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Abstract

Work teams must increasingly operate in complex environments characterized by multiple external actors beyond team and organizational boundaries. Although previous research demonstrates the importance of boundary spanning activities to team effectiveness, it reveals relatively little about the process of boundary spanning in these environments. In this article, we investigated the processes of boundary spanning across multiple external actors in 10 cross-organizational teams. We identified three sequences for reaching out to external actors: (a) moving *inside-out* from vertical actors inside the host organization to horizontal actors outside of the host organization, (b) moving *outside-in* from horizontal actors to vertical, and (c) *staying-inside* with vertical actors from the host organization. Our observations suggest that *inside-out* and *outside-in* sequences were more successful than simply pleasing the host organization. We build on our empirical findings to develop a process theory of how team boundary spanning activities across multiple external actors influence team effectiveness. Our research underscores the importance of a team's interactions with actors in its external environment

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beyond those in an immediate supervisory role and provides insight into the dynamics of boundary spanning in multi-organizational contexts.

Keywords

boundary spanning, group process, qualitative research

To deal with increasingly complex, ambiguous, and innovative tasks, modern organizational teams are expected to work beyond team boundaries (Ancona & Caldwell, 1992; Marrone, Tesluck, & Carson, 2007; Wageman, Gardner, & Mortensen, 2012) and deal with repeated environmental disruptions (Arrow, Poole, Henry, Wheelan, & Moreland, 2004; Okhuysen, 2001). Understanding what makes teams effective in these environments is therefore crucial. By effectiveness, we mean performance that is recognized in the team's organizational environment as successful.¹ Existing research supports the notion that interactions with the environment outside of the team are consequential for team effectiveness (Ancona & Bresman, 2007). Effective teams use a broad array of strategies to manage their relationships, both to get information and to shape opinions. Collectively, the activities and processes directed toward establishing linkages and managing relationships with stakeholders in a team's environment represent the team's boundary spanning activity (Gibson & Dibble, 2012; Marrone, 2010).

Despite growing attention to the antecedents and consequences of boundary spanning activity in teams, existing research sheds relatively little light on "how and why [boundary spanning] behaviors are carried out by teams" (Marrone, 2010, p. 912). In particular, the sequence through which a team's boundary spanning activities are directed toward multiple external stakeholders over time is an issue that deserves research attention because boundary spanning activity is likely to be dynamic and complex (Okhuysen et al., 2013), and different types of boundary spanning activities have been linked to short-term versus long-term success (Ancona & Caldwell, 1992). For example, externally oriented activity has been found to produce disruptive internal team processes in the short run that dissipate over time (Ancona, 1990). This implies that the point at which external activity occurs is consequential, so that the process of boundary spanning strongly influences team outcomes (Gibson & Dibble, 2012). However, we argue that by treating the external environment as a single (e.g., Drach-Zahavy, 2011) or unitary (e.g., Marks, DeChurch, Mathieu, Panzer, & Alonso, 2005) entity, research has not yet illuminated the precise nature of the process through which teams engage multiple external actors.

To address this critical issue, we conducted a qualitative case study of externally oriented activity in 10 cross-organizational teams (COTs; that is, teams that include members external to the host organization; for example, Schopler, 1987; Zuckerman & Higgins, 2002). This context allowed us to examine teams with potential links to multiple external stakeholders to develop empirically grounded sequences through which those teams engage in boundary spanning activities with stakeholders over time. We then drew on our empirical observations to build a tentative theory linking boundary spanning across multiple external stakeholders with team effectiveness.

Team Boundary Spanning in Multi-Organizational Contexts

Team boundary spanning activities are actions that a team engages in to establish relationships with external actors who can assist the team in meeting its objectives (Faraj & Yan, 2009; Marrone, 2010). These activities may include negotiating deadlines with managers, discussing needs with customers, collaborating with suppliers, learning from other teams in the organization, among a host of externally oriented activities.

Broadly speaking, two types of boundary spanning activities enable teams to be more effective. The first is instrumental activities that enable task performance, such as exchanging information with key external actors to improve team decision making (Cummings, 2004; Hansen, 1999), coordination (Drach-Zahavy & Somech, 2010; Marks et al., 2005), learning (Bresman, 2010), and innovation (Perretti & Negro, 2006; Reagans & Zuckerman, 2001). The second is impression management activities through which the team represents itself to key stakeholders. These allow the team to set appropriate expectations about its output, protect itself from outside pressure, and manage its reputation (Ancona, 1990; Huang, Luo, Liu, & Yang, 2013). In doing so, boundary spanning helps the team to be viewed as legitimate and appropriate so that it can obtain support and resources from external actors (Ancona & Waller, 2007; Cummings, 2004; Galunic & Eisenhardt, 1996). Although boundary spanning activity may be undertaken primarily by one team member (e.g., the leader), the totality of these activities enacted by members of a team represents a shared property of the team (Joshi, Pandey, & Han, 2009). We therefore define team boundary spanning to include actions taken by any team member to establish or build relationships with external actors.

External actors are the parties that are outside the team, but within its embedding environment (Marrone, 2010). They therefore exist both inside

and outside the team's host organization. Inside the organization, external actors include senior individuals and groups representing the host organization that houses the team within its structure (Bresman & Zellmer-Bruhn, 2013; Gibson & Dibble, 2012). A focal team is likely to be vertically linked to those external actors; that is, a team is likely to have a hierarchical reporting relationship with those external actors, who also influence the team's access to organizational resources. External actors may also include other teams or sub-units within the host organization, or others outside the host organization, with whom the team is horizontally linked (Mathieu, Marks, & Zaccaro, 2001; Ramarajan, Bezrukova, Jehn, & Euwema, 2011). These actors are less likely to be formally connected to the team.

Previous research recognizes the complexity of teams' external environments and has been conducted in settings where multiple external parties have been present. This same research, however, has not distinguished between different types of actors and the boundary spanning behaviors associated with each. Instead, research to date tends to treat the external environment as unitary and homogeneous. For example, researchers tend to group externally oriented strategies together, ignoring who specifically the strategy is aimed at within the external environment (e.g., Druskat & Wheeler, 2003; Oh, Chung, & Labianca, 2004). Similarly, survey questions about team member boundary spanning behavior ask respondents to evaluate the extent to which team members engage in different external activities with respect to all external actors (e.g., Ancona & Caldwell, 1992; Marrone et al., 2007). Extant studies do not distinguish between different types of external actors, and therefore are not in a position to appreciate the nuances of the process of boundary spanning in a multi-organizational context.

Process of Team Boundary Spanning

In general, teams that engage in more extensive and comprehensive forms of external activity are more effective (Oh et al., 2004; Sparrowe, Liden, Wayne, & Kraimer, 2001; Stam & Elfring, 2008). However, the relationship between boundary spanning and effectiveness is not straightforward. Research on the dynamic and reciprocal effects of external activity and internal team processes suggests that a team's attention and effort must be carefully divided between internal and external parties to avoid negative consequences (J. N. Choi, 2002; Maynard, Mathieu, Rapp, & Gilson, 2012; Ramarajan et al., 2011). For example, external activity is most beneficial to a team when boundary spanners identify strongly with both the team and the organization (Richter, West, Van Dick, & Dawson, 2006) and boundary spanning involving external learning can be harmful if it is not accompanied by internally

coordinated learning processes (Bresman, 2010). These results reveal the need to complement internal with external activity and vice versa. In contrast, internally focused team activity can distract the team from engaging with its environment, while externally focused activity can prevent the team from becoming a cohesive unit (Ancona, 1990).

The complex relationship between internal and external dynamics hints at the notion that the sequence of activities through which teams manage their external environment influences team effectiveness (Ancona, 1990). For example, teams may benefit from turning their attention and effort to either internal team members or external relationships at different points in the team's development. Consistent with this view, teams that engage early on in ambassadorial or task coordinator boundary spanning tend to have poor internal dynamics initially (Ancona & Caldwell, 1992). Examining the sequencing of boundary spanning activity over time is therefore critical (Drach-Zahavy & Somech, 2010).

Externally oriented behavior has also been found to be important when the team's environment is dynamic and the team is fluid and relatively temporary (Gibson & Dibble, 2012). Environmental demands may change over time, so the role of external activity may also change. Consider, for example, a new product development team. Initially, the task is likely to be relatively ambiguous (e.g., what kinds of product innovation are possible?) and the environment diverse. At this early stage, the team is likely to be open to many possibilities and directions. Later in the development cycle when customer needs are better defined, the team will have a clear idea to test and execute that requires a specific and stable set of team roles and skills (Kanter, 1988). Similarly, early in the new product development process, the team's activities may violate organizational norms by, for example, appearing unproductive or disorganized, so the external environment may initially be unreceptive or unsupportive; the team's success in helping the organization to understand and appreciate its work will determine its effectiveness (Dougherty & Heller, 1994). The process through which the team organizes its external activity may therefore be consequential for its ability to perform its task well and to gain legitimacy in the organization.

External activity is perhaps more important for team effectiveness when the environment is diverse (J. N. Choi, 2002; Oh et al., 2004). Adding multiple external actors to the environment creates even more choices for teams about how to engage in boundary spanning activity. In part, this is because different actors can provide different benefits of boundary spanning activity. For example, the external actor who can provide the most relevant information for the team's task might not be the one with the greatest access to resources, so determining which of these functions is most valuable to the

team at any point in time is important. This uncertainty makes effective boundary spanning even more important for team effectiveness (Faraj & Yan, 2009). Given that building a relationship with an external actor requires energy and resources, however, focusing on one actor may harm other external relationships simply from lack of time. Moreover, in some instances, diverse external actors' objectives may directly conflict with one another, so that it is not possible to satisfy all actors (Rockman, Pratt, & Northcraft, 2007). In fact, recent research suggests boundary spanning may actually have negative consequences in multi-organizational contexts (Ramarajan et al., 2011). We propose that the way a team engages with different actors at different points in time may influence its outcomes.

As relatively little is known about the sequence of boundary spanning activity in teams (Gibson & Dibble, 2012; Marrone, 2010), existing research can provide limited insight into the questions we have raised. The purpose of the present research is to explore the process through which teams engage in boundary spanning activity with different external actors and to build theory to link that process to team effectiveness. We chose to study boundary spanning in COTs because these teams naturally have multiple external audiences (i.e., the host organization and external constituents from whom team members are drawn). We examined the process of boundary spanning from the beginning of a team's life through to the execution stage, which allowed us to capture the periods during which a large amount of boundary spanning activity was likely to take place.

Research Context

The setting for this study was a university-linked state Cooperative Extension System (CES). The CES was established to disseminate research from the colleges established with the Land-Grant Act of 1862, which gave each state land for a university to provide research and training in agriculture and mechanics. The CES was designed to achieve two interrelated goals: to put academic research to direct use in the community and to keep academic researchers abreast of community or citizen issues—thus bringing the university and the state's citizens in closer alignment.

The specific CES that we studied provides an appropriate research context because its central mission is accomplished almost exclusively through COTs whose members are drawn from both a host organization (the university), in which the teams are formally housed, and stakeholder groups outside of the host organization (e.g., community groups and state government agencies). It therefore provides an extreme setting in which a team's need to engage with organizations in its external environment is brought to the surface. This is

ideal for theory building (Bamberger & Pratt, 2010) because it allows us to observe how teams navigated a complex external environment in a way that might not be possible in other settings. In the context we studied, external actors included members of the organization in which the COTs were formally housed (i.e., the university administration and staff, the CES administration), other COTs within the host organization, and actors working in the COT's field of interest but outside the organization, such as government organizations, industry associations, and practitioner groups.

Team members worked together to develop and run projects like school enrichment clubs, educational resources for farmers, or healthy living training for senior citizens. The teams therefore worked interdependently toward clear shared goals (Hackman, 1987), which required them not only to engage in cognitive activities like sharing information and generating ideas but also to coordinate their work. Teams also had bounded and stable membership (Hackman, 1987); individuals were asked either to join the team or volunteer to be on the team, they were not pulled together on an ad hoc basis for specific projects. Some team members had worked together on prior projects, but full teams had not worked together before. Teams' work processes varied but members of all teams participated in other activities, projects, and teams as part of their work.

Method

Following other researchers who are interested in organizational processes (e.g., Anand, Gardner, & Morris, 2007; Bresman, 2013; Nag & Gioia, 2012), we combined a case study approach with grounded theory methodology (Langley, 1999). Specifically, we first used grounded methods to develop cases describing the sequence of early boundary spanning activity in each of 10 COTs; we then used a case study approach to compare and contrast those sequences across the 10 teams. Case studies drew on interviews with 46 team members. Our approach was consistent with grounded methods because it followed two core concepts of that approach, as originally articulated by Glaser and Strauss (1967) and reiterated for management research by Suddaby (2006). One, it involved theoretical sampling to guide our choices of research site and informants. Two, it relied on constant comparison techniques to identify key boundary spanning activities and their sequence over time. Those concepts are described in detail below.

Using a case study approach to compare across the 10 cases then allowed us to replicate the boundary spanning process. Early cases provided an opportunity to develop an understanding of the nature of that process. Subsequent cases could therefore be treated like experiments to help confirm or revise the

nature of the process identified in previous cases (Eisenhardt, 1989; Yin, 2003). Our grounded case study approach is appropriate given that little is known about the sequence of boundary spanning activity across multiple actors (Eisenhardt & Graebner, 2007).

Data Collection

We immersed ourselves in the history and development of each team over time, based on the retrospective and current accounts of team members. Consistent with grounded methods, we included all of the COTs in the CES at the focal university in our data collection because all of the COTs were embedded in a multi-organizational context and therefore were relevant for our theoretically derived research question (Strauss & Corbin, 1998). We learned about the COTs through a series of semi-structured interviews with team member informants selected to represent the constituencies of the team: members of the host organization and CES administration, and members of field organizations like government agencies, field associations, and practitioner groups. We obtained the views of COT members on the founding, external interactions, and functioning of the COT. Interviews were conducted by four researchers who were familiar with the CES, including the second author of the article. We continued adding informants from a team until a consistent view of the team's history, operation, and interactions emerged and new informants failed to add new information (Miles & Huberman, 1984).

The study was approved by the human subjects committee at the university where data collection took place. Interviews were voluntary and did not address issues that participants were likely to find sensitive, so we do not expect that they experienced any harm as a result of their participation. There was no evidence that anyone felt compelled to participate in the study, and we judge this to be unlikely due to the decentralized nature of academic institutions and the fact that faculty members involved in the research were not in an authority position over potential interviewees. Interviewees were given informed consent and could withdraw from the study at any time without penalty. All informant comments were provided in confidence and were used in a way that ensured their anonymity (e.g., data were aggregated before feedback was discussed with supervisors or other members of the CES). As with much field-based qualitative research, there is a risk that by conducting the study, we may have influenced our informants. In this instance, asking team members to reflect on their team experience and performance may have affected subsequent team outcomes. For example, previous research demonstrates that receiving negative feedback can increase team conflict (Peterson & Behfar, 2003). However, that potential negative effect is balanced with the

potential benefit the teams may have derived from reflecting on their performance (De Dreu, 2002).

COTs consisted of between 8 and 30 members. For most teams, four to six informants, drawn from different constituencies, participated in the study. Some teams, however, had relatively low levels of engagement from one or more constituents and we were unable to obtain interviews with representatives of all groups. One team was excluded from our analysis because we were only able to interview one informant. For a second team, we obtained multiple interviews but from only one constituent (the host organization). We included that team in our analysis and results because we found that their processes were consistent with those described in similar teams from whom we had informants from both constituents. Interviews lasted from 1 to 2 hr and each was tape recorded and transcribed. A description of the interview data is contained in Table 1.

The COTs included in the study (names disguised) are Fruit, Vegetable, Dairy, Crop Production, Economic Development, Youth Development, Family Development, Environment, Health and Nutrition, and Home and Housing Development.

Unit of analysis. Our unit of analysis was the COT, and specifically, the initial five non-repeating boundary spanning activities in the sequence of a COT's boundary spanning process. This approach is appropriate for analyzing process data, which consists of sequences of events (Abbott, 1990; Langley, 1999). In our study, the events are different kinds of boundary spanning activities that occur at different points in time. We characterize our unit of analysis as this sequence of boundary spanning activity. However, because developing process theory also requires connecting events to characteristics of actors and their environments (Pentland, 1999) we note that the sequences of boundary spanning activity are contained within the histories of the focal actors in our study (i.e., COTs).

We used temporal bracketing to construct the most relevant comparative units for our analysis (Langley, 1999). Specifically, we focused on the first five non-repeating boundary spanning activities of a COT because the activities that occur early in a group's life have been shown to be particularly relevant in understanding its subsequent performance (Erickson & Dyer, 2004). The teams in our sample had an average of 8.7 stages of boundary spanning activity, and because teams go through a midpoint transition (Gersick, 1988), we took the first five to represent the group's early activities. We observed significant consistency in the teams' first five activities. For teams with longer sequences, analyzing the end of the sequence did not provide additional insight into their external activities.

Table 1. Description of Case Data.

Cross-organizational team	Number of informants
Dairy	
Members from university and CES	1
Members from field organizations	3
Fruit	
Members from university and CES	3
Members from field organizations	3
Vegetable	
Members from university and CES	3
Members from field organizations	1
Home and Housing Development	
Members from university and CES	3
Members from field organizations	3
Family Development	
Members from university and CES	2
Members from field organizations	0
Economic Development	
Members from university and CES	4
Members from field organizations	1
Youth Development	
Members from university and CES	1
Members from field organizations	3
Health and Nutrition	
Members from university and CES	2
Members from field organizations	3
Environment	
Members from university and CES	3
Members from field organizations	2
Crop Production	
Members from university and CES	4
Members from field organizations	1
Total number of informants	46

Note. CES = Cooperative Extension System.

Analytic Strategy

Phase I: Identifying boundary spanning activities. In the first phase of analysis, we used a grounded methodology to identify the teams' key boundary spanning activities (cf. Corley & Gioia, 2004; Nag & Gioia, 2012). We began

with informant comments describing any interactions a team had with external constituents. We then used constant comparison techniques, which are a cornerstone of grounded methods (Strauss & Corbin, 1998; Suddaby, 2006), to look for similarities among informant comments, then groups of informant comments, and finally groups of theoretical labels. This involved iterating between the data and theory, and resulted in mutually exclusive and exhaustive categories that wholly described the teams' activities (Miles & Huberman, 1984). The process is illustrated in Figure 1 and described below.

We read through the interview transcripts to identify any comments about interactions between a COT and an external actor (Gioia & Thomas, 1996). We initially open coded these statements, drawing on the language used by informants (Strauss & Corbin, 1998; Van Maanen, 1979). We created a database of 280 codable statements or sets of statements, each describing a coherent and complete point (Weber, 1990). These are the quotations provided as examples of first-order concepts in Figure 1.

We then used axial coding to search for relationships between first-order codes, from which we assembled abstract higher order themes that described a theoretically interesting group of first-order concepts (Strauss & Corbin, 1998; Van Maanen, 1979). For example, *observe external actors' goals* and *mirror external actors' reward structure* were two first-order codes that both represented ways of directly adopting a practice from external actors, so we labeled them *adopting* activities.

We performed a final iteration, gathering these themes into aggregate dimensions to produce an emerging framework to guide the analysis (Gioia & Thomas, 1996). For example, we found that in addition to adopting activities, COTs also solicited resources or ideas from external actors. Both of these activities created a linkage between the team and an external actor, without requiring either party to change or adapt to be part of the relationship. These were attempts by the team to fit directly into the external actor's existing environment in a way that matched the actor's relationship with other parties. We therefore labeled them *linking* activities.

Once we had developed a comprehensive view of a team's boundary spanning activities, we examined the activities to determine which external actor the activity involved.

To ensure that our coding was trustworthy (Lincoln & Guba, 1985), we conducted a reliability test. The third author, who had not yet been involved in the coding process, coded a set of 30 statements from the interview transcripts (representing 11% of the database) according to the aggregate activity dimensions and the external actor the activities were directed to. The coding showed a high level of reliability (Cohen's kappa = .89).

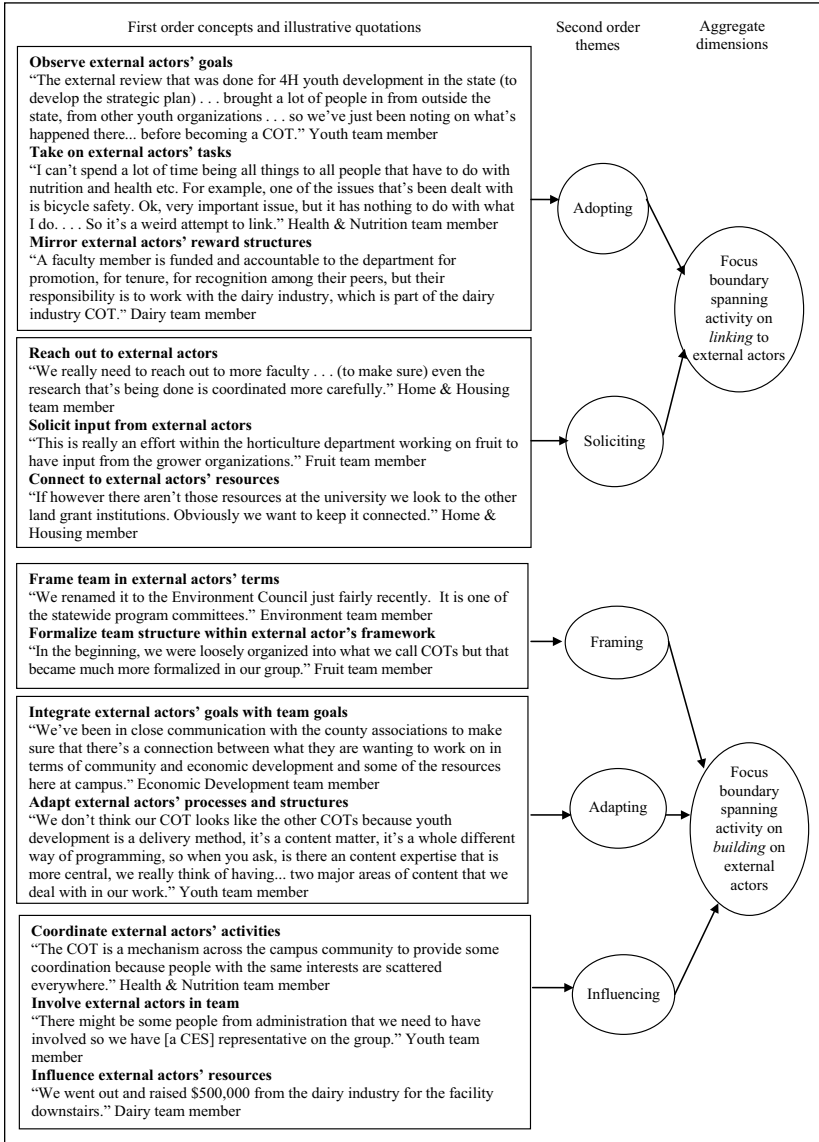


Figure 1. Development of data structure.

Phase II: Sequences of boundary spanning activity. The next step was to build the sequence of boundary spanning activity over time. To do this, we reconstructed the case history of each COT to describe the chronological sequence in which the activities identified in Phase I of the analysis occurred (Anand et al., 2007; Bresman, 2013). Constructing this kind of narrative is helpful for studying processes because it helps reveal the nature of relationships between events within a sequence (Pentland, 1999). One author took the lead on writing case studies based on interview transcripts. The author who is knowledgeable about the CES context reviewed the cases to identify and eliminate any inconsistencies or gaps. At this stage, we also asked key informants to review the written case studies to confirm that they represented the sequence of boundary spanning activity in their COT.

We also paid specific attention to the actor at whom boundary spanning activity was targeted. Specifically, there were two sets of external actors that COTs in our study interacted with: (a) vertical actors, with whom the COT had a hierarchical relationship within the organizational structure, which included the university and CES administration, and (b) horizontal actors with whom the team did not have a hierarchical relationship, which included industry associations, community groups, and government organizations.

The two authors involved in case development up to this point then independently coded the cases according to the boundary spanning activities identified in Phase I of the analysis, paying particular attention to the external actor to whom those activities were addressed. The third author, who had coded informant comments as a reliability check in the first part of the analysis, but who had not yet been involved in developing the cases that described sequences of activities over time, then also coded the cases. Cohen's kappa between this rating and that of the other two authors was .90, suggesting a high level of reliability between the three coders. We resolved any instances where we disagreed over the coding through discussion so that the three authors agreed on the final codes assigned to the cases. Based on the coded case studies, we created a visual map of boundary spanning activity for each of the 10 COTs (Langley, 1999).

Phase III: Compare and contrast boundary spanning sequences. Finally, we compared and contrasted the sequence of boundary spanning activity within and between COTs. We first looked for common patterns across cases (Yin, 2003) by comparing the maps created in Phase II for each team. Once commonalities between sequences had been established, we compared the different groupings of smoothed sequences that we identified to search for key differences between them (Yin, 2003).

Presenting the sequences in this way somewhat obscures their complexity. Consistent with the convention in process analysis, we simplified the sequences to enable us to provide explanations that generalize across the teams in our study (Pentland, 1999). Our goal was to identify common patterns across the sequences (Abbott, 1990) and compare differences rather than to comprehensively account for each stage of every sequence encountered by the COTs. Where discrepancies occurred between sequences that we had grouped together because they followed a similar pattern, we used our judgment to determine which element(s) of the sequence dominated the process of those teams.

Findings

In this section, we discuss the empirically grounded sequences of boundary spanning activity we observed in the 10 COTs. We first briefly describe the categories of activity and their relationship to one another that constituted the building blocks for those sequences, before turning to the sequences themselves.

Boundary Spanning Activities in COTs

Phase I of our analysis revealed two broad categories of boundary spanning activities (illustrated in Figure 1). The first category of activity was *linking* activity, which involved attempting to connect directly to external actors by creating a relationship that corresponded to others of the actor. *Linking* activities mirrored the goals, practices, or processes of external actors in such a way as to match their expectations. For example, *linking* activities included adopting a particular organizational goal, soliciting funding from an organization, or changing the team's name to be consistent with others in an organization. *Linking* activities reflected an assumption that the team was expected to conform to and fit in with the existing structure of that actor, and that doing so would help it to connect to the existing structure, regardless of the activity's instrumental value. For example, one member of the Family Development team commented as follows:

Agriculture is the 900 lb gorilla of the campus. . . . They dictate what is going to happen with the college . . . so because the [team] has been deemed necessary and valuable in Agriculture, they try to impose the team's way of doing things on the entire CES [i.e., the other teams]. (Family Development team member)

The second category of activity was *building* activity, in which teams attempted to reach beyond the status quo and build on the structures and

practices of external actors, creating a new kind of relationship between the team and the actor. *Building* activity was often a proactive choice by a team, enabling it to perform more effectively. For example, several large teams split into smaller, more manageable sub-groups, which deviated from the CES structure, but facilitated their task performance. Other examples of *building* activity include framing goals and structures in terms of an external actor's framework or fulfilling a key role for an external actor that the actor could not achieve for themselves. With *building* activities, the link between the team and the actor was not always immediate because the structures and practices of the team might not directly match those of the external actor and its relationships with others. However, *building* also provided the opportunity for a deeper relationship between the team and the external actor by increasing the value or relevance of an activity for both parties. For example, the following quotation from a member of the Economic Development team describes how the team deviated from prescribed practices in the CES in an effort to make the team's task more beneficial and interesting to both.

I think it's always finding the right balance between how often to meet and making the meetings really lively and beneficial for the participants. If you don't meet frequently enough, sometimes the meeting has just been bringing everyone up to speed on all the things that have been happening [with all of the sub-groups]. (Economic Development team member)

Relationship between linking and building activities. *Linking* and *building* activities did not always occur in isolation. For example, a COT might take on a task for the CES administration, like reviewing funding proposals (*linking*), while also integrating administrative goals with those of the team (*building*). However, our observation was that these activities generally followed one another. In the above example, a COT might take on a task for an external actor, but then integrate and adapt goals as it learned about the challenges involved in that task.

Moreover, because adapting goals and tasks altered the clear link between the external actors and the COT, *building* activity also involved *unlinking* with the external actor. This reveals that *linking* and *building* activity entailed a trade-off; that is, in *building* a new relationship there was a risk that the link between the team and a different actor would become less clear, while *linking* to an actor meant accepting an existing relationship rather than *building* a new one. For example, one member of the Crop team described how *linking* the team to the CES by adopting the CES administrative structure prevented the team from *building* new kinds of relationships:

The most critical thing to me was that we got the players together, the people that were actually [delivering] programs, looked them face-to-face . . . but . . . the CES administration just kind of shut that way of operating down. I guess we weren't absolutely forbidden to continue operating that way, but we were more or less told that no, we're going to go for a new model. (Crop team member)

Thus, our data suggest that COTs experienced a tension between *linking* and *building* activities.

Locating attention on different external actors. Just as there was a trade-off between *linking* and *building* activities, we also observed a tension between locating a team's attention on the two different types of actors. For example, one member of the Home and Housing team commented on the challenge of unifying the priorities of different external actors:

There's a lot of open discussion as to what the counties could do, what they might bring to the table, what those of us at the university might be doing. I mean, we start out with a lot of sharing of what everybody has been doing for the past 3 or 4 months. But then, there's times that [we wonder] how can we bring this all together into a project? (Home and Housing team member)

Engaging in boundary spanning with more than one external actor required splitting the teams' attention. In addition, as actors were likely to have different priorities and ways of working, connecting more closely to one actor by adopting that actor's goals or processes could mean moving farther away from another's processes and practices. COTs therefore also faced a tension between engaging with one type of actor versus another.

Sequences of Boundary Spanning Activity

In Phases II and III of our analysis, we ordered the boundary spanning activities we identified in Phase I of our analysis (and described in the previous section) over time. This revealed three sequences through which COTs engaged in boundary spanning activities—an *inside-out* sequence of moving from the immediate environment to more distal horizontal relationships, an *outside-in* sequence of moving from horizontal to vertical relationships, and a *staying-inside* sequence of interacting primarily with the immediate host organization. We illustrate these sequences in Figure 2. Figure 2 is a summary of the sequences we identified for each team; the full sequences for each team are contained in the appendix.

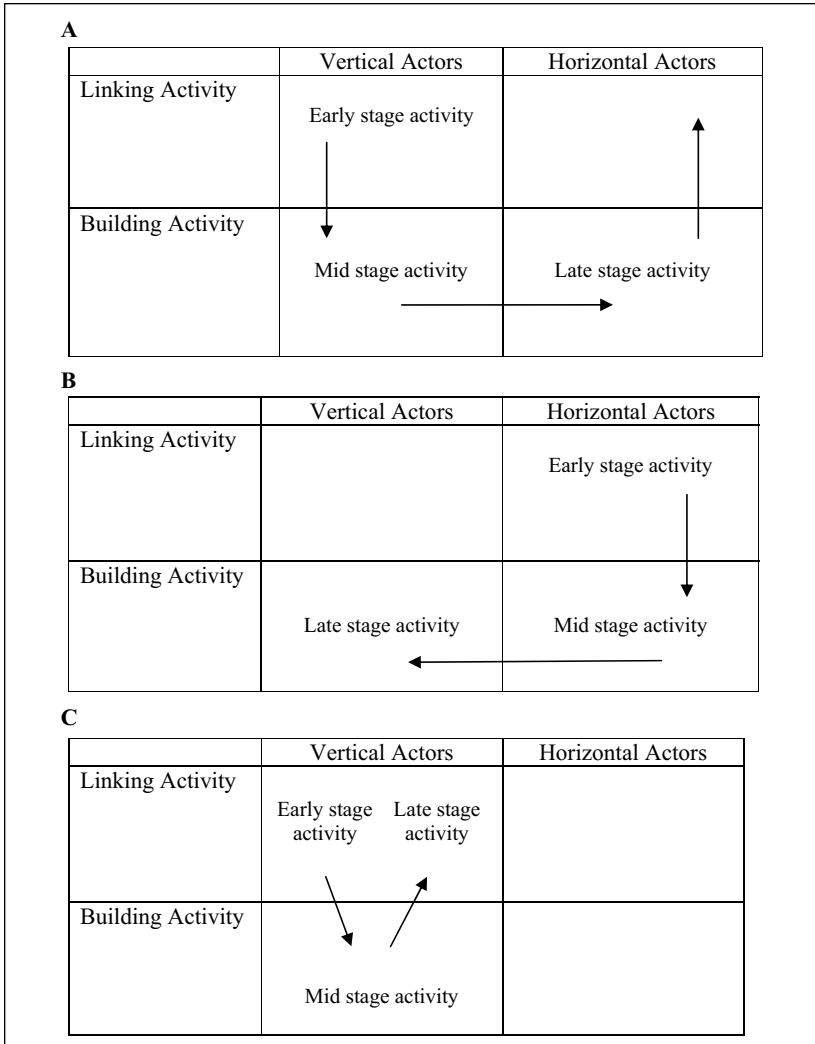


Figure 2. A. Inside-out sequence of boundary spanning; B. Outside-in sequence of boundary spanning activity; C. Staying-inside sequence of boundary spanning activity.

The inside-out sequence. In the *inside-out* (see Figure 2A) pattern, teams moved from interacting with the more immediate administrative environment of vertical actors toward more distal horizontal relationships. These teams

initially engaged in *linking activities with vertical actors* by adopting goals and structures based on the broad mandate of the university or CES administration. However, these teams quickly recognized the need to change their way of operating, and therefore engaged in *building activities with vertical actors* and then *building activities with horizontal actors* to better meet the team's and the external actor's needs. For example, the Dairy COT reached out to members of the university beyond those specifically assigned to work on the team, to understand how the university's needs might change in the future. One Vegetable COT member, a university faculty member, explained how the team connected to horizontal actors' goals by providing support and guidance to industry groups:

You have industry people come with the brush fire problems and want an immediate response to that particular need or concern . . . you don't want to fail to work with them, and help give them some support and maybe guidance. Sitting down with [industry] is also an engine to help us direct our research activity and extension programming to help the industry group. (Vegetable team member)

These teams subsequently moved away from the hierarchy of the host organization by engaging in *linking activities with horizontal actors*—for example, wholly adopting the goals of industry groups.

The outside-in sequence. In the *outside-in* (see Figure 2B) sequence, teams began by interacting with horizontally connected field actors and then moved toward vertical relationships, in a similar but parallel sequence to the *inside-out* teams. The key difference was that the initial locus of attention was on *linking activities with horizontal external actors*. One member of the Economic Development COT described how they used *linking activities with horizontal actors* by holding a meeting to better understand their goals:

I believe the norm that is emerging in terms of this COT is to create events that will involve the stakeholders . . . in the spring we will host a meeting where we will be inviting a number of our stakeholders for . . . an issue summit. (Economic Development team member)

COTs following this sequence then engaged in *building activities with horizontal actors* by changing horizontal actors' processes and practices. For example, the Economic Development COT developed working groups to address the needs of different stakeholders, like civic organizations and community groups. Next, they engaged in *building activity with vertical actors* by developing university and CES administrative practices and structures in a

way that would work for the team. For example, teams changed the CES team structure by empowering sub-groups that were aligned with field stakeholders to make decisions and take action. Like the *inside-out* sequence, this sequence helped COTs to successfully locate themselves in the contexts of both vertical and horizontal stakeholders.

The staying-inside sequence. In the third sequence, which we label *staying-inside* (see Figure 2C), the COTs' activity remained located on vertical actors within the host organization. Just like the *inside-out* sequence, in the *staying-inside* sequence, COTs focused first on *linking activities with vertical actors*, adopting the structures and processes of those actors. Furthermore, in instances where the team recognized that administratively designed structures or processes were not functional for them, they turned to *building activities with vertical external actors*.

The critical point of departure of the sequence from those of the other teams occurred at this point. COTs stopped *building* activities with external actors, but instead of engaging with horizontal external actors, they returned to *linking activities with vertical actors*. For example, the Home and Housing COT attempted to build stronger personal relationships with researchers and others on the university campus. The Environment COT similarly changed its name to match those of others within the CES—in response to the frustration with the team's inability to get traction and recognition from administration.

Sequences of Boundary Spanning and Team Effectiveness

To explore how different sequences of boundary spanning activity related to the overall effectiveness of the COTs in our study, we considered whether differences in effectiveness existed across COTs using different sequences. We took a strategic contingencies approach to assessing the effectiveness of the COTs based on widespread agreement of the extent to which a team was producing acceptable outcomes (cf. Pfeffer & Salancik, 1978). Specifically, we asked four senior CES administrators who supervised the teams to rate the effectiveness of each team using a one-item quantitative Likert-type scale from 1 to 9, with 1 = *abject failure to meet expectations* and 9 = *meets or exceeds all expectations*. This measure therefore reflected the extent to which the teams were widely viewed as effective within the CES, a measure which may incorporate, but is not limited to, task performance. These supervisors all ran significant parts of the organization, including direct supervision of or engagement with the COTs in this study. Each supervisor therefore had some working knowledge of all of the teams. All four supervisors rated each of the

four teams, demonstrating a high level of reliability with a Cronbach's alpha of .90 ($p < .01$) between their four sets of ratings.

To further validate the measure of effectiveness (Jick, 1979), the second author met with the chief executive of the CES to discuss the supervisors' evaluations of the teams and he agreed with the relative rankings of more and less effective. In addition, as researchers, we formed an impression of the functioning of each team during our reflections on interviews with team members. Our impressions were also consistent with the supervisors' ratings. For example, members of teams who received low ratings tended to describe poor team communication and failure to make progress on goals, whereas members of teams who received high ratings tended to describe pride in the team's accomplishments. An average effectiveness rating of each team was calculated by averaging the four supervisors' ratings. We then averaged the supervisors' average rating across all of the teams who followed a given sequence. For example, the Fruit, Vegetable, Dairy, and Crop teams all followed an *inside-out* sequence, so we averaged the supervisors' ratings across the four teams to obtain an average effectiveness rating for the *inside-out* sequence. Teams using an *inside-out* sequence and teams using an *outside-in* sequence performed well, with average effectiveness ratings of 6.2 out of 9 and 6.75 out of 9, respectively. In contrast, the teams following the *staying-inside* sequence performed poorly, with an average effectiveness rating of 3.9. While we do not intend to make definitive claims about effectiveness differences across the three sequences, we suggest that following an *inside-out* or *outside-in* sequence provided the teams with some benefits. We therefore build theory to elaborate a process model for building external relationships through these two sequences.

Toward a Theory of Team Boundary Spanning in Multi-Organizational Contexts

Our empirical findings revealed that teams followed different sequences of boundary spanning activity. Interestingly, despite their focus on vertical actors, teams following the *staying-inside* sequence were rated more poorly by those actors than were teams who engaged more broadly. Given the competing demands of different stakeholders (J. N. Choi, 2002), we might have expected that interacting with only one external actor would allow teams to focus on that relationship. However, we did not observe such a trade-off.

We integrate our observations of the sequences and their relationship to team effectiveness with theory to explain how and why the *inside-out* and *outside-in* sequences of boundary spanning activity may have benefited team

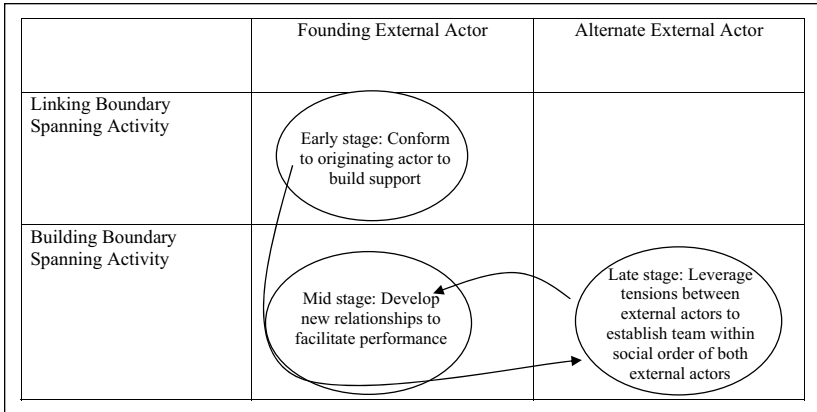


Figure 3. Model of the sequence of boundary spanning activity.

effectiveness. Specifically, we develop an emergent model to provide a tentative theory of how the process of boundary spanning influences team effectiveness. The model is illustrated in Figure 3.

The key insight of the process model is that a team's initial boundary spanning activity influences the future path through which teams navigate their environment, because ultimately, teams synthesize the tensions between actors and boundary spanning activities. We draw on the dual functions of boundary spanning activity—that is, providing information and resources to improve task performance and building support with external actors (Marrone et al., 2007)—to elaborate on the boundary spanning process and its effectiveness.

Differentiated Roles of Boundary Spanning Activities

We suggest that *linking* and *building* activities fulfill different roles for teams. *Linking* activities can help a team to represent itself effectively to external actors. Mirroring the processes, structures, or practices of an organization where a team is formed is a useful initial tactic for a COT to be seen as legitimate and acceptable (Tracey, Phillips, & Jarvis, 2011), because it implies that a team is considered part of the structural arrangement of an organization (Scott, 2007). In contrast, we propose that *building* activities are instrumental for enabling the teams to perform their task effectively. Teams need to develop their own processes and structures, such as including new members or alternative authority structures (e.g., H. S. Choi & Thompson, 2005; Klein, Ziegart, Knight, & Xiao, 2006) to achieve fundamentally new goals (Benner

& Tushman, 2002; Dougherty & Heller, 1994). *Building* activities therefore enable teams to develop new instrumental relationships with actors. In this sense, building activities are akin to boundary shaking (Balogun, Gleadle, Hailey, & Willmott, 2005); that is, they involve re-shaping the team's external boundaries.

We also suggest that relationships with horizontal and vertical actors provide different benefits to teams. Vertical actors can endorse the team, helping it to become viewed as appropriate within the value system of the social structure (Scott, 2007). This may enable the team to access resources (Ancona & Waller, 2007; Zimmerman & Zeitz, 2002), given that, as the administrative home for a team, vertical actors are most likely to have resources allocated to support the team. In contrast, relationships with horizontal actors help others to understand the team (Scott, 2007). Horizontal actors are closely aligned with the team's actual work in a way that vertical actors are not, so they can communicate the team's meaning and purpose. They may also be better placed to provide teams with the information and expertise necessary to complete their tasks, as these are likely to be distributed across units of an organization, and across multiple organizations (Ancona & Caldwell, 1992; Cummings, 2004).

Sequences of Boundary Spanning Activity

Based on the above arguments, we suggest that different paths of boundary spanning also shape teams in different ways. We argue that early stage boundary spanning activity represents a choice by a team about the nature of its founding context, establishing one type of external actor as the founding actor for the team. The founding actor molds a team's purpose and its relationship with and support from the environment (Boeker, 1989; Galunic & Eisenhardt, 1996). Building legitimacy with external actors is therefore important in the early stages of a team's activity, when it is likely to be confronted by the liability of newness (Stinchcombe, 1965) and unlikely to have support from all of the actors in the environment. We suggest that *linking with vertical external actors* establishes a team's place within a social structure, making the vertical actor a team's founding actor, while *linking with horizontal external actors* improves external actors' understanding of the team, and makes the horizontal actor the team's founding actor.

Proposition 1a: Early stage linking activity with vertical external actors establishes the team in the social structure.

Proposition 1b: Early stage building activity with horizontal external actors improves external actors' understanding of the team.

While early stage *linking* activity draws on the resources of an external actor or helps define a role for the team within the broader environment, imprinting its initial strategy in this way also constrains the team's future activities because it determines external actors' expectations about a team's role and goals (Dougherty & Heller, 1994; Galunic & Eisenhardt, 1996). However, as accomplishing a team's mandate often requires reaching beyond a single organization, a team may need to break these expectations to successfully complete its task. We therefore suggest that during mid-stage interactions, *building* activity helps the team to define a new relationship with the external actors with whom it has first established legitimacy (i.e., the founding actor), and in doing so, can organize the team to meet its unique goals.

Proposition 2: Mid-stage building activity with the external actor to whom the team first linked (the founding actor) enables it to develop processes and practices to meet its goals.

The sequence of activities described so far creates two challenges for teams. First, by focusing on one external actor, other external actors may not view themselves as part of the team's environment. Second, while *building* activity serves the instrumental purpose of enabling the team to complete its task effectively, the more the team alters its processes and structures to be able to innovate, the less it conforms strictly to an existing actor's expectations, and therefore the less legitimate it may appear to that actor (Arndt & Bigelow, 2000). The team therefore risks losing its founding support.

We suggest that late-stage *building* activity with an alternate external actor enables a COT to overcome these challenges. This was a critical point of departure of the *inside-out* and *outside-in* sequences we observed. *Building* activity with an alternate external actor enables teams to establish the legitimacy of their newly formed practices with the actor to whom the team first linked and to build a relationship with other external actors. The need to interact with other external actors provides a justification for the team's changing relationship with the original external actor that it linked to. Conflicts in the assumptions, values, and goals of actors in a team's environment are likely to exist (Denison, Hart, & Kahn, 1996). In one sense, reconciling these conflicts by meeting the needs of multiple actors is the reason the teams exist; these conflicts therefore provide an opportunity for a team (Benson, 1977). By *building* with other external actors, a team can capitalize on the inconsistency created by the conflict between actors to build and retain legitimacy. In this way, iterating between the practices and

structures of different external actors allows teams to leverage and synthesize conflicting interests.

Proposition 3: Later stage building activity with an alternate external actor enables teams to build and retain relationships with both actors.

In sum, this sequence of boundary spanning activity enables a COT to both meet the instrumental needs of the task and satisfy the expectations of external actors to access resources and support. We therefore tentatively suggest that COTs who follow this sequence of boundary spanning activity will be more effective.

Contributions and Implications

Our study provides an empirically grounded sequence through which COTs interact with multiple external actors, and a theoretical model that explains how this sequence may relate to team effectiveness. As with any study, there are reasons to exercise caution. While the number of teams in our study compares favorably with similar qualitative studies of team processes (e.g., Ancona, 1990; Ericksen & Dyer, 2004; Gersick, 1988; Goh, Goodman, & Weingart, 2013), our findings may not generalize broadly to all teams. Our study is set in an extreme example (Bamberger & Pratt, 2010) of cross-organizational collaboration, and teams that draw on members entirely from a single organization may not exhibit the same processes. In addition, several of the teams in our study are relatively large, which may influence their effectiveness. However, their size is consistent with that of other teams responsible for complex, cross-functional work presented in the literature (e.g., Cohen & Bailey, 1997; Gibson & Gibbs, 2006; Hirst, Van Knippenberg, & Zhou, 2009). An additional limitation is that we used a global measure to capture COT effectiveness, and did not evaluate the performance of each specific activity of each team. COTs in our study may have been more or less effective at pursuing different boundary spanning activities. Similarly, some stages of this sequence may be more critical to success than others. However, the fact that more and less successful teams pursued different patterns of boundary spanning activity is itself insightful. A final limitation is that for one team, Family Development, we were not able to obtain interviews with both horizontal and vertical external constituents. We do not believe that this significantly biased our results, because the Family Development team exhibited a similar process to three other teams from whom an equal portion of informants

were drawn from each constituent. Despite these limitations, we believe our research provides three insights into team boundary spanning, which we elaborate below.

Understanding Team Boundary Spanning in Multi-Organizational Contexts

Consistent with previous research (Ancona, 1990; Ancona & Caldwell, 1992; Marrone et al., 2007), we found that COTs engaged actively with external actors and those who engaged with both horizontal and vertical actors were more effective. This lends support to a synergistic view of team activities in which external activity enhances internal team processes and vice versa (Bresman, 2010). We suggest that interacting with multiple external actors enhances the effectiveness of boundary spanning activity.

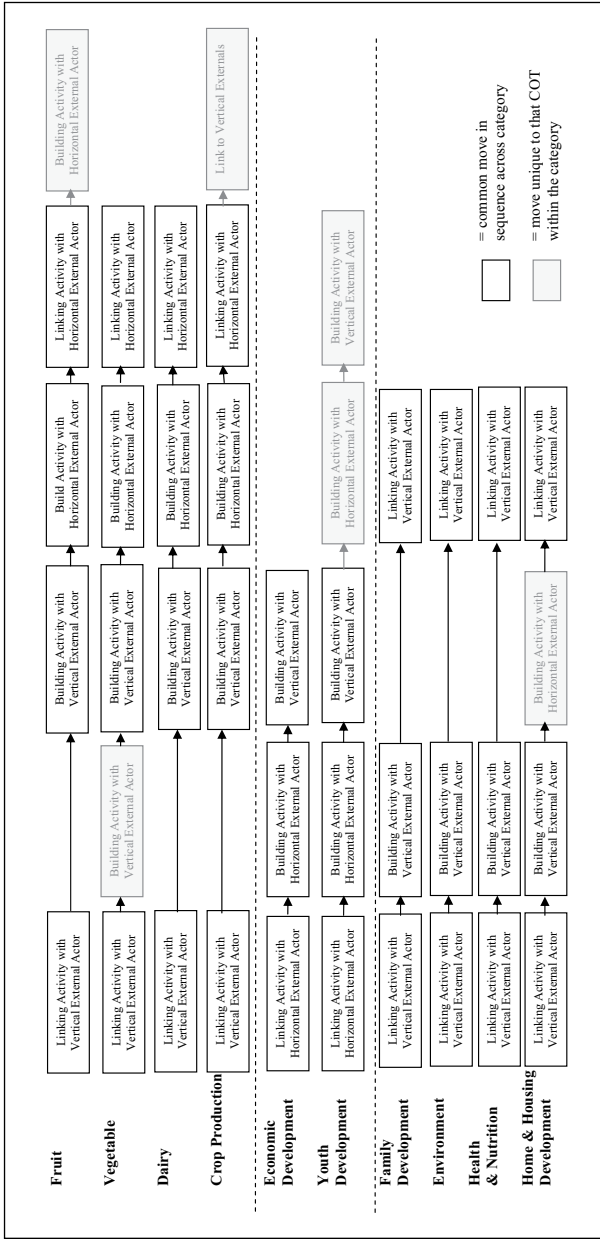
Our results go beyond existing literature in three ways. First, we suggest that the sequence in which COTs engage with different external actors over time could be critical to achieving this synergy. In particular, *linking* and then *building* activity with one focal actor, followed by *building* activity with another actor enables a team to capitalize on a well-developed relationship with the focal external actor. Moving from a founding actor to an alternate actor in the mid-stage of a team's development may not produce the same benefit to team effectiveness, because the team has not yet developed processes and practices for task fulfillment at that stage. Our model also emphasizes the importance of early stage boundary spanning activity for determining a team's path for navigating the external environment.

Second, whereas previous research on team boundary spanning emphasizes the importance of a team's active engagement with the external environment (Ancona, 1990), in our study, boundary spanning activity was both self-determined and constrained by the environment (Zeitz, 1980). In our model, interacting with multiple external actors is *necessary* for a team to be effective. Specifically, it is the tension between external actors that provides opportunities for COTs to reap the benefits of boundary spanning activity by synthesizing these tensions (Benson, 1977). When teams interact with only one external actor, there is no conflict and, therefore, no valid opportunity to change the team to make it more effective. Our study suggests that not all opportunities that a team finds in the environment are equally valuable. Rather, only by pursuing the opportunities created by the dialectic tension between organizations in the environment will teams be able to benefit from the two functions of boundary spanning—achieving legitimacy and support from external actors, and learning from external actors to improve task performance.

Finally, our research suggests that COTs, which do not exist within a single organization, can develop in different ways to more traditional team forms. Particularly surprising in our study was that two of the teams' early interactions were with external actors outside the host organization with whom the teams did not have a formal reporting relationship. This challenges the conception of the paradigmatic social psychological team as an entity that is simple, self-contained, and internal to the organization (i.e., largely functioning as a closed system). That conception fit well with teams in organizations that were designed by a manager for ongoing work or to complete a project (Cohen & Bailey, 1997). However, many contemporary teams are complex, open systems (Putnam, Stohl, & Baker, 2012) that incorporate members from multiple organizations or geographically dispersed regions (Anand & Daft, 2007; Rockman et al., 2007; Wageman et al., 2012). It is only by studying this relatively new organizational form that the findings discussed above are revealed. Our research therefore demonstrates the value of studying emerging team forms.

Appendix

Boundary Spanning Activities by Case.



Declaration of Conflicting Interests

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Note

1. This definition incorporates task performance, in that teams who perform tasks well should be recognized as effective. However, the definition also incorporates other factors that may enable a team to be judged as effective, such as the visibility of the team's performance.

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