0.08	0.09	0.05	0.08	0.08	0.19	0	0.12	-0.19	0.04	1	
(12)	Share of contributions by target contributors	0.495	0.415	0	1	0.56	0.74	0	-0.02	0.01	0.02	0.06	0.27	-0.06	0.06	0.09	1
(13)	Share of contributors from target	0.447	0.381	0	1	0.5	0.63	-0.03	-0.03	0.01	0.02	0.04	0.2	-0.06	0.06	0.08	0.93
Acquisitions (N = 143)		Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	Protecting technological complementarity	0.366	0.484	0	1	1											
(2)	Protecting partner community	0.098	0.298	0	1	0.03	1										
(3)	Extracting technology	0.211	0.41	0	1	0	0.17	1									
(4)	Extracting employees	0.138	0.347	0	1	0	0.03	0.08	1								
(5)	Permissive license	0.849	0.341	0	1	0	-0.12	0.1	0.16	1							
(6)	Integration	0.686	0.466	0	1	0.14	0.05	0.18	0.22	0.05	1						
(7)	OSS experience	0.327	0.471	0	1	0.08	0.18	0.46	0.29	0.07	0.34	1					

Abbreviation: OSS, open-source software.

TABLE 2 Baseline analysis: Contributions to the collaboration (open-source software [OSS] project) without motives—pre- and post-acquisition.

Contributions by:	Overall	Employees of acquired target	Target partners
Treated × post-acquisition	−0.339 (0.055) [.000]	−0.415 (0.048) [.000]	−0.135 (0.050) [.007]
Contributions (cum.), lagged	0.000 (0.000) [.549]	0.000 (0.000) [.621]	0.000 (0.000) [.924]
Number of contributors, lagged	0.127 (0.016) [.000]	0.092 (0.012) [.000]	0.113 (0.014) [.000]
Acquired target firm age (log)	−0.543 (0.253) [.032]	−0.282 (0.205) [.168]	−0.392 (0.223) [.079]
OSS project age (log)	0.556 (0.078) [.000]	0.419 (0.065) [.000]	0.368 (0.068) [.000]
Number of OSS projects by target	0.016 (0.011) [.130]	0.015 (0.009) [.104]	0.011 (0.010) [.246]
Share of contributions by target contributors, lagged	0.509 (0.116) [.000]	1.180 (0.106) [.000]	−0.423 (0.109) [.000]
Share of contributors from target, lagged	0.250 (0.101) [.014]	−0.255 (0.094) [.007]	0.477 (0.096) [.000]
Constant	2.231 (1.204) [.064]	1.001 (0.960) [.297]	1.615 (1.062) [.128]
OSS project fixed effects	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
R-squared overall	0.630	0.612	0.600
R-squared within	0.248	0.230	0.163
Observations	54,878	54,878	54,878

Note: Clustered standard errors are in parentheses; *p*-values are in brackets.

($\beta_{\text{partners}} = .083$, $p = .383$). These findings are consistent with the acquirer's lack of interest in the openness of the projects and its focus on reusing the code internally. The target partners, on the other hand, are still interested in maintaining the open-source version. The motive of



TABLE 3 Main analysis: Contributions to the collaboration (open-source software [OSS] project), contingent on motives.

Contributions by	Overall	Employees of acquired target	Target partners
Treated × post-acquisition (DiD)	−0.456 (0.077) [.000]	−0.480 (0.067) [.000]	−0.266 (0.070) [.000]
Protection motives			
DiD × protecting technological complementarity	0.539 (0.109) [.000]	0.432 (0.097) [.000]	0.363 (0.099) [.000]
DiD × protecting partner community	0.116 (0.138) [.398]	0.043 (0.117) [.713]	0.172 (0.130) [.185]
Extraction motives			
DiD × extracting technology	−0.118 (0.111) [.290]	−0.200 (0.097) [.040]	0.083 (0.096) [.383]
DiD × extracting employees	−0.284 (0.153) [.064]	−0.169 (0.127) [.186]	−0.258 (0.140) [.065]
Constant	2.033 (1.214) [.094]	0.492 (0.964) [.610]	2.145 (1.109) [.053]
OSS project (time-variant) controls	Yes	Yes	Yes
OSS project fixed effects	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes
R-squared overall	0.634	0.614	0.603
R-squared within	0.255	0.236	0.168
Observations	54,878	54,878	54,878

Note: Clustered standard errors are in parentheses; *p*-values are in brackets. Coefficient estimates for key variables in bold. Abbreviation: DiD, difference-in-differences.

extracting employees is related to decreases in post-acquisition collaboration, but the effects are statistically only weakly supported ($\beta_{\text{overall}} = -.284$, $p = .064$; $\beta_{\text{partners}} = -.258$, $p = .065$; $\beta_{\text{employees}} = -.169$, $p = .186$).¹¹

In summary, *contributions to the collaboration* in acquisitions motivated by *protecting complementarity with technology* and *complementarity with partner community* intensify, whereas

¹¹Chen et al. (2022) find an increase in contributions to the acquirer's projects, supporting a resource extraction and redeployment logic.

the motives of *extracting technology* and *employees* are associated with diminishing *contributions*.

4.4 | Contingencies

We expect the link between motives and contributions to be more contingent on other features of the acquisition. We use split samples to analyze this. As a robustness check, we run the same analysis with a triple interaction (see Appendix G).

4.4.1 | Extracting technology motive and project license

If the acquirer is motivated by extracting the technology, the acquirer's ability to extract—and thus the link with future contributions—depends on the license which co-determines the degree to which the acquirer can extract. Extracting implies that the acquirer strives to *redeploy* the technology. An OSS project's *license* determines whether the code can be easily redeployed (permissive) or not (restrictive). While redeploying the target's OSS code is possible with restrictive (copyleft) licenses, it typically requires rewriting the code as proprietary—making redeploying the target's developers even more crucial. Thus, a restrictive license would limit the degree to which *contributions to the collaboration* diminish, as the acquirer could not fully redeploy the technology. An interviewee explained the advantages of a permissive license when the goal is to redeploy the target's OSS code and continue its development internally: “Insofar as when an MIT licensed project [permissive license] is acquired. The possibility of a closed source fork arises. [...] Closed source fork means that the new owner continues the project closed source and will leave it as it is online.”

Indeed, we find that the previously shown negative association between *the extracting technology* motive and post-acquisition *contributions* (Table 3) is driven by OSS projects with a *permissive license* (see Table 4). While target partners do not significantly change their *contributions* post-acquisition ($\beta_{\text{partners}} = -.013$, $p = .959$ with *restrictive license* vs. $\beta_{\text{partners}} = .075$, $p = .482$ with *permissive license*) (given an *extracting technology* motive), target employees reduce their *contributions* more when the license is *permissive* ($\beta_{\text{employees}} = -.236$, $p = .021$) than when it is *restrictive* ($\beta_{\text{employees}} = .332$, $p = .257$).¹² This suggests that the acquiring corporation is only interested in supporting the sponsored OSS projects and collaborating with the partner community if the code *cannot* be easily re-used. Thus, an OSS project's license can be a simple but powerful tool not only to restrict unwanted re-use but also to limit any post-acquisition increase in uncertainty and reduction in collaboration.

4.4.2 | Protecting complementarity with partner community motive and structural integration

Our analysis established that acquirers who are motivated by *complementarity with partner community* seek the continuation of the collaboration. But that collaboration must not be taken for granted. Partners may have been willing to collaborate with the target but may be concerned

¹²Partners' contributions are not significantly moderated by the license.



TABLE 4 Contributions to a collaboration project (difference-in-differences [DiD]), contingent on motives (sample split by project license).

Contributions by	Employees of acquired target		Target partners	
	Permissive license	Restrictive license	Permissive license	Restrictive license
Treated × post-acquisition (DiD)	−0.468 (0.069) [.000]	−0.561 (0.194) [.004]	−0.279 (0.078) [.000]	−0.243 (0.166) [.143]
Protection motives				
DiD × protecting technological complementarity	0.434 (0.116) [.000]	0.324 (0.219) [.140]	0.322 (0.119) [.007]	0.551 (0.223) [.014]
DiD × protecting partner community	−0.096 (0.130) [.462]	0.489 (0.253) [.055]	0.207 (0.149) [.166]	0.201 (0.284) [.480]
Extraction motives				
DiD × extracting technology	−0.236 (0.102) [.021]	0.332 (0.292) [.257]	0.075 (0.107) [.482]	−0.013 (0.256) [.959]
DiD × extracting employees	−0.030 (0.121) [.803]	−1.869 (0.377) [.000]	−0.198 (0.138) [.152]	−2.437 (0.285) [.000]
Constant	0.639 (1.032) [.536]	2.706 (4.275) [.527]	1.516 (1.229) [.218]	6.797 (3.340) [.043]
OSS project (time-variant) controls	Yes	Yes	Yes	Yes
OSS project fixed effects	Yes	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes	Yes
R-squared overall	0.605	0.646	0.605	0.610
R-squared within	0.174	0.244	0.174	0.178
Observations	48,967	5543	48,967	5543

Note: Clustered standard errors are in parentheses; *p*-values are in brackets. Coefficient estimates for key variables in bold. Abbreviation: OSS, open-source software.

if and how that collaboration may change post-acquisition (Bingham et al., 2024). We suggest that whether the acquirer *structurally integrates* the target plays an important role. Structural integration would result in a disruption of the collaboration; if the target is not integrated the collaboration is likely to proceed as it did, but structural integration should affect it—and may thus concern partners who are likely to become skeptical of the collaboration and may disengage. Our analysis supports this. While, in general, the motive *protecting complementarity with partner community* is not associated with a significant increase in *contributions to the collaboration* (Table 3), the picture changes once *structural integration* is taken into account (Table 5).

TABLE 5 Contributions to a collaboration project (difference-in-differences [DiD]), contingent on motives (sample split by structural integration).

Contributions by	Employees of acquired target		Target partners	
	Structural integration	No structural integration	Structural integration	No structural integration
Treated × post-acquisition (DiD)	−0.564 (0.095) [.000]	−0.394 (0.102) [.000]	−0.422 (0.085) [.000]	−0.119 (0.128) [.352]
Protection motives				
DiD × protecting technological complementarity	0.438 (0.115) [.000]	0.488 (0.214) [.023]	0.424 (0.105) [.000]	0.323 (0.233) [.165]
DiD × protecting partner community	0.085 (0.125) [.499]	−0.059 (0.332) [.860]	0.033 (0.128) [.796]	0.798 (0.279) [.004]
Extraction motives				
DiD × extracting technology	−0.205 (0.111) [.064]	−0.092 (0.254) [.718]	0.252 (0.106) [.017]	−0.131 (0.198) [.507]
DiD × extracting employees	−0.130 (0.136) [.336]	−0.177 (0.198) [.373]	−0.119 (0.145) [.413]	−0.296 (0.193) [.125]
Constant	0.280 (1.090) [.797]	7.205 (5.612) [.200]	2.493 (1.160) [.032]	3.931 (7.122) [.581]
OSS project (time-variant) controls	Yes	Yes	Yes	Yes
OSS project fixed effects	Yes	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes	Yes
R-squared overall	0.620	0.615	0.617	0.584
R-squared within	0.251	0.207	0.201	0.123
Observations	42,527	12,213	42,527	12,213

Note: Clustered standard errors are in parentheses; *p*-values are in brackets. Coefficient estimates for key variables in bold. Abbreviation: OSS, open-source software.

We find a clear positive coefficient for *contributions* by partners if the target is structurally separated ($\beta_{\text{partners}} = .798$, $p = .004$), but not if the target is integrated ($\beta_{\text{partners}} = .033$, $p = .796$). Target employees do not appear to change their *contributions* either way ($\beta_{\text{employees}} = -.059$, $p = .860$ vs. $\beta_{\text{employees}} = .085$, $p = .499$). The results support the idea that while the partner community is crucial for the collaboration, their contributions cannot be taken for granted.



5 | DISCUSSION

We examined the role of motives for the collaboration between the target and its partners post-acquisition. Our theory and findings inform three literatures.

5.1 | On acquisitions: Motives and the following trajectories

We contribute to research on *acquisitions* by examining acquirers' motives and their linkage to collaboration post-acquisition. We illustrate two kinds of acquisitions: protection- and extraction-motivated acquisitions. This finding helps to resolve the puzzle that targets' collaborations are a reason for corporations to acquire a target despite often diminishing post-acquisition (Hernandez & Menon, 2018; Hernandez & Shaver, 2019; Rogan & Greve, 2015; Rogan & Sorenson, 2014). Part of the observed diminishment is driven by extraction-motivated acquisitions. In these cases, the acquirer is not actually interested in maintaining the collaboration. Note that the collaborations can still play an important role in the decision to engage in an extraction-motivated acquisition: such collaborations may, for example, be an indicator of certain resources that the acquirer is eager to absorb.

The differentiation between protection- and extraction-motivated acquisitions may also help to explain why the consequences associated with acquisitions can vary drastically across stakeholders (Piezunka & Grohsjean, 2023). While in the case of protection-motivated acquisitions the consequences seem to be rather aligned across stakeholders, consequences may vary widely in the case of extraction-motivated acquisitions: the acquirer may benefit due to the gained access to the technology and the employees. By contrast, other stakeholders contributing and relying on the jointly developed project may suffer severely.

By studying collaboration behavior post-acquisition, we also contribute to research on consequences of acquisition (Bettinazzi & Zollo, 2017; Feldman & Hernandez, 2022; Graebner, 2004). Most research in this realm focuses on the consequences for acquirers and target employees (Haleblian et al., 2009; Haleblian & Finkelstein, 1999; Kim, 2022, 2024; Krishnan et al., 2007). We contribute to the emergent stream that examines the broader consequences of acquisition (Berchicci et al., 2017; Gupta et al., 2024). For example, Gupta et al. (2024) show that the acquisitions of nursing homes negatively affect patient well-being; Berchicci et al. (2017) illustrate the positive effect of acquisitions on the environment; and Tandon et al. (2023) find that the existing alliance relationships of the target often suffer. We show that acquisitions also affect the target's collaborations, and thus the collaboration partners. We also illustrate that acquisitions affect the jointly developed output—in our case a public OSS—which may affect all actors relying on that output substantially.

Our study also highlights a neglected consequence of structural integration. While research has examined the performance implication of structural integration (Paruchuri et al., 2006; Puranam et al., 2006; Puranam & Srikanth, 2007), we illustrate that it affects acquirers' ability to maintain the sought-after collaboration between the target and its partners. Acquirers engaging in protection-motivated acquisitions are more successful in maintaining the collaboration with partners if they do *not* integrate the target.

5.2 | On collaborations: The role of acquisitions

We contribute to work at the intersection of collaboration and acquisition. Prior work has illustrated that collaborations are a factor that motivates corporations to acquire specific targets (Hernandez & Menon, 2018; Hernandez & Shaver, 2019). We illustrate that acquisitions also affect collaborations. By doing so, we contribute to research on collaboration dynamics (Ahuja et al., 2012; Levinthal & Fichman, 1988; Sytch & Tatarynowicz, 2014; Thatchenkery & Piezunka, 2025; Zhelyazkov & Gulati, 2016). Research in this realm illustrates that the evolution of interfirm collaborations depends upon factors such as embeddedness (Gulati & Gargiulo, 1999; Sytch & Tatarynowicz, 2014), formal and relational control (Elfenbein & Lerner, 2003; Hallen et al., 2014; Zollo et al., 2002), aligned expectations (Thatchenkery & Piezunka, 2025), and interpersonal linkages (Broschak, 2004; Rogan, 2014). We complement work in this realm by showing that the acquisition of one of the partners, and specifically the motives of the acquirer, can have an enormous influence on the collaboration.

We highlighted the puzzle that collaborations—despite being a reason for acquisitions—often diminish. Our results, however, also illustrate that collaborations can be preserved, and that external partners may even intensify their contributions to a collaboration post-acquisition. This may be surprising as one may expect that the takeover of a partner calls into question the initial agreement to collaborate and disrupt built-up routines. Our findings on protection-motivated acquisitions show, however, that such collaboration can be preserved and thrive despite an acquisition. Acquirers with the right set of motives, who also take the right set of actions (e.g., do not structurally integrate the target), can succeed in maintaining and even intensifying the collaboration.

5.3 | On open-source: The role of collaborations

Corporations do not solely use OSS but engage in its development (Dahlander & Magnusson, 2005; Henkel, 2006; Lerner & Tirole, 2002; von Krogh et al., 2012). It has been a source of controversy whether corporate engagement *helps* or *hinders* OSS (Safadi et al., 2025; Spaeth et al., 2015; Stewart et al., 2006; Zheng & Wang, 2025). Our study enriches this debate by showing that either may be true. Our analysis of acquisitions of OSS-sponsoring firms shows that corporate engagement may diminish OSS projects and potentially endanger their survival, but may also nurture them by increasing contributions. One must therefore assess corporate engagement in OSS development on a case-by-case basis. Notably, the motives of the very same corporation may differ across acquisitions. For example, we found that Google approached the acquisition of Appurify with a protection motive—to support the technological complementarity—but approached the acquisition of Apportable with an extraction motive—to redeploy its employees.

Our study also highlights an interesting and counterintuitive aspect about OSS. One may generally assume that OSS—a software that is freely available to anyone—reduces corporations' dependencies, in particular when compared to dependence on commercial suppliers. In their attempt to reduce dependencies (Casciaro & Piskorski, 2016; Pfeffer & Salancik, 1978), one may thus expect that corporations embrace OSS as it reduces their dependence. Our study, however, reveals that OSS gives rise to new dependencies. Corporations benefit from and thus depend on complementarities with OSS. However, these complementarities are fragile as the direction of development of the OSS is unclear and not contractually controllable for a corporation



(Agarwal & Kapoor, 2022). Corporations, trying to reduce the dependence on the OSS community, thus need to engage in the development of OSS and collaborate with the OSS community. The necessity to engage, however, creates an additional resource dependence: employees who are able to contribute to and to shape OSS projects. The recruiting of such employees is a key challenge in the OSS context as indicated by the commonality of extracting acquisitions where the corporation is focused on “acqui-hiring” employees (Boyacıoğlu et al., 2023; Kim, 2022; Ng & Stuart, 2021). OSS may thus replace some dependencies but also gives rise to new ones.

5.4 | Managerial implications

Our study has implications for organizations relying on an OSS. For good reason, they may expect a firm's sponsorship of an OSS to increase the OSS's stability and reliability. Our research, however, suggests that it can also be a source of instability and change because corporations that seek to increase their control over the OSS may acquire the sponsoring firm and then change the direction of the OSS development or stop supporting it. Firms relying on sponsored OSS thus must assess the chances of the sponsoring firm being acquired and the motives of the acquirer. When assessing these risks, organizations are well-advised to also consider moderating factors such as the permissiveness of licenses as these affect the chances of acquisition and the change in trajectory following an acquisition.

5.5 | Limitations, boundary conditions, and future research

Although our multi-method, multi-dataset approach helps reduce limitations, several remain. Our coding of motives depends either on the self-reported motives of corporations—that is, on their press releases or on third-party observations—that is, on news articles. These stated motives may not fully reflect the actual motives of acquirers.¹³

We cannot make claims about causality, as motives are endogenous and cannot be matched; that is, we cannot determine the motives of acquisitions that did not happen. While we take various actions to establish a clear linkage (e.g., the panel structure of our data, controlling for potential confounders through matching, and the qualitative evidence we collected support a causal interpretation), our findings do not establish a causal link between certain motives and changes in collaboration.

A key feature, and strength of our manuscript, is that we examine collaborations where the collaborating partners are external partners who self-select into contributing. Such collaborations of corporations and voluntary contributors are prominent in open science (Bagherzadeh et al., 2023; Franzoni & Sauermann, 2014), crowdsourcing (Jeppesen & Frederiksen, 2006), the gig economy (Cameron & Rahman, 2022; Chung et al., 2024, 2025; Petriglieri et al., 2019; Wang et al., 2024), and OSS (Lakhani & Wolf, 2005; Shah, 2006). We suggest that future work explore whether our findings hold beyond the realm of open source. Consider, for example, the case of

¹³It is possible that press releases overreport positively connotated motives, such as those related to protection, and underreport negatively connotated motives, such as redeploying OSS-related resources. This could result in biased DiD estimations. In particular, in the case of protection motives, we would *underestimate* the true effect since we might be counting cases that report that motive but are not actually motivated by it. In the case of extraction motives, firms' potential underreporting might result in missing relevant cases. This would lead to inflated confidence intervals, as there are fewer cases with which to estimate the coefficients. In both cases, our tests likely yield conservative estimates.

Uber acquiring another ride-sharing company. It is crucial for them to understand to what degree drivers who perform in collaboration with the target will continue to engage.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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APPENDIX A: DATA SOURCES

A.1 | Factiva

Factiva is a global news and business information platform that provides access to a wide range of news, company, and industry information from thousands of sources around the world, including newspapers, magazines, trade journals, and newswires. It is one of the primary sources for news articles in management journals (Haleblian et al., 2017; Lee & James, 2007; Uotila et al., 2009).

A.2 | Crunchbase

Crunchbase is a curated crowdsourced company database that covers company information, such as company size, location, founding date, acquisitions, and the industries a company is active in. The database is widely used in the industry and has recently also become more prominent among researchers (Block et al., 2015; Ter Wal et al., 2016). In June 2019, the database contained 715,410 companies and 91,426 acquisitions in total.

A.3 | GitHub

GitHub is popular among the members of the OSS community, students, and hobbyists (Burton et al., 2017), allowing developers to host and publish their OSS projects and contribute to the OSS projects of other users. GitHub hosts over 100 million software projects (so-called repositories) and is the world's largest OSS development platform. Every user on GitHub can download, use, and modify source code in public OSS projects and offer the modifications back to the projects if wanted. It is also used by many software companies, including Google, Microsoft, Red Hat, Facebook, Uber, Intel, IBM, and Alibaba, and many prominent OSS projects such as Node.js and Ruby on Rails are developed on the GitHub platform. Given the richness and open nature of the data available, GitHub provides a rich empirical setting for management research, allowing observability of the development of projects and OSS work of individuals and companies on a very granular level over time. Particularly, the considerable prominence of GitHub among firms makes this data source well suited for research on firms and their engagement in OSS development (e.g., He et al., 2020; Nagle, 2018).

The primary source is the GHTorrent project (<http://gh torrent.org/>). The GHTorrent project is a scalable, queryable, offline mirror of data publicly available on GitHub (Gousios, 2013). It contains information about each public code commit, user, and project. It is a frequently used data source in computer science research. These data are complemented with data from the GHArchive (<https://www.gharchive.org/>) and data obtained directly from the GitHub application programming interface (API) (<https://developer.github.com/>). GHArchive data are used to obtain email domains used by GitHub users when committing code on GitHub, while GitHub API provides license information about the projects (i.e., repositories) hosted on GitHub. All three datasets can be matched, as each commit on GitHub has a unique identifier ("sha") included in GHTorrent and GHArchive, and each project has a unique URL, which can be found on GHTorrent and in the GitHub API.

APPENDIX B: CEM MATCHING

We use a coarsened exact matching (CEM). A big difference to propensity score matching (PSM) is that CEM does not calculate a "propensity" but, depending on the values of selected criteria variables (Table B1), it puts observations into groups that have the same value range for



TABLE B1 Matching variables for coarsened exact matching algorithm.

Level	Variable
Firm/acquisition-level	Firm age
	No. employees
	Acquisition time
Project-level	No. contributors (before and after acquisition)
	No. contributions (before and after acquisition)
	Contribution trend
	Project age
	Share of target employee contributors
	Project license

TABLE B2 Comparison of samples on project level (with coarsened exact matching weights).

Variable	Control (mean)	Treatment (mean)	Difference	p Value
Contributions by external partners	1.505	1.354	0.151	0.233
Contributions by target employees	1.763	1.661	0.103	0.414
Combined contributions	2.335	2.153	0.182	0.189
Integrated	0.677	0.666	0.011	0.765
OSS experience	0.384	0.349	0.035	0.356
Permissive license	0.823	0.769	0.054	0.102

Abbreviation: OSS, open-source software.

the selected variables. CEM can either automatically determine the “cut points” to put observations into different strata (“brackets”) or users can manually define them. The matching algorithm creates weights for observations if the strata they belong to do not have the same amount of treatment and control cases.

Comparing the means of the matched variables for treatment and control groups shows that the control and treatment sample are very similar (see Table B2). There are no substantive differences between the two groups.

APPENDIX C: ALTERNATIVE MATCHING

In addition to the main CEM, we use two PSM as robustness checks. Propensity matching is based on determining a propensity score for each observation. Scores are estimated based on their relationship between the matching variables and membership to the treatment and control group. Specifically, we run a logistic regression to estimate the propensity to belong to the treatment group based on the matching variables, which are the same as the ones selected for CEM. We also use a variant of PSM, caliper-based matching to limit the maximum difference between the propensity scores of matched observations (i.e., caliper width).

Overall, the regression results (Table C1) support our main findings, suggesting the same results as the CEM matching.

TABLE C1 Contributions to a project (difference-in-differences [DiD]) conditional on motives, alternative matching.

	Baseline CEM			Caliper-based PSM			PSM		
	Combined employees	Target employees	External partners	Combined employees	Target employees	External partners	Combined employees	Target employees	External partners
Post-acquisition × treated (DiD)	-0.456 (0.077) [.000]	-0.480 (0.067) [.000]	-0.266 (0.070) [.000]	-0.308 (0.060) [.000]	-0.237 (0.052) [.000]	-0.205 (0.056) [.000]	-0.377 (0.061) [.000]	-0.348 (0.063) [.000]	-0.328 (0.066) [.000]
Protection motives									
DiD × complementarity	0.539 (0.109) [.000]	0.432 (0.097) [.000]	0.363 (0.099) [.000]	0.347 (0.103) [.001]	0.265 (0.093) [.004]	0.196 (0.099) [.049]	0.300 (0.090) [.001]	0.273 (0.097) [.005]	0.168 (0.101) [.097]
DiD × OSS community	0.116 (0.138) [.398]	0.043 (0.117) [.713]	0.172 (0.130) [.185]	0.066 (0.120) [.585]	-0.000 (0.113) [.997]	0.133 (0.114) [.243]	0.156 (0.118) [.187]	0.080 (0.130) [.538]	0.272 (0.123) [.027]
Extraction motives									
DiD × extracting technology	-0.118 (0.111) [.290]	-0.200 (0.097) [.040]	0.083 (0.096) [.383]	-0.081 (0.102) [.432]	-0.188 (0.092) [.041]	0.126 (0.090) [.160]	-0.328 (0.106) [.002]	-0.396 (0.113) [.000]	-0.114 (0.096) [.234]
DiD × extracting employees	-0.284 (0.153) [.064]	-0.169 (0.127) [.186]	-0.258 (0.140) [.065]	-0.270 (0.123) [.028]	-0.219 (0.109) [.044]	-0.204 (0.111) [.067]	-0.249 (0.163) [.127]	-0.199 (0.172) [.246]	-0.302 (0.153) [.048]
Constant	2.033 (1.214) [.094]	0.492 (0.964) [.610]	2.145 (1.109) [.053]	1.822 (0.952) [.056]	0.695 (0.801) [.385]	1.101 (0.861) [.201]	3.370 (1.628) [.039]	2.672 (1.784) [.134]	1.509 (1.397) [.280]
Project (time-variant) controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Project fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

TABLE C1 (Continued)

	Baseline CEM			Caliper-based PSM			PSM		
	Combined	Target	External	Combined	Target	External	Combined	Target	External
	employees	employees	partners	employees	employees	partners	employees	employees	partners
Month fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared overall	0.634	0.614	0.603	0.634	0.620	0.579	0.727	0.710	0.709
R-squared within	0.255	0.236	0.168	0.239	0.215	0.158	0.107	0.106	0.084
Observations	54,878	54,878	54,878	70,886	70,886	70,886	30,521	30,521	30,521

Note: Robust standard errors are in parentheses; *p*-values are in brackets.
Abbreviations: OSS, open-source software; PSM, propensity score matching.

APPENDIX D: INTERVIEWS

TABLE D1 Information about conducted interviews.

Target	Acquirer	Acquisition year	Interviewee type(s)	Number of interviews	Overall interview duration (hh: mm)
Apiary	Oracle	2017	Target, Community	4	03:35
Appcelerator	Axway	2016	Target	2	01:13
Apportable	Google	2016	Target	1	00:28
BitsOfProof	Digital Assets	2015	Target	1	00:37
CoverMyMeds	McKesson	2017	Target	2	01:00
Deis	Microsoft	2017	Target, Community	2	01:18
FoundationDB	Apple	2015	Community	2	01:28
Grid Dynamics	Automated Systems Holding	2017	Community	1	00:21
Luster	DDN	2018	Acquirer	1	00:15
Monits	MercadoLibre	2016	Target	1	00:38
MoxieCode	Tiny	2015	Acquirer	1	00:48
Multiple	Apprenda		Acquirer	1	00:34
Multiple	Cloudbees		Acquirer	1	00:45
Multiple	Docker		Acquirer	1	00:35
Multiple	MongoDB		Acquirer	1	00:17
Opbeat	Elastic	2017	Target	1	00:33
Opower	Oracle	2016	Target	1	00:42
Packetbeat	Elastic	2015	Community	2	00:58
Pelagicore	Luxoft	2016	Target	2	01:28
Playfab	Microsoft	2018	Target	1	00:37
RedHat	IBM	2018	Target	1	01:01
RethinkDB	Stripe/CNCF	2017	Target, Community	2	01:32
Sipwise	Alcatel-Lucent Enterprise	2018	Target, Community	2	01:12
Tapglue	Localytics	2017	Target	1	00:38
TestObject	Sauce Labs	2016	Target	3	01:30
ThoughtWorks	Apax Partners	2017	Target, Community	3	01:58
Unikernel	Docker	2016	Target	1	00:34
Xamarin	Microsoft	2016	Target, Community	7	06:26
Zend Technologies	Rogue Wave Software	2015	Target, Community	3	02:27



APPENDIX E: MOTIVE CODING

In this section, we elaborate on the motive coding process. We use content analysis to determine the motives related to collaboration with the target's partners. Following an approach similar to that of Rabier (2017), we build on well-established acquisition motive categories (e.g., Graebner et al., 2010; Halebian et al., 2009) to guide our coding, while also allowing for new categories to emerge from the data to account specifically for OSS-sponsoring firms. To get a reliable perspective on each acquisition, we selected at least three distinct sources per acquisition. Notably, we observed that there were more press releases available, particularly for low-profile acquisitions, compared to news articles. Additionally, acquisitions involving acquirers or targets with a stronger tech-focused presence tended to have more news articles available. We took steps to eliminate redundancy in the dataset by removing articles or press releases with significant overlap, such as those where the target's press release closely resembled the acquirer's or where a news article primarily consisted of quotes from a press release.

In our preliminary examination of the press releases and news articles, it became clear that a keyword-based search did not allow us to identify the acquirers' motives. The stated motives we encountered were often too complex and nuanced for simple keyword detection. Similar to Rabier (2017), we read the whole document and coded passages (often full paragraphs) that contained motive descriptions. The initial coding, using both inductive and deductive approaches, was based on 50 acquisitions. This was our point of theoretical saturation where no new codes emerged from reading press releases and news articles. Deductive coding involved categorizing acquisitions based on well-established motives, such as market expansion. In contrast, inductive coding allowed us to identify and categorize motives not covered in the deductive list. To maintain focus, we refined the analysis by merging and splitting categories, concentrating on motives that directly address or could have implications for the collaboration with partners. In the codebook, we also illustrate other motives that we have found but that are not specific to OSS acquisitions and collaborations (Table F1).

To complement the coding and check whether our interpretation is accurate, we used two additional sources. First, we relied on our interviews to complement the description of the motives. For example, interviewees mentioned the threat of acquirers redeploying important assets, which helped us flesh out the extraction motive. Additionally, interviews helped us to clarify motives and develop important contingencies, for example the importance of restrictive versus permissive licenses. Second, we used the co-occurrence of motives and acquisition contingencies (Table E1) to test the validity of motives. After several iterations and with the potential motives sufficiently defined, two research assistants coded the whole sample. Then, one member of the author team and the research assistants discussed and resolved disagreements (i.e., when only one coder coded a motive). The coding process revealed that the motives presented by the firms in press releases are largely consistent with the motives described in news articles.

Table E1 provides an overview of the motives. We report their overall frequency and their frequencies categorized by the outlined contingency factors: the acquirer's OSS experience, the OSS license, and the structural integration of the target. Our analysis of these data, in combination with the interviews, reveals two types of motives: *protection* and *extraction*.

We then used these codes to categorize all acquisitions. We coded motives in a binary manner, where a motive was either considered present or absent. After independent coding of all acquisitions by two research assistants, the coders arrived at an average agreement in 80% of

the cases (see Table E2), resulting in a κ of 0.52 (with $\kappa = 0$ indicating agreement due to chance and $\kappa = 1$ complete agreement).

While this level of agreement is moderate, it falls short of the ideal standard recommended by existing guidelines (Landis & Koch, 1977). To address this, we clarified the definitions for the codes utilized in the coding process that caused the disagreements and resolved them.

We collected both press releases and news articles to have two complementary types of information sources (Table E3). The table shows that there is overlap in 45 out of 121 cases, suggesting that the different sources do not fundamentally differ in the motives they mention, but also significant non-redundancy. This is plausible given that neither press releases nor news articles can be expected to provide a full listing of all acquisition motives that play a role. In fact, firms may be reluctant to disclose some of their motives (e.g., those related to extracting assets), while journalists would tease out and report them.

TABLE E1 Number of acquisitions by coded open-source software (OSS)-related motive and moderator.

Stated acquisition motive	Number of acquisitions with this motive	Contingencies for the acquisition		
		Acquisitions with structural integration	Acquisition in which the acquirer had OSS experience	Acquisitions in which the project had permissive license
Technological complementarity	54	40 (74.11%)	19 (35.2%)	45 (83.31%)
OSS community	14	11 (78.61%)	7 (50%)	10 (71.41%)
Extracting technology	31	26 (83.91%)	18 (58.1%)	26 (83.91%)
Extracting employees	22	20 (90.91%)	12 (54.5%)	21 (95.5%)
No stated motive	53	24 (45.3%)	6 (11.3%)	44 (83%)
All acquisitions	143	93 (65%)	42 (29.4%)	121 (84.61%)

Note: Because an acquisition can have multiple motives, the frequencies of the motives do not add up to 143. Likewise, acquisitions can have multiple moderators. The percentages refer to the share of acquisitions with a given moderator (column) relative to the overall number of acquisitions with that motive (row). For example, there are 40 acquisitions with the motive *technological complementarity* that are structurally integrated. Forty is 74% of 54 (the total number of acquisitions with that motive). The percentages help explain the frequency of the combination of the motive and moderator relative to the frequency of the moderator in all acquisitions.

TABLE E2 Initial intercoder agreement.

	Agreement	κ
Protection: complementarity	73.47	0.4454
Protection: OSS community	85.03	0.6992
Extraction: extracting technology	73.47	0.4848
Extraction: extracting employees	85.03	0.4368
Overall	79.25	0.51655

Abbreviation: OSS, open-source software.



TABLE E3 Stated motives, depending on sources.

Variable	Motive found only in press releases	Motive found only in news articles	Motive found in both	Motive found in total
Protection: complementarity	12	19	21	52
Protection: OSS community	5	2	7	14
Extraction: extracting technology	8	15	8	31
Extraction: extracting employees	5	8	7	20
Total	31	45	45	121

Abbreviation: OSS, open-source software.

TABLE E4 Contributions to project conditional on motives, separated by source.

	External partners			Target employees		
	All sources	Press release	News articles	All sources	Press release	News articles
Post-acquisition × treated (DiD)	−0.266 (0.070) [.000]	−0.480 (0.067) [.000]	−0.477 (0.063) [.000]	−0.420 (0.065) [.000]	−0.233 (0.065) [.000]	−0.228 (0.069) [.001]
Protection motives						
DiD × complementarity	0.363 (0.099) [.000]	0.432 (0.097) [.000]	0.443 (0.093) [.000]	0.386 (0.102) [.000]	0.348 (0.101) [.001]	0.382 (0.108) [.000]
DiD × OSS community	0.172 (0.130) [.185]	0.043 (0.117) [.713]	−0.103 (0.108) [.343]	−0.214 (0.114) [.059]	0.097 (0.109) [.373]	0.079 (0.140) [.574]
Extraction motives						
DiD × extracting technology	0.083 (0.096) [.383]	−0.200 (0.097) [.040]	−0.179 (0.110) [.103]	−0.151 (0.117) [.198]	0.056 (0.118) [.636]	0.154 (0.109) [.157]
DiD × extracting employees	−0.258 (0.140) [.065]	−0.169 (0.127) [.186]	−0.124 (0.150) [.410]	−0.234 (0.134) [.080]	−0.266 (0.182) [.145]	−0.280 (0.142) [.049]
Constant	2.145 (1.109) [.053]	0.492 (0.964) [.610]	0.343 (0.947) [.717]	−0.041 (0.951) [.965]	1.914 (1.118) [.087]	1.745 (1.158) [.132]

TABLE E4 (Continued)

	External partners			Target employees		
	All sources	Press release	News articles	All sources	Press release	News articles
Project (time-variant) controls	Yes	Yes	Yes	Yes	Yes	Yes
Project fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Month fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared overall	0.603	0.614	0.614	0.615	0.602	0.602
R-squared within	0.168	0.236	0.235	0.236	0.167	0.168
Observations	54,878	54,878	54,326	54,326	54,326	54,326

Abbreviation: OSS, open-source software.

Table E4 shows the regressions analyzing the contributions to project conditional on motives with all sources, only press releases, or only news articles. Results are broadly consistent across sources.

APPENDIX F: CODEBOOK

TABLE F1 Codebook with description and examples.

Code	Description	Examples
Technological complementarity		
Complementary technology	There are expected complementarities between the technology of the acquirer and the OSS project maintained by the target. They are often directly mentioned in relation to the acquirer's product. Both technologies (the acquirer's and the target's) are seen as necessary for the product.	This acquisition combines the ElasticBox platform with the global network, hosting and delivery capabilities of CenturyLink (Acquirer: Centurylink-Target:ElasticBox) "Engine Yard has a decade of deep Ruby experience at the platform & support level and Crossover is the largest provider of Ruby developer cloud teams," said Andy Tryba, chief executive officer of Crossover & the new Engine Yard, and added: "By combining these two – we can now move up the stack and create a full stack Ruby on Rails experience to be a one-stop shop for the 1 M+ Ruby applications out there" (Crossover-EngineYard) Until now, the cloud platform market had no way to fully extend data protection across the digital landscape. The strengths of Datto and Backupify in this area are incredibly complementary (Datto-Backupify)
OSS community		
Open Source community	The text mentions the importance of the OSS	For over a decade, the DNN open source community has been instrumental in delivering solutions that



TABLE F1 (Continued)

Code	Description	Examples
	community for the acquisition. For this to be coded as such, the text needs to mention the community aspect of OSS (beyond purely mentioning open source). For example, they could mention how external developers contributed to the source code, how they remain important.	customers value. I look forward to embracing the community further to accelerate innovation and reenergize the power of open source (ESW Capital-DNN Corp) IBM's acquisition of StrongLoop continues its commitment to open source technologies and communities including Apache, Eclipse, OpenStack, Cloud Foundry and many others (IBM-StrongLoop) "They don't talk about (open source) much," Lavelle says. "But they understand that the way to develop software is through open platforms and communities." (Adobe Systems-Magento Commerce)
Extracting technology		
Extracting better technology	The text suggests that the target firm has advantageous technology (potentially superior compared to the current technology of the acquire). Sometimes it is directly mentioned that the target's technology can be used to substitute the acquirer's technology, for example, acquirer already has technology (or something similar) but target has better solution.	We acquired AppDynamics because they are a market leader in a category that will be a cornerstone for how enterprises drive their business forward (Cisco-Appdynamics) Uptane (by ATS Advanced) is the most extensive security solution available to defend against attacks on updates for connected vehicles (Here Tech-ATS Advanced) In just a short amount of time, Kensho's intuitive platforms, sophisticated algorithms, and machine learning capabilities have established a wide following throughout Wall Street and the technology world. Via this acquisition, S&P Global is demonstrating a strong commitment to not just participating in the fintech evolution, but leading it (S&P Global-Kensho)
Extracting employees		
Acqui-hire	Acquiring a firm because of employees/founders. The text specifically mentions the team, founders, or employees (sometimes by name). This goes beyond standard platitudes of mentioning that the acquired team is joining. Ideally, there is an indication that the team matters more for their expertise than for what they are currently doing.	One of the driving reasons for choosing to acquire Backupify is their amazing team (Datto-Backupify) Google secretly acquired the team at mobile app development startup Apportable more than a year ago, VentureBeat has learned. Terms of the deal have not been disclosed, but multiple sources have said that it was an acqui-hire (Google-Apportable) Steve Jurvetson, who lead the early investment in Nervana, said he was drawn to the unique background of the startup founders. "This is a group that's not been walking the usual path," he said (Intel-Nervana)
Threat		
Buy the threat	Target and acquirer are in the same niche/industry and it is mentioned that they are	Changepoint and Daptiv have both been recognized as industry leaders by analyst firms including Gartner, Forrester and TSIA (Changepoint-Daptiv)

TABLE F1 (Continued)

Code	Description	Examples
	seen as competitors. The text does not need to refer directly to the target being a threat.	Joining Okta was not an easy decision. Our two powerful technology stacks are so similar that we knew we would need to shutter the Stormpath API (OKTA-Stormpath) Ceph in some respects is seen as a competitor to the open-source Gluster filesystem project (RedHat-Inktank)
Pre-empt acquisition by someone else	The text states that the target firm might be acquired, which brings the focal acquirer to buy it. It might mention an initial public offering or competitors of the acquirer which might have been interested in the acquired firm.	There are plenty of interesting elements to the deal, not the least of which is that Cisco scooped up AppDynamics 1 day before the company was set to go public (Cisco-Appdynamics) Oracle drops \$500 M on cloud startup Ravello Systems, beats Dell and EMC to the punch (Oracle-Ravello Systems)
Expansion		
Geographic expansion	Through acquisitions more areas/countries are available for distribution.	This acquisition accelerates it toward achieving that ambition, with a presence in Europe, both coasts of the United States and in various locations in Asia. Cambridge Consultants already works for many blue-chip companies around the world including Novartis, Philips and Hitachi (Cambridge-Synapse) Canyon Bridge can provide access to Asian and Chinese markets where there is a huge appetite for such products and Imagination's footprint is currently relatively small (Canyon Bridge-Imagination Technologies)
New channels, network	The acquisition leads to new channels or networks, for example, a different "how" to reach the customer.	Zimbra brings hundreds of millions of free and paying users in 135+ countries, adds new customers to Synacor's roster including 2500+ small business customers and 900+ government customers, and adds a valuable network of 1000+ value added resellers and 500+ hosting partners (Synacor-Zimbra)
New customer segment	New group of customers or customer segments available through acquisition. For example, moving from b2c to b2b, or now reaching larger firms.	By becoming part of CenturyLink, the ElasticBox platform will be able reach more customers as it will not only gain access to the service provider's global network, but also its broader hosting and delivery capabilities (Centurylink-ElasticBox) Microsoft is likely hoping that PlayFab's platform will make Azure more attractive to small to midsized game developers, many of which currently host their online games through rival cloud platform Amazon Web Services (Microsoft-Playfab)
Portfolio expansion	Through acquisition the portfolio of products or	The move lets Savvis expand its portfolio outside of infrastructure solutions. Savvis customers will now

TABLE F1 (Continued)

Code	Description	Examples
	services can be expanded. The focus of the acquisition is on the output (product or service) side instead of the technology.	have access to AppFog's public and private PaaS options (CenturyLink-AppFog) We are excited about the Netcentric acquisition as it underscores our commitment to our clients across Europe and enhances our portfolio of digital capabilities in the interactive and digital marketing space (Cognizant-Netcentric)
Other motives		
Synergies and efficiency	Cost savings, synergies, saving potential. The focus is on reduction (of staff, costs) in contrast to creating complementarities (which are rather expected to increase output).	Offers significant opportunity for operating synergies given the scale and overlap of the combined organization (RealPage-Onsite) The company expects to realize at least \$100 million in annual cost synergies, with 65% of these synergies recognized in the first 12 months (Rovi Corporation-Tivo)
Exploit (financial) weaknesses	Acquisition of a struggling company. For example, buyer takes advantage of financial distress.	Basho Technologies, which is known for contributing for Riak's development by creating its distributed NoSQL database, has been facing difficulties for some time now (Bet365-Basho) The company raised just under \$20 million in total, so the sale to Google was likely a soft landing for a company that had interesting features but struggled to build a business (Google-Bump Technologies)
Exploit growth potential	Motive is to leverage identified growth potential of the acquired firm. The acquirer sees a potential to scale the target. Target is expected to grow at a higher rate than before.	The main attraction for us is the underlying growth potential of Imagination Technologies (Canyon Bridge-Imagination Technologies) With this transaction we are further accelerating both HBC's all-channel offering and Gilt's growth (Hudson-Gilt Group) While Permira did not disclose how much it paid of the \$925 million total price for its assets, Principal Phil Guinand said that the company had great potential for growth. Under eBay, the company had already quintupled its business and is on track for annual revenue of about \$100 million, he said (Permira-Magento Commerce)

Abbreviation: OSS, open-source software.

APPENDIX G: ALTERNATIVE TEST OF MODERATORS

In the manuscript, we use split samples to analyze the contingent effect of structural integration and project license. An alternative possibility is to use triple interaction, in which we interact the moderator (project license or structural integration) and the related motive. Because the moderator and motives are not time-variant, several factors (**Motive_i**, **Moderator_i**, **Motive_i × Moderator_i**) are absorbed by the acquisition fixed effects:

$$Y_{it} = \beta_0 + \beta_1 \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_2 \times \text{Motives}_i \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_3 \times \text{Moderator}_i \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_4 \times \text{Motives}_i \times \text{Moderator}_i \times d_i^{\text{Treat}} \times d_{it}^{\text{Post}} + \beta_5 \times \mathbf{X}_{it} + \alpha_i + \gamma_t + u_{it}$$

The results (Table G1) are consistent with the split sample analysis. The coefficient for DiD × extracting technology × license is negative and significant ($\beta = -1.006$, $p < .001$) for target employees. The coefficient for DiD × OSS community × integration is negative and significant for external partners ($\beta = -.726$, $p = .017$).

APPENDIX H: SAMPLE SELECTION OF ACQUISITIONS

In the following we explain in greater detail our sample selection. Our goal was to find acquisitions where the target sponsors OSS communities. To do so we match acquisitions found on Crunchbase with repositories on GitHub managed by the target firm. To do this, we link firms

TABLE G1 Contributions to a project (difference-in-differences [DiD]) conditional on motives and moderator.

	Extracting technology		OSS community	
	Target employees	External partners	Target employees	External partners
Post-acquisition × treated (DiD)	−0.398 (0.136) [.004]	−0.028 (0.137) [.840]	−0.279 (0.080) [.000]	−0.023 (0.084) [.787]
DiD × extracting technology	0.660 (0.255) [.010]	0.361 (0.209) [.084]		
DiD × license	0.065 (0.144) [.649]	−0.158 (0.146) [.281]		
DiD × extracting technology × license	−1.006 (0.268) [.000]	−0.305 (0.223) [.172]		



TABLE G1 (Continued)

	Extracting technology		OSS community	
	Target employees	External partners	Target employees	External partners
DiD × OSS community			−0.174 (0.342) [.612]	0.825 (0.285) [.004]
DiD × integration			−0.184 (0.101) [.070]	−0.224 (0.104) [.032]
DiD × OSS community × integration			0.114 (0.362) [.752]	−0.726 (0.305) [.017]
Constant	0.572 (0.970) [.556]	1.729 (1.121) [.123]	0.310 (0.962) [.747]	1.247 (1.112) [.262]
Project (time-variant) controls	Yes	Yes	Yes	Yes
R-squared overall	0.616	0.599	0.613	0.599
R-squared within	0.234	0.165	0.231	0.167
Observations	54,510	54,510	54,740	54,740

Abbreviation: OSS, open-source software.

to project contributors by matching the email domains of the targets with the email addresses of GitHub users. Some GitHub users do not use their firm email address. To ensure correct labeling of those users, we employ an algorithm that checks company affiliation by matching names of GitHub users to LinkedIn profiles. We tested over 100,000 GitHub users working on projects in our sample and identified ~20,000 users working for a sponsoring company in a project without using a company email address. We find 185 acquisitions with 518 projects.

We exclude minor projects with fewer than five external or internal contributors. According to Kalliamvakou et al. (2016), more than two thirds (71.6%) of GitHub projects have only a single participant (its owner). By filtering, we ensure that the firm has invested considerable resources into a project and avoid selecting projects where employees contribute as hobbyists outside of their work. Furthermore, we ensure that the projects were successful in attracting contributions from the community, which allows us to capture the effect of an acquisition on contributions from the acquired target as well as on those from the community.

We also require at least 5% of the contributions to the repository from each group in order to exclude cases where the project is effectively a closed project by the sponsoring firm or where the sponsoring firm is a sponsor in name only. Similar to He et al. (2020), we exclude forks since they inherit all contributions from their respective parent project and hence create a large number of duplicates.