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Abstract
Companies seeking higher levels of innovation have focused on ways to advance Buyer-Supplier relationships in terms of knowledge exchange. Building from theories of Transactional Cost and Social Exchange this paper proposes a theoretical framework indicating that only under a balanced power position will the actual innovative knowledge exchange take place.

Keywords
Buyer-Supplier Relationships, Supply Chain Power, Knowledge Exchange.

Introduction
The core of achieving a successful supply chain is through the effective management of buyer-supplier relationships. In order to achieve a more sustainable and successful relationship, both buyers and suppliers need to realize the benefits they will gain from such a relation (Ambrose et al. 2010). McDonald (1999) presented the Buyer-Supplier Relationships in terms of a transactional-collaboration continuum (He et al. 2011; Chen and Fung 2013). Transactional relationship on one end represents the participation of buyers and suppliers in an “arm’s length relationship” (Gullett et al. 2009; He et al. 2011) characterized by short-term orientation, wide supplier-base, one-time specific transaction requirements, and a very low level of trust leading to close monitoring (He et al. 2011). On the other end of the continuum a collaborative relationship exists - denoted by partnership as the most collaborative form of exchange (Gullett et al. 2009; He et al. 2011) - and characterized by a high degree of trust and commitment, interdependence, balanced power, shared understanding, and higher rate of knowledge transfer and exchange among buyers and suppliers (He et al. 2011).

Theoretical Background
Two main theories have contributed to the understanding of the buyers-suppliers relationship. Transaction Cost Theory (TCT) (Williamson 1981; Hill 1990; Subramani 2004; Ambrose et al. 2010), and Social Exchange Theory (SET) (Hall et al. 1977; Cox 2004; Kingshott 2006; Narasimhan et al. 2009; Ambrose et al. 2010; Canon and Perreault Jr. 1999).

Neoclassical literature did not consider the existence of business relationships among firms during the exchange of products, that’s why it dealt with the transactions raised as if they appear in a frictionless environment (Coase 1937; Hobbs 1996). Transactions usually take place when there is a product or service exchange and transfer between separated boundaries (Williamson 1981). Frequency of transaction and durability of relationships were not given enough attention by the TCT researches and studies (Artz 1999; Rindfleisch and Heide 1997; Williamson 1981; Williamson 1979). However, Hobbs (1996: 20) stated that the frequency of transaction affects greatly the level of information shared, opportunistic behavior, and consequently the type of governance structure. It is argued that the less frequent the transaction is between buyers and
suppliers, the more opportunism, the lower level of information shared among them, and the more the governance structure is towards complete vertical integration. But what is missing during this discussion is the reflection of the preferences of the other transaction partners, mutual benefits and value gained, and the exploration of shared interests among the transaction partners (Zajac and Olsen 1993), and consequently the “How” term of achieving a successful cooperative inter-organizational relationship is not reflected through TCT (Zajac and Olsen 1993; Ambrose et al. 2010). Therefore, the incomplete discussion of the inter-organizational relationships within the TCT drove the research towards the social exchange theory as a complementary theory for the explanation of buyer-supplier relationships (Artz 1999; Ambrose et al. 2010).

The Social Exchange Theory is considered a building block in the explanation of the inter-organizational relationships (Hall et al. 1977). The exchanged resources within the interactions between individuals and/or organizations can be tangible (such as: products and funds) (Lambe et al. 2001) or intangible ones (such as: friendliness and information) (Lambe et al. 2001; Popo and Zenger 2002). The exchange strategies can be illustrated using the discrete-relational continuum presented by Macneil (1980). The continuum is with a discrete arm’s length exchanges (relationships and transactions) at one side and close-relational exchanges at the other (Fink et al. 200; Rokkan and Haugland 2002). The concept of the discrete exchanges is basically dependant on the neoclassical economic theory (Rokkan and Haugland 2002) as it can be defined as one-time economic-based exchange of resources with little or no social interaction (Fink et al. 2006). Therefore, the arm’s length discrete exchanges are characterized by individualism (Fink et al. 2006) where each of the interacting organizations focus on achieving their own personalized goals, decision making and problem solving regardless that of the partner (Fink et al. 2006; Wuyts and Geyskens 2005). On the other hand, the close relational exchanges appear when buyers and suppliers engage in long-term cooperative relationships. This type of exchange - where economic exchanges take place within social relationships- (Fink et al. 2006) encourages collectivism where the interacting organizations promote joint decision making and problem solving, while collectively achieving goals (Wuyts and Geyskens 2005). This requires high degree of trust and commitment among organizations, whilst the recognition of the mutual interests, joint planning of processes, and sharing the benefits and losses (Fink et al. 2006). Relational norms include factors such as trust (Pantnayakuni and Seth 2006; Griffith et al. 2006; Popo and Zenger 2002; Lambe et al. 2001; Jap 1999), frequency of communication (Pantnayakuni and Seth 2006), long-term orientation (Griffith et al. 2006; Pantnayakuni and Seth 2006), information exchange, dependence (Pantnayakuni and Seth 2006), commitment (Terawatanavong et al. 2006; Lambe et al. 2001), and power (Griffith et al. 2006; Chen and Choi 2005). According to Zaho et al (2008) trust, commitment, and power are considered main building blocks in SET. Since SET preferably manages any relational exchange with relational norms rather than contracts, then trust should exist among organizations (partners) of the exchange (Lambe et al. 2001).

Social Exchange Theory gives great attention to power, especially in supply chain researches as they consider power as an important factor affecting the inter-organizational relationships within supply chains (Narasimhan et al. 2009). According to SET, power can be defined as the control and effect a supply chain entity (or an exchanging organization) has over the behaviors and decisions of other persons, groups, and/or organizations (Narasimhan et al. 2009; Griffith et al. 2006). Powerful organizations consider the exchange as the method through which more social credit can be built and the abidance of others to the relationship can be ensured (Griffith et al.
Cook (1977) added that the type of inter-organizational exchange is highly influenced and determined by powerful organizations (in terms of resources ownership). Discrete exchanges resulted from power imbalances between buyers and suppliers lead them to manage and govern their relationship through contractual agreements. While the relational exchanges that promotes buyer-supplier collaboration and cooperation, occur as a result of power balance and symmetry among organizations (Strutton and Pelton 1994). The closer and more collaborative buyer-supplier relationship will help in reducing the degree of uncertainty (environmental uncertainty by flexibility while the high frequency of communications lessen the behavioral uncertainty) (Wuyts and Geyskens 2005) and also allow suppliers not only to develop their processes and customize their products according to the buyer’s desire but also to share their knowledge for better performance (Fink et al. 2006).

**Power in Supply Chain Networks**

Power is considered the heart of the supply network that has a great effect on the strategic decisions, resources, the interdependencies, activities performed, and consequently the type of relationship created among the SC entities (Kahkonen and Lintukangas 2010). Power can be illustrated as the capability of one of the supply chain or network entities to affect another’s intention and control its decisions, behavior and actions (Bastl et al. 2013; Kahkonen and Lintukangas 2010; Maloni and Benton 1999).

Each organization in the supply network –either a buyer or supplier- has its own power position. The power position reflects the role of each organization and the type of relation it is engaged in with other entities in the supply network (Kahkonen and Lintukangas 2010). It is argued that, the power position of an organization is determined based on the ownership to scarce resources – valuable, rare, inimitable, and non-substitutable resources-such as unique capabilities, assets, processes, knowledge, and etc. (Bastl et al. 2013). The organizations are seeking to increase their value and sustain business success, through the clarification of their power position in contrast with others in the supply network (Cox 1999). This power position of the network entities is determined according to the managed resources, the knowledge owned, and the activities performed by each of them (Kahkonen and Lintukangas 2010). According to Kahkonen and Lintukangas (2010) there are three power position structures: buyer dominance, balanced power, and supplier dominance.

*Power Dominance “Asymmetric Power”*

Cox (1999) called the domination and control of a supply network entity (either supplier or buyer dominance) over the key value-creating resources as “structural dominance”. This structural dominance will result in a power imbalance or what is called “asymmetric power” where one organization is dominant over and influences the weaker dependent entity (Hoejmose et al. 2013). During the buyer power dominance, the supplier will be the dependent entity (Hoejmose et al. 2013; Caniel and Gelderman 2007) which will consequently maximize the benefits gained by the buyer from the dependent supplier. When buyers or suppliers are having power dominance within the network; they are more towards a transactional relationship where knowledge is difficultly shared among them (Kahkonen and Lintukangas 2010: 61-64).

If supplier or buyer is the main source of knowledge within the network, therefore it will be having more power dominance and privilege over the other party. In this case, the entity having
power dominance will be reluctant to engage in a more collaborative relationship except if the other party has a significant resource that will benefit the dominant entity’s products or processes (Kahkonen and Lintukangas 2010). Maloni and Benton (1999) argued that SC coordination and SC integration are the two types of B-S relation that can be created during the power imbalance or structural dominance. It is also stated that the power dominant entity is not only capable of creating an effectively integrated SC but also improve the position of itself and the whole SC among others within the same industry (Caniel and Gelderman 2007; Maloni and Benton 1999). This will consequently promote power to be a performance enhancer for both the power dominant entity and the overall SC as well (Maloni and Benton 1999). It is argued by Caniel and Gelderman (2007) that power imbalances will result in a poor and unproductive partnership between buyers and suppliers. This is due to the dominance of power of one entity over the other that will lead to more conflicts, lower level of cooperation, and consequently destroyed partnership.

Balanced Power “Symmetric Power”
On the other hand, the balanced power structure is known by Hoejmose et al. (2013) as “symmetric power” or “joint dependence”. In this structure both buyers and suppliers are having equal power and dependent on each other (Hoejmose et al. 2013; Caniel and Gelderman 2007). This balanced power will lead to a more stable long-term inter-organizational relationship based on trust and commitment. Also it will result in a better exchange of resources, improved product quality, design and development, minimization of lead time, delivery dates and overall costs, and consequently it leads to a reduction of SC risks (Hoejmose et al. 2013; Caniel and Gelderman 2007). This will encourage organizations to create more collaborative relationships (integration and partnership), and/or strategic alliances (Hoejmose et al. 2013; Kahkonen and Lintukangas 2010; Caniel and Gelderman 2007). Therefore, it is concluded that the extent of power affects greatly the type and strength of relationship between buyers and suppliers (Kahkonen and Lintukangas 2010; Maloni and Benton 1999).

Theoretical Framework
This study identifies four categories of B-S relationships among the transactional-collaborative continuum, and differentiates between them with respect to trust, frequency of communication, size of supplier base, duration of relationship, level of supplier involvement, and degree of information exchange (Chen and Paulraj 2004; Rajagopal and Rajagopal 2009; Gullett et al. 2009).

Arm’s Length:
Arm’s length relationship is a short-term relationship that requires low involvement, lower level of communication, less trust and more independency between SC buyers and suppliers (Gadde and Snehota 2000; Dubois and Gadde 2000; Childerhouse et al. 2013). Under this type of relationship, buyers usually carry a large base of suppliers, where the choice between them will be based on the cost offered for each transaction separately (Cox 2004; Gadde and Snehota 2000;
Within the arm’s length relationship there is no strong interaction between supply chain entities, where as each organization builds its own knowledge base, decisions, and focus without considering others (Squire et al. 2009; Childerhouse et al. 2013). As result, both the buyers and suppliers usually face conflicts, process mismatch, and waste of resources raising the levels of both risk and uncertainty for both of them (Hoyt and Huq 2000), making the possibility of mutual trust between buyers and suppliers in arm’s length relationship a challenge (Maheshwari et al. 2006). Under this type of buyer-supplier relationship only basic information about customer orders is shared (Childerhouse et al. 2013), and the strength and duration of the buyer-supplier relationship will directly impact the level and type of knowledge shared between organizations (Squire et al. 2009).

**Coordination:**

Stump and Sriram (1997) stated that SC entities can go further from the arm’s length transactional relation to a stronger and closer type of relationship through IT investments that will depend on a smaller base of suppliers to deal with. Supply chain coordination can be defined as a performance improvement drive that redesign the rights of decision making, workflow, shared resources among supply chain entities (Simatupang et al. 2004). Sharing information and knowledge and the coordination between the interdependent value-creating activities –sales, production, and logistics- within and among organizations will help in improving customer satisfaction and enhancing the supply chain efficiency (Ton and Cross 2012; Soroor et al. 2009). Inter-organizational coordination is a comprehensive term that helps both buyers and suppliers through collective searching, analyzing, and performing supply chain practices to consequently enhance their collective capabilities and their SC focus. It also allows organizations to access various resources and share information which will consequently reduces the uncertainty and risk, enhances the visibility, and improves the overall SC performance (Ton and Cross 2012; Simatupang et al. 2002). Buyers will tend to relatively reduce their suppliers base and select only few qualified ones to coordinate with (Shin et al. 2000; Chen and Paulraj 2004; Chen and Paulraj’ 2004). Supplier-base reduction would result in more frequent communication, better information exchange, and a higher degree of trust between buyers and suppliers (Chen and Paulraj 2004; Chen and Paulraj’ 2004; Shin et al 2000). Longer relationships are usually created with a fewer number of suppliers, resulting in a more cooperated and coordinated buyer-supplier relationship, improvement in the supplier’s performance, and enhancement in the overall supply chain competitiveness (Chen and Paulraj 2004; Chen and Paulraj’ 2004). Coordination between the interdependent activities and units is required before any integration across the organizations’ operations takes place (Soroor et al. 2009; Simatupang et al. 2002; Simatupang et al. 2004).

**Integration**

For organizations to engage in inter-organizational collaboration, they have to build first a strong intra-organizational integration between its functions, departments and activities to form an internally single coordinated process (Ramanathan et al. 2011). The integration of the buyers and suppliers processes would result in SC uniqueness, creativity and success (Ramanathan et al. 2011; Lorentz 2008). Building collaborative buyer-supplier relationships in the form of integration necessitates a high degree of trust, commitment, and information sharing (Spekman et al. 1998). The better and more successful SC integration is, the more efficient and effective SCs are (Frohlich and Westbrook 2001). This takes place through communication and trust between the interrelated firms, synchronization of the information and materials flow between the SC
entities, and applying mass customization and delayed differentiation. Arrow (1975) argued that sharing information among the upstream and downstream firms is the main driver towards vertical integration. Strong commitment amongst all the members, information sharing and accessibility among SC members, and the identification of the target customers are main keys, requirements and steps toward achieving actual SCM integration (Lambert and Cooper 2000; Tan 2001). Supply chain integration generally – vertical, horizontal and lateral integration- is one form of collaborative buyer-supplier relationship that precedes partnership within SC relationships (Spekman et al. 1998; Soosay et al. 2008; Lorentz 2008).

**Partnership**
Supply chain partnership is a long-term, durable, and cooperative relationship created as a result of high frequency of communication, interactions, economical exchanges (Kotabe et al. 2003), and exchanged information (Yu et al. 2002) between buyers and suppliers. When buyers and suppliers are more towards repetitive long-term collaborative relationship a sort of partnership will be established among them (Kalwani and Narayandas 1995; Bechtel and Jayaram 1997; Maheshwari et al. 2006). Partnerships require higher level of trust and commitment among buyers and suppliers than that of the other forms of buyer-supplier relationships (Maheshwari et al. 2006). Maheshwari et al. (2006) stressed that buyers and suppliers in partnership are necessarily in need to invest in partnership specific-assets (warehouses, factories, specialized facilities...etc.). On the other hand, commitment plays an important role in encouraging buyers and suppliers to engage in innovative investments and improve their core competencies within partnership. The high degree of commitment in buyer-supplier partnership results in a reduced base of suppliers while raising their willingness towards having a more relational exchange rather than contractual agreements (Maheshwari et al. 2006).

**Knowledge Exchange**
As a benchmark in the identification of knowledge types, Byosiere and Ingham (2002) have classified the knowledge types into four main knowledge domains: Basic, Experiential, Creative/Emotional, and Innovative knowledge (Byosiere and Luethge 2008: 69; Luethge and Byosiere 2006: 217). Basic knowledge is general codified explicit knowledge that includes task or transaction specific knowledge, information technology (IT) knowledge, and macro-economic knowledge (Byosiere and Luethge 2008: 71 & 75; Luethge and Byosiere 2006: 217). Experiential knowledge is more related to tacit knowledge as it cannot be acquired except from direct learning and supervision of the experienced entity whether it’s an individual skill or organizational knowledge about a capability or certain experience and leadership knowledge (Byosiere and Luethge 2008: 71; Luethge and Byosiere 2006: 217). Creative/ Emotional knowledge is the knowledge generated from technical skills and intuitive knowledge it tends more to tacitness (Nonaka et al. 2000; Byosiere and Luethge 2008: 71; Luethge and Byosiere 2006: 217). Finally, Innovative knowledge is more complicated type of knowledge as it includes both tacitness and explicitness of knowledge. Therefore innovative knowledge is used within organizations strategically as a problem solving knowledge and methods/process knowledge (Byosiere and Luethge 2008: 72; Luethge and Byosiere 2006: 217).

**Relationship-Power- Knowledge (RPK) Model**
Buyer-supplier relationship used to be the soul of supply chain management. Most of the researches in this discipline focus on figuring out the type of relationship without presenting a
clear a buyer-supplier relationships continuum and also giving attention to the importance of discussing their relationships with power or knowledge management. Therefore, following proposed matrix (RPK model) will try to spot the light on one side of the interaction between the buyer-supplier relationships, power position, and knowledge management research areas. The matrix will discuss the relation between the buyer-supplier relationship and the strength of their relation in one side and buyer-supplier power position in the other side, while using the knowledge domains will act as a moderate for this relation.

Previous researches and literatures from Macneil (1980) passing by MacDonald (1999) till He et al. (2011) and Chen and Fung (2013) discuss the buyer-supplier relationships using a very loose buyer-supplier continuum with discrete arm’s length relationship in one extreme and relational collaborative relationship -said to be partnership by He et al. (2011) and Gullett et al. (2009) - on the other extreme. The problem in this continuum is that the graduation and progression from arm’s length to collaboration relationships is not clear discussed, resulting in a huge gap in understanding the buyer-supplier relationships. The proposed RPK matrix tried to dig into this area to get a more elaborate classification of buyer-supplier relationship and form a sort of an obvious buyer-supplier relationship continuum. The suggested buyer-supplier relationship continuum will include the following relations respectively Arm’s length, Coordination, Integration, and finally Partnership. The order of those relations is made according to certain buyer-supplier relationship characteristics that reflect the strength of relationship and consequently help in the graduation from one relationship to another within the continuum. The model will depend on seven buyer-supplier relationship characteristics in discussing the strength, classification, and graduation of relations within the continuum, which are: trust, commitment, frequency of communication, supplier-base reduction, long-term duration, supplier involvement, and information exchange.

The newly proposed buyer-supplier relationship continuum will begin with the arm’s length relationship at one end and partnership at the other like other researches. It is argued throughout the model that the coordination will follow the arm’s length relationship as the strength of buyer-supplier relationship increases. And since the buyer-supplier coordination precedes, in general, collaborative relationships (Ton and Cross 2012) and in specific the buyer-supplier integration (Soroor et al. 2009; Simatupang et al. 2004; Simatupang et al. 2002); therefore the model considers coordination as a transition between arm’s length relationship and integration in buyer-supplier relationships. Then comes the turn of integration, as it is argued to be the follower of coordination (Soroor et al. 2009; Simatupang et al. 2004; Simatupang et al. 2002), and the predecessor of partnership within SC relationships (Spekman et al. 1998). Therefore the model considers buyer-supplier integration as the transition between buyer-supplier coordination and partnership relationships. Finally, Partnership comes after the buyer-supplier integration and falls at the other extreme of the buyer-supplier relationship continuum, and is considered and treated within the RPK model as the most collaborative relationship and represents the end of the buyer-supplier relationship continuum.

The power position of buyers and suppliers within supply chain has a great effect on their relationships. The model will adopt the classification of power position presented by Kahkonen and Lintukangas (2010) as supplier dominance, balanced power, and buyer dominance. Basically, the effect of the buyers and suppliers power position does not occur except when they
start having a sort of cooperation between them (Maloni and Benton 1999; Hoejmose et al. 2013; Caniel and Gelderman 2007). For better explanation of the relation between the buyer-supplier relationships and power position; the four knowledge domains presented by Byosiere and Luethge (2008) -basic, experiential, creative, and emotional knowledge- will act as moderators. And based on the previously discussed power suggestions, the model will reflect the following arguments. Since the arm’s length relationships are based on one-time transaction therefore only weak relationship are created among buyers and suppliers. This will lead the buyers and suppliers regardless of their power position to share only transaction specific knowledge which is known as basic knowledge due to the risk of opportunism and uncertainty that might take place.

As the strength of the relationship increases and the buyer-supplier relationship turned to coordination the conditions of power will change and exchanged knowledge base as well. The interacting buyers and suppliers will have a sort of a more open communication in contrast with arm’s length but still limited one in comparison with integration and partnership. Therefore, they are encouraged to widen their base of knowledge shared, by start sharing experiential knowledge—as argued by Ton and Cross (2012) that they tend to share experience under buyer-supplier coordination- which might be affected by the power position in the relationship. With referral Kahkonen and Lintukangas (2010), power imbalance might lead buyers and supplier to switch back their relationship to arm’s length relationship. This is reflected clearly in the model at the buyer-supplier coordination stage, where at the extreme buyer dominance and supplier dominance the only shared is basic knowledge and experiential knowledge starts to appear gradually as the power position is towards the balanced state. This might be supported by the view of Maloni and Benton (1999) that within buyer-supplier coordination power position of both is enhanced to reach power balance.

For buyer-supplier integration the high levels of cooperation and high degrees of trust, commitment, and frequency of communication allow them to share and exchange a wider base of knowledge than basic and experiential knowledge. In addition, the high reduction of supplier-base and higher involvement in their product development will help integrated buyers and suppliers -with reference to (Hertz 2006; Tan 2001) - to apply mass customization and delayed differentiation. Therefore a more enhanced knowledge will be exchanged through integration (Soosay et al. 2008); that will be argued within this model to be it would be the creative knowledge. The same effect of power imbalances will be applied in the case of buyer-supplier integration, as the level of creative knowledge exchanged will increase as buyers and suppliers goes towards balanced power position. Finally and most importantly buyer-supplier partnership the most cooperative, long-term oriented, with highest degrees of trust and commitment, frequency of communication, and with very few qualified highly involved suppliers. All these characteristics helped buyers and suppliers who engage in partnership to exchange highly valuable knowledge that enable them to raise the level of innovation. Therefore it is argued that the valuable knowledge exchanged is the innovative knowledge. Since partnership pushes buyers and suppliers towards having balanced power position (He et al 2011), therefore it is argued that the innovative knowledge will be only exchanged in a balanced power position within partnership. Thus knowledge exchanged within partnership will be basic, experiential, creative knowledge that will gradually increase as they go towards balanced position, and innovative knowledge that will occur at balanced position.
References:


