



Notes and debates

Taking the leap from dyads to triads: Buyer–supplier relationships in supply networks

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ABSTRACT

A network is made up of nodes and links. The smallest unit that consists of both these network elements is a dyad made up of two nodes (a buyer and a supplier) and the link that connects them (a buyer–supplier relationship).

Naturally, the focus of the supply chain management literature has been on this dyad. For instance, a buyer affects a supplier through its supplier evaluation and certificate programs, as well as long-term agreement practices. The relationship between a buyer and its supplier has been characterized as cooperative or adversarial. We have learned a great deal about supply chains through such studies in dyadic context.

However, we submit that in a network, a dyad is *not* the smallest unit of a network. In fact, the smallest unit is a triad, made up of three nodes and the links that connect them. If so, how would this recognition guide us as we move forward to investigate supply chains as a network? What would be its implications to the genre of the literature on buyer–supplier relationships?

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1. Triads and network

In order to capture the essence of a network, two things must be examined, at a minimum: how a *node* affects another node and how a *link* affects another link. The smallest unit of network arrangement where this occurs is a triad. As shown in Fig. 1, in a triad, we have a network arrangement where we can study a node affecting a node (e.g. A affecting B or C) and a link affecting a link (e.g. AB affecting AC or BC). A dyad shows how a node affects another node, but it is not able to address how a link may affect another link. In this regard, it is the triad that captures the basic essence of a network and allows us to study the behavior of a network.

To the best of our knowledge, Simmel (1950), a philosopher and sociologist, was the first to contemplate the difference between a dyad and a triad. One of the notable scholars that has extended Simmel's work is Caplow (1959, 1968). In his book, *Two against One: Coalitions in Triads*, Caplow studies the triadic dynamics exhibited in *Hamlet* by Shakespeare. The predominant dyad in that story occurs between Claudius (the king) and Gertrude (his wife and Hamlet's mother). Hamlet appears as an isolate until he connects with

his mother, who is now informed of the truth about the murder of his father. She utters the following words:

“O Hamlet, speak no more:

Thou turn'st mine eyes into my very soul;

And there I see such black and grained spots As will not leave their tinct.”

With these words, a new coalition is formed and enters a triad. As per Fig. 1, A and B represent Hamlet and his mother, respectively, while C represents the king. The relationship exists between A and B (son and his mother in a new coalition) and B and C (the queen and the king bound by new marriage). As Claudius plots the murder of Hamlet, B now covertly comes to Hamlet's aid. When Hamlet remained as an isolate, the relationship dynamics were much simpler—a dyad and an isolate. Once the triad is formed, complexities multiply and take on the network characteristics.

Such triadic dynamics extend beyond the individual level toward larger organizations and even nations. Simmel (1950) and other scholars that wrote about Simmel (e.g., Caplow, 1959, 1968; Mills, 1954, 1958) have explicitly pointed out how such triadic dynamics scale to large social entities. Political scientists have explored US–China relations during the cold war, for instance, in the context of third parties such as Taiwan, Japan, or the Soviet

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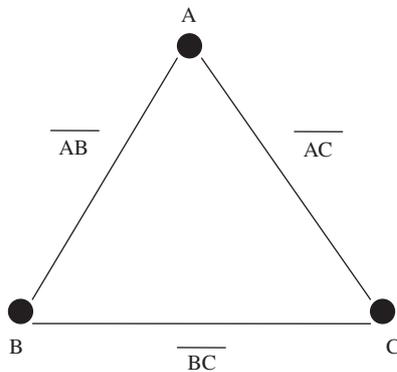


Fig. 1. Triad.

Union. As supply chain researchers, the level of analysis that matters to us would be firm-level relationships.

Simmel and other scholars have explicated the importance of studying the triads while pointing out the inadequacies of the dyads. In a dyadic framework, the focus is on the relations specific to a pair of firms. Such relational context turns a blind eye to the fact nodes are embedded in a larger supply network—the dependency of one firm on the other is contingent on the availability of the alternative third firm (Cook, 1997; Cook et al., 1983; Davis, 1963). Therefore, while a dyadic framework allows us to describe the interaction between two firms, it cannot fully account for the relational behaviors of the two firms embedded in a network (Wasserman and Faust, 1994).

Therefore, to fully interpret the relational behavior of a firm, we need invariably to look beyond the dyad for answers. As the next logical step after having studied dyadic buyer–supplier relationships for several decades, a *triadic* relationship consideration becomes imperative to further understand the buyer–supplier dynamics in supply networks.

2. Examples of emerging OSM studies in triadic context

We offer four examples of triadic studies from recent publications (Choi and Kim, 2008; Dubois and Fredriksson, 2008; Rossetti and Choi, 2005, 2008; Wu and Choi, 2005). In their study of industrial networks, Smith and Laage-Hellman (1992) presented three triadic network conditions: (1) one buyer interacting with two suppliers; (2) a supplier interacting with an intermediary and an end user; and (3) one supplier interacting with two buyers. In this regard, the examples from Wu and Choi (2005) and Dubois and Fredriksson (2008) align with the first condition; the examples from Rossetti and Choi (2005, 2008) correspond with the second condition; and the examples from Choi and Kim (2008) fall under the third condition.

Wu and Choi (2005) studied supplier–supplier relationships in the triadic context of the buyer–supplier relationship. Referring back to Fig. 1, A would be the buyer while B and C would be the competing suppliers. Their study focused on creating the archetypes of supplier–supplier relationships or BC in Fig. 1.

The underlying assumption was that the buyer, A, can influence BC with varying levels of success. The focus is on how a node can affect a link it is not directly connected to. Such study is possible in a triad, while it is not in a dyad. Wu and Choi (2005) offered an example of a buying company called Coach encouraged its two suppliers to forge a relationship. Coach wanted its two suppliers to work together to share capacity and capability to meet its performance requirements. Both suppliers collaborated

because they would earn “bonus points from the buyer.” Wu and Choi offered a second example of a buying company called Mediator. In this case, much to the dismay of this buying company, the two suppliers refused to work together. The illustrations of these two buying companies began to capture the relational dynamics of the supplier–supplier relationship as a link indirectly connected to the buyer.

Dubois and Fredriksson (2008) identified a particular type of sourcing called “triadic sourcing.” This sourcing strategy occurs when a buyer works with two suppliers with overlapping capabilities. Rather than imposing a sourcing strategy separately for each supplier, a buyer creates a bundled strategy for two closely-coupled suppliers. The authors articulated how one observes “a shift in the focal unit of analysis from two dyads handled separately to one triad consisting of three connected relationships” (p. 171).

They offer a case example of Volvo–JCI–Lear triad, where Volvo sources seats from JCI and Lear. In Fig. 1, A would be Volvo, the buyer, and B and C would be the suppliers, JCI and Lear. Volvo has fashioned a highly complicated and interdependent relationship between the two suppliers. Over the years, the sourcing strategy has evolved to a point where the working relationship between JCI and Lear is now so closely intertwined they must be considered together when Volvo discusses seat sourcing. For instance, both suppliers develop seats built on two platforms Volvo uses to manufacture seats, while JCI makes the front seats and both JCI and Lear make rear seats. In addition, the two suppliers have reciprocal relationships in which Lear assembles front seats for JCI and JCI assembles rear seats for Lear.

While Wu and Choi (2005) and Dubois and Fredriksson (2008) considered triads across two tiers of supply chain, Rossetti and Choi (2005, 2008) investigated a phenomenon that occurs across *three* tiers of supply chain. In this context, the buyer sits between its customer and its supplier, and the “supply chain disintermediation” occurs between the customer and the supplier.

Based on Fig. 1, A can be the buyer, while B may represent the buyer’s customer and C the buyer’s supplier. In a traditional relationship arrangement, there would be no link between B and C, and A would be in control of the materials and information flow between B and C. In network language, A becomes the *tertius gauden* that sits on a “structural hole” (Burt, 1992), referring to the lack of a direct relationship between B and C. However, because of a deteriorating relationship between A and C, C makes a strategic decision to sell directly to B, its buyer’s customer. Now, the intermediating authority of B has been undermined, and supply chain disintermediation occurs. The structural hole has now been filled, and the mediating network position of A is no more.

Lastly, Choi and Kim (2008) introduced the importance of “structural embeddedness” (Granovetter, 1995) when considering a buyer–supplier relationship. The smallest network unit where the structural embeddedness can be studied is a triad—the buyer–supplier dyad is embedded in a triad where the third node can be another supplier, buyer or the buyer’s customer.

When evaluating a supplier, the buying company often considers its performance in isolation. The buyer studies one supplier at a time often visiting each facility to measure performance. However, a supplier rarely exists in isolation, and if so its performance can be considered only by understanding how it is embedded in its own network. One example Choi and Kim offered is a successful auto company lamenting the worsening financial condition of one of its major suppliers. Ironically, the poor financial situation at this supplier was caused by the failure of one of its other major customers, who is this successful company’s major competitor. Based on Fig. 1, A could be the successful buyer, while B is the supplier and C is the unsuccessful

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