Abstract code: 015-0949

Governance analysis and transaction cost in the relationship among companies

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POMS 21st Annual Conference

Vancouver, Canada

May 7 to May 10, 2010

Abstract:

Companies can take advantage of the characteristics of the relationship with their partners to plan the strategies and to reach better performance.

The paper shows and evaluates the structures of the existing types of governances found in the literature and it suggests the best one considering the transaction cost in a specific value chain as an example to improve the value chain.

One of the conclusions is that the governance structures evolve over the time according to the needs of the companies to create mechanisms to assist the coordination of the activities when they face uncertainties and risks.

The previous knowledge, understanding and correct application of the transaction cost and governance may bring sustainable competitive advantage to the whole supply chain

Keywords: Value chain, Governance, Transaction Cost

1. Introdution

The companies are seeking to maximize value among the several stages required to attend the customer needs. The company can no longer be viewed as a single entity, since the transactions are interdependent and interconnected, affecting costs and effectiveness of the entire network or supply chain (Slack et al, 2002, Chopra and Meindl, 2003; Gunasekaran and Ngai, 2007; Porter, 1985)). Supply chains can create sustainable competitive advantage by improving performance and evaluating their strategy through the understanding of governance, which is directly related to how the network works and how processes interact (Porter, 1986; Fleury and Fleury, 2000). Many studies have been conducted to classify the types of governance structures (Storper and Harrison, 1991; Humprhey and Schmitz, 2000, Gerefii, 2001, etc.), but a deeper understanding of governance structures involving transaction cost could be investigated in the supply chains in order to evaluate if they can achieve higher performance.

The article aims to assess the existing governance structures and the association to transaction costs

The specific objectives of the article are:

1) Map concepts about the relationship among companies, governance and transaction costs

2) Identify and compare different governance structures found in the literature

3) Present a case study to evaluate its governance structure

4) Analyze the opportunities of a supply chain from the perspective of governance and transaction costs

2. Literature Review

The literature review focuses on the concepts about the relationship among companies, governance and transaction costs

2.1 Concept about relationships among companies

Many authors have defined and developed the concept of the relationship among companies in different ways according to Humprhey and Schmitz (2000).

There is a lot of definitions for supply chain. One of them is that encompasses all stages involved, directly or indirectly to attend a customer order. It includes manufacturers, suppliers, carriers, warehouses, retailers and consumers. Its main objective is to maximize the value related to the profitability of the entire supply chain and not only the profitability of the one member of the chain. Therefore, the revenue generated by the final customers minus the incurred total cost of the supply is the profitability of the supply chain to be "divided" by all participants that added value to the goods or services (Chopra and Meindl ,2003)

Another concept to be considered is the Industrial Complex, which according to Amato Neto (2008) is a dynamic set of companies linked by a network of flows, prices and located in a geographical area.

Porter (1985) conceptualizes Value Chain as a system of interdependent activities, which are connected by links. Connections exist when an activity affects the cost and effectiveness of other activities.

All operations are part of a larger network, interconnected with other operations. This network includes suppliers, suppliers of the suppliers, customers, customers of the customers and so on. The key to understand the supply networks is to identify each part of the network that contribute to performance goals valued by consumers (Slack et al, 2002)

According to Gunasekaran and Ngai (2007), organizations are redesigning their internal structures and external relationships through creation of knowledge networks to facilitate data communication, information and knowledge, while improving coordination, decision making and planning.

2.2 Governance

Porter (1985) reinforces the concept of relationship among firms and he comments that a company can create competitive advantage by optimizing and coordinating the activities of interdependent connections.

The selection of competitive strategy is based on interactive processes among the company and the

markets, industries, segments and other companies. This interaction occurs at different levels of decision-making and internal powers responsible for formulating strategy (Porter,1986). The identification of power structures and governance are important to analyze the production chains, when one or more companies coordinate and control economic activities dispersed geographically (Fleury and Fleury,2000).

According to Storper and Harrison (1991), a governance structure refers to the degree of hierarchy and leadership (or their opposites, collaboration and cooperation) in coordinating the input-output system. In other words, any real production system involves an input-output system set in a context of relations of power and structures of decision making. The input-output system is a collection of activities which lead up to the production of a specific marketable output.

From the standpoint of power structure, they define the “Core” concept as a situation where power is asymmetrical, or where some core firms have the ability to determine the existence of others and the concept of “Ring”, the opposite, where power is symmetrical or where the existence of one set of firms or units is not determined by decisions made in another specific firm or unit. In the former case we have more hierarchy, in the latter case, less.

There seem to be at least two principal determinants of these relations of power. On the one hand, we must consider the number of potential agents which participate in supply chains (for buyers) or the number of clients (for suppliers). As the number of potential suppliers grows for a given buyer, the power of the latter is increased, ceteris paribus. Likewise, for a given supplier, to the extent that the number of potential clients increases, the power of any given client is reduced.

On the other hand, the qualitative nature of a given link is to some extent independent of numbers. For example the risk of opportunistic use of power on the part of the consumer of the input, once such investment has been made by the supplier, is reduced because the buyer cannot turn to alternative sources of supply and still obtain the item on favorable terms, at least in the short run

Storper e Harrison (1991) built a typology of structures governance based on different combinations of power and the hierarchy of a production system.

Table 1 summarizes the typology of structures governance.

Structure Type	Definition
All ring, no core	There is no systematic lead firm, or a rotating leader, by project. There is no hierarchy
Core-ring, with coordinating firm	The coordinating firm is the lead, systematic agent in the input-output system, but the coordinating firm cannot function on its own, nor determine the existence of other firm the system. There is some hierarchy
Core-ring, with lead firm	The lead firm is substantially independent of its ring of suppliers and subcontractors, that is, it has the ability to reconfigure at least part of its ring. It can thus determine the existence of some of its ring. Power is asymmetrical; there is considerable hierarchy
All core, no ring	The vertically-integrated firm

Table 1 – Types of governance structures – Storper e Harrison (1991)

Humprhey and Schmitz (2000) define governance as co-ordination of economic activities through non-market relationships and distinguish between three types of governance: network, quasi-hierarchy and hierarchy.

Table 2 presents a summary of governance types and their determinants in the value chain:

Structure Type	Determinants
Arm´s length market relations	Buyer and supplier do not need to collaborate in production definition. Either the product is standard, or the supplier defines it without reference to particular customers. Risks to buyer are low, either because requirements are easy to meet, or because supplier has a clear capability to meet them. The buyer´s knowledge of this capability may arise from the reputation of a cluster, or from the reputation of a particular manufacturer.
Network	Co-operation between more or less "equals". Supplier and buyer jointly define the product, and combine complementary competences. This more common when both buyer and supplier are innovators, close to the technology or market frontiers. The risk to the buyers is minimized by the suppliers´s high level o competence. High and generalized competence favour networks and reciprocal inter-dependence
Quasi-hierarchy	High degree of control of buyer over supplier, buyer defines the product. The buyer would incur losses from the supplier´s performance failures, and there are some doubts about the competence of the suppliers. Where high supplier competence is not generalized, buyers invest in specific suppliers and seek to tie them to their chain
Hierarchy	Buyers take direct ownership of developing country operations. The buyer carries out product definition, which may involve proprietary technology. The risks of poor performance by independent suppliers increase if the buyer uses quality has a brand attribute. These factors favour direct control over the production process

Table 2 – Determinants of governance in the value chain - Humprhey and Schmitz (2000)

Gerefii (2001) established two distinct types of international economic networks that have been called producer-driven and buyer-driven global commodity chains. A commodity chain refers to the whole range of activities involved in the design, production, and marketing of a product.

Producer-driver commodity chains are those in which large, usually transnational manufacturers play the central roles in coordinating production networks (including their backward and forward linkages). This is characteristic of capital – and technology – intensive industries such as automobiles, aircraft, computers, semiconductors, and heavy machinery.

Buyer-drive commodity chains refer to those industries in which large retailers, marketers, and branded manufacturers play the pivotal roles in setting up decentralized production networks in a variety of exporting countries, typically located in the third world. This pattern of trade-led industrialization has become common in labor-intensive, consumer goods industries such as garments, footwear, toys, housewares, consumer electronics, and a variety of handicrafts. Production is generally carried out by tiered networks of third world contractors that make finished goods for foreign buyers. The specifications are supplied by the large retailers or marketers that order the goods.

Firms classified as buyer-driven model include retailers, athletic footwear companies and fashion-oriented apparel companies. These companies design and/or market – but do not make – the branded products they order. They are part of a distinct breed of manufacturers without factories that separate the physical production of goods from the design and marketing stages of the production process. Profit in buyer-driven chains derive not from scale, volume, and technological advances as in producer-driven chains, but rather from unique combinations of high value research, design, sales, marketing, and financial services that allow the retailers, designers, designers, and marketers to act as strategic brokers in linking overseas factories and traders with evolving product niches in their main consumer markets.

Table 3 presents a summary of governance types reported by Gerefii (2001)

Structure Type	Producer-Driven Commodity Chains	Buyer-Driven Commodity Chains
Drivers of global commodity	Industrial Capital	Commercial capital
Core competences	Research & development, production	Design, marketing
Barriers to entry	Economies of scale	Economies of scope
Economic sectors	Consumer durables, intermediate goods, capital goods	Consumer nondurables
Typical industries	Automobiles, computers, aircraft	Apparel, footwear, toys
Ownership of manufacturing firms	Transnational firms	Local firms, predominantly in developing countries
Main network links	Investment-based	Trade-based
Predominant network structrure	Vertical	Horizontal

Table 3 – Characteristics of global network types - Gerefii (2001)

Gereffi et al (2005) found in the literature three types of supply relationships based on degree of standardization of the product and process: 1) the 'commodity supplier' that provides standard products through arm's length market relationships, 2) the 'captive supplier' that makes non-standard products using machinery dedicated to the buyer's needs, and (3) the 'turn-key supplier' that produces customized products for buyers and uses flexible machinery to pool capacity for different customers. Their analysis emphasized the complexity of information exchanged between firms and the degree of asset specificity in production equipment.

They construct the theory of value chain governance based on three factors:

a) The complexity of information and knowledge transfer required to sustain a particular transaction, particularly with respect to product and process specifications;
b) The extent to which this information and knowledge can be codified and, therefore, transmitted efficiently and without transaction-specific investment between the parties to the transaction;
c) The capabilities of actual and potential suppliers in relation to the requirements of the transaction.

They purpose a governance typology based on their investigation presented in the Table 4

Structrure Type	Description
Market	Market linkages do not have to be completely transitory, as is typical of spot markets; they can persist over time, with repeat transactions. The essential point is that the costs of switching to new partners are low for both parties.
Modular value chain	Typically, suppliers in modular value chains make products to a customer's specifications, which may be more or less detailed. However, when providing 'turn-key services' suppliers take full responsibility for competencies surrounding process technology, use generic machinery that limits transaction-specific investments, and make capital outlays for components and materials on behalf of customers
Relational value chain	In these networks we see complex interactions between buyers and sellers, which often creates mutual dependence and high levels of asset specificity. This may be managed through reputation, or family and ethnic ties. Many authors have highlighted the role of spatial proximity in supporting relational value chain linkages, but trust and reputation might well function in spatially dispersed networks where relationships are built-up over time or are based on dispersed family and social groups
Captive value chain	In these networks, small suppliers are transactionally dependent on much larger buyers. Suppliers face significant switching costs and are, therefore, 'captive'. Such networks are frequently characterized by a high degree of monitoring and control by lead firms.
Hierarchy	This governance form is characterized by vertical integration. The dominant form of governance is managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates

Table 4 – Governance Typology - Gereffi et al (2005)

There is also a classification presented by Williamson (1985) based on transactions between companies. The main elements in a transaction are: asset specificity, frequency and uncertainty. Most of transactions involve uncertainty and the author focuses on asset specificity and frequency of transactions.

The frequency of transactions can be unique, casual and frequent, but they are not completely isolated. The asset specificity can be non-specific asset, multi-asset and very specific asset.

Table 5 presents the governance structures proposed by Williamson (1985).

Structure Types	Description
Market	Asset Specificity: non specific transactions Frequency: occasional and frequent In Frequent transaction only the experiency of the involved parties is enough to decide if the business should continue
Trilateral	Asset specificity: multiple or very specific Frequency: Occasional After the members involved in the transaction signed the contract, it will be revised many times throughout the transaction. In the trilateralism, occasional transactions do not have the power to recover the costs involved in a transaction that requires a specific structure of governance. An intermediary institution is required during the agreement. Two types of transactions require specific structures of governance: frequent transactions using mixed investments and investments very specific. These transactions are non standard, their continuity is very appreciated and potentially allow recovering the costs of a specialized governance structure
Bilateral	Asset specificity: •bilateral structures: the involved parties have autonomy •single structure: the transaction is removed from the market and there is a relationship of authority (vertical integration) Frequency: common It is possible to have a governance structure focused on transactions with joint assets, keeping the autonomy of the involved parties or on the other hand, the company is structures vertically, keeping a hierarchical and authority relationship with the controlled companies

Table 5 Governance structures - Williamson (1985).

Jessop (1998) shows how to build effective governance mechanisms:

a) Simplifying models and practices which reduce the complexity of the world but are congruent with real world processes and relevant to governance objectives. These models should simplify the world without neglecting significant side-effects, interdependencies, and emerging problems.

b) Developing the capacity for dynamic interactive learning about various causal processes and forms of interdependence, attributions of responsibility and capacity for actions, and possibilities of co-ordination in a complex, turbulent environment. This is enhanced when actors are able to switch among different modes of governance to facilitate more effective responses to internal and/or external turbulence.

c) Building methods for co-ordinating actions across different social forces with different identities, interests, and meaning systems, over different spatio-temporal horizons, and over different domains of action. This depends on the self-reflexive use of self organization to sustain exchange,

negotiation, hierarchy, or solidarity as well as on the specific nature of the co-ordination problems engendered by operating on different scales and over different time horizons.

d) Establishing both a common world view for individual action and a system of meta governance to stabilize key players' orientations, expectations, and rules of conduct. This allows for a more systematic review and assessment of problems and potentials, of resource availability and requirements, and the framework for continued commitment to negative and positive co-ordination.

Each of these four conditions bears on the problem of establishing secure bases of co-ordination and giving them a structurally-inscribed strategic selectivity that rewards continued compliance.

This does not exclude (and, indeed, may well require) a certain ambivalence and real flexibility in governance mechanisms so that an adequate repertoire of governance routines exists to ensure continued vitality in the face of a turbulent environment. It promotes the ability to alter strategies and select those that are successful. This may seem inefficient at first sight because it introduces slack or waste into organizations and movements. But it also provides major sources of flexibility in the face of failure.

2.3 Transaction Costs

It is necessary to conceptualize the theory of transaction costs, since relationships coordination costs between companies should be considered as a characteristic of transaction costs changes and may lead new ways of governance (Williamson, 1985).

According to Hobbs (1996) transaction costs are simply the costs of carrying out any exchange, whether between firms in a marketplace or a transfer of resources between stages in a vertically integrated firm, when the neoclassical assumption of perfect and costless information is relaxed. It is useful to divide transaction costs into three main classifications: information costs, negotiation costs, and monitoring (or enforcement) costs.

Transaction costs are important because they affect the organization of economic activity or "vertical co-ordination". There is always some kind of vertical coordination if any production takes place.

Vertical co-ordination can be viewed as a continuum. At one extreme lie spot markets where goods are exchanged between multiple buyers and sellers in the current time period, with price as the sole determinant of the final transaction. In other words, other aspects of the transaction are non-negotiable – the buyer either accepts the product in its current form, or does not purchase it. At the other end of the vertical co-ordination spectrum lies full vertical integration, where products move between various stages of the production processing-distribution chain as a result of within-firm managerial orders rather than at the direction of prices. In between the two extremes of spot market transactions and vertically integrated firms lie a myriad alternative ways of co-ordinating economic activity, from strategic alliances and formal written contracts, to vertical integration.

These represent different degrees of supply chain management – some more formal than others:

- A strategic alliance is an agreement mutually entered into by two independent firms to serve a common strategic objective. It is often more flexible than a contract or full vertical integration. Central to the success of a strategic alliance are trust between firms and a strategy which is to the mutual benefit of all the participants; sometimes the alliance may also place legal obligations on the parties.
- Under a contract, a firm usually devolves control over various aspects of the supply chain. Contracts can be classified into three broad groups: 1) Market specification contracts 2) A production-management contract, 3) closest contractual arrangement to full vertical integration
- Quasi-vertical integration refers to a relationship between buyers and sellers that involves a long-term contractual obligation where both parties invest resources in the relationship. It differs from full vertical integration because the arrangement ceases at the end of an agreed

period of time and the firms remain independent of one another. A joint venture is one example of quasi-integration.

- Tapered vertical integration occurs when a firm obtains a proportion of its inputs through backward integration with a supplier
- Full vertical integration occurs when one firm carries out two or more consecutive stages of the production-distribution chain. A firm can be integrated forwards (downstream) into distribution or retail functions or backwards (upstream) into supply functions.

According to transaction cost theory, one of the determinants of vertical co-ordination is the nature and level of transaction costs, where in a change in the transaction costs arising from the exchange of a product may lead to a change in the management of that supply chain. In this context, the key characteristics of transactions are: the degree of uncertainty surrounding the transaction, the degree of asset specificity and the frequency of the transactions.

According to Amato Neto (2009):

• Transaction costs occur when companies and people search information about products, prices, raw materials, buyers and sellers

• Negotiation costs occur when the costs arise from the act of transaction, such as negotiations, contracts or payments to an intermediary

• Monitoring costs occur when the costs arise after the exchange has been negotiated, for example, when there is quality monitoring of the buyer or supplier assets to ensure that all terms of the preliminary agreement are being met.

The main elements of transaction costs are:

• Limited rationality: although people may wish to take a rational decision, the ability to carefully evaluate all the alternative decisions is physically limited

• Opportunism: exploration of a situation to take advantage. Do not mean that everyone involved in the transaction act opportunistically all the time, but the risks of opportunism is always present

• Asset specificity: It occurs when one trading partner invests in exchange specific resources with little or no value for alternative use. The partner who faces the risk of its business partner acts opportunistically trying to appropriate the return obtained from such investment.

• Information asymmetry: incomplete information and uncertainty relate to the situation where all parties involved in the transaction have the same, but incomplete, level of information. Asymmetry can lead to opportunistic behavior.

Table 6 summarize the sources and nature of common transaction costs according to Rindfleisch e Heide (1997)

Transaction Costs	Asset Specificity	Environmental Uncertainty	Behavioral Uncertainty
A) Source of Transaction Costs			
Nature of Governance Problem	Safeguarding	Adaptation	Performance Evaluation
B) Type of Transaction Costs			
Direct Costs	Cost of crafting safeguards	Communication, negotiation and coordination costs	•Screening and selection costs (ex ante) •Measurement costs (ex post)
Opportunity Costs	Failure to invest in productive assets	Mal-adaptation, failure to adapt	•Failure to identify appropriate partners (ex ante) •Productivity losses through effort adjustments (ex post)

Table 6 – Transaction Costs - Rindfleisch e Heide (1997)

Ring e Van de Vem (1992) points out the following transaction cost types:

- Market-based transactions can be simply characterized as discrete contracts: relatively short, bargaining relationships between highly autonomous buyers and sellers designed to facilitate an economically efficient transfer of property rights.
- Hierarchical or managerial transactions usually deal with the production of wealth or the rationing of resources among superiors and subordinates.

- Recurrent contracts involve repeated exchanges of assets that have moderate degrees of transaction specificity.
- Relational contracts tend to involve long-term investments that stem from groundwork laid by recurrent bargaining on the production and transfer of property rights among these legally equal and autonomous parties.

Table 7 presents some characteristics of a broader set of governance mechanisms described by Ring and Van de Vem (1992) which go beyond the traditional focus on market and hierarchy.

Distinguishing Characteristics	Discrete market transactions	Hierarchical managerial transactions	Recurrrent contracting transactions	Relational contracting transactions
Nature of exchange	One time transfer of property rights	On going production and rationing of wealth	Episodic production and transfer of property rights	Sustained production and transfer of property rights
Terms of exchange	Clear, complete and monetized, sharp in by agreement, sharp out by pay and performance	Authority structrure superior hires subordinate obeys or quits the employment relationship	Certain, complete, contingent on prior performance: plansfor experimentation on safeguards	Uncertain, open and incomplete, plans for bilateral learning safeguards and conflit resolution
Transaction specific investment	Non specific	Idiosyncratic	Mixed	Mixed and idiosyncratic
Temporal duration of the transaction	Simultaneous exchange	Indefinite	Short to moderate term	Moderate to long term
Status of the parties	Limited, non unique relation between legally equal and free parties	Structural functional command obedience role relationship between legally unequal parties	Unlimited, unique relation between legally free and equal parties	Extensive, unique social embedded relation between legally equal, and free parties
Mechanisms for dispute resolution	External market norms and societal legal system	Internal conflit resolution by authority	Norms of equity and of reciprocity and societal legal systems	Endogenous designed by the parties and based on trust
Relevant contract law and governance structure	Classical contract market governance	Employment contract unified governance	Neoclassical contract market governance	Relational contracts bilateral governance

Table 7 – Characteristics of types of transaction – Ring e Van de Vem (1992)

2.4 Literature Summary

Table 8 presents a summary of each type of governance presented in the literature review.

Williamson (1985)	Storper e Harrison (1991)	Ring e Van de Vem (1992)	Humprhey & Schmitz (2000)	Gereffi (2001)	Gereffi (2005)
Market	All ring, no core	Discrete market transaction	Arm´s length market relations	Producer-driven commodity chain	Market
Bilateral	Core-ring, with coordinating firm	Hierarchical managerial transactions	Network	Buyer-driven commodity chain	Modular value chain
Trilateral	Core-ring, with lead firm	Recurrent contracting transactions	Quasi-hierarchy		Relational value chain
	All core, no ring	Relational contracting transactions	Hierarchy		Captive value chain
					Hierarchy

Table 8 – Summary of type of governances

3. Methodology:

The research is based on the theory found in the literature and analysis of information extracted of one case study.

The case selection followed some criteria:

- Participation on global chain
- Complete supply chain: companies from raw material to final consumer
- Consumer products: need higher flexibility and responsiveness to attend the dynamic demand of the market,
- Information availability: need deeper understanding of the structure of the supply chain

It was selected a business unit of a multinational corporation that focus on technology solutions, offering IT infrastructure, personal computing services. The company operates in 170 countries and it is considered one of the nine largest chains of non-military supplies in the world with about 1 billion customers around the world, delivering about 1,5 million products daily.

Data was collected through interviews with operational managers and some employees involved in related activities. Informal meetings were done to re-validate the information and clarify open

questions or detail some specific subject, besides of revision of some documents related to the theme.

4. Results

Results are divided in a presentation of of the case study context and presentation of information about the value chain and its governance aspects.

4.1 Context

The selected business unit is responsible for managing a supply chain with the objective to attend Latin America consumer products market in the electronic industry. The operation started in 1998 and currently its ecosystem consists on a variety of global suppliers, three manufacturing and packaging units, three distribution centers, retailers and customers in the Latin America countries, reverse logistics, repair centers and recycling. Altogether there are about 2500 people dedicated to the operation, with 50% of the market, having the highest market share among the competition.

Figure 1 shows the supply chain analyzed

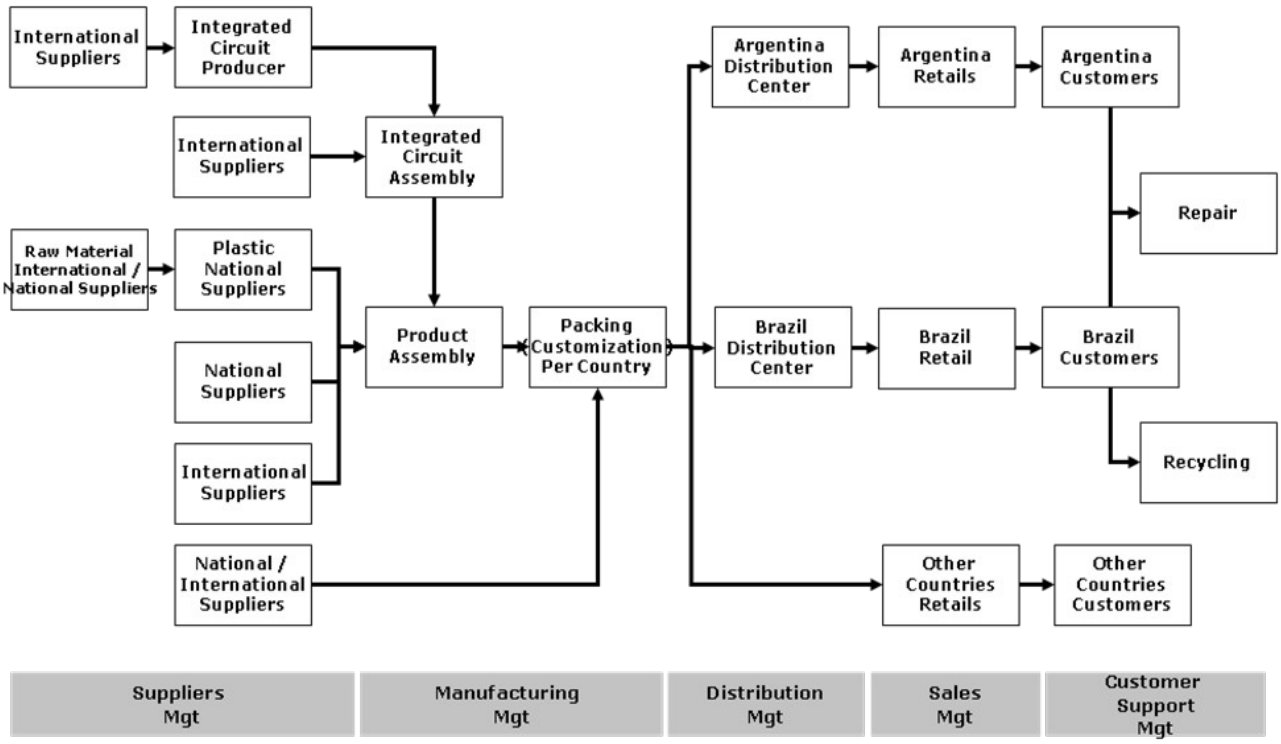

Figure 1 – Value Chain

4.2 Value chain evaluation

One company of the supply chain is responsible for managing the entire supply chain and assuring product availability and quality to the customers and it is considered the lead company.

The value chain works with contract manufacturers, responsible for the entire production and direct purchasing of raw materials. Logistics area and distribution centers are also outsourced and manage by lead company.

Some suppliers have dedicated machinery and they are part of the strategic list of suppliers, whose negotiation is done directly by the lead company to assure availability and quality of products. Contract manufactures execute the material purchasing from those strategic suppliers and negotiate with other non strategic suppliers.

The lead company influences the physical localization of the factories and the distribution centers considering minimum operation cost and tax benefits provided by the government. It also acts proactively seeking those benefits to bring or to develop new technologies not available in the local.

Local suppliers are developed to enable supply flexibility and international suppliers are under global contracts with the lead company or with contracted manufacturers to guarantee low cost and efficiency.

According to Storper and Harrison (1991), the governance structure is defined by Core-Ring with lead company, since there is the possibility of determination and reconfiguration of suppliers according to the lead company´s strategy and the power is asymmetrical with considerable hierarchy.

The governance type according to Humprhey and Schmitz (2000) is classified as hierarchy since the buyer defines the product and involves proprietary technology. The lead company assumes some losses from the suppliers´s performance failures and sometimes have the costs of supply chain increased by some protection mechanisms, for instance, safety stock to minimize risks to lose customers or engineers' team to audit the suppliers to avoid quality problems and jeopardize the brand.

According to Gereffi (2001), the chain is driven by the buyer, the production network is localized in several third world or emergent countries and design / marketing are separated of production.

Recurrent contract with market governance and mixed / specific investments is the closest relationship found in the chain, but other characteristics described by Ring and Van de Vem (1992) are not applicable.

Bilateral governance would be the closest classification according to Williamson (1985). The governance structure is based on frequent transactions with mixed assets, keeping the autonomy of the parties involved. The lead company is responsible for the specific assets and the suppliers are responsible for the generic assets.

From the standpoint of transaction costs, the higher costs of the lead company would be the information exchange and coordination costs, mainly because the lead company needs to be informed by all nodes of the supply chain, but the real value of those costs are very difficult to capture individually and they mixed with other transactions. According to Rindfleisch and Heide (1997) and Hobbs (1996) the lead company uses performance evaluation to measure the suppliers due to the uncertainty of their behavior due the risk to fail and lost productivity. From the environmental uncertainty point of view, higher costs are associated to communication and coordination of problems, which require greater flexibility from suppliers to adapt to the information changes associated to the type of product, like consumer products with higher demand variability and low accuracy.

The power of the lead company related to its suppliers has changed during the last years according to its strategy and the type of governance also suffered changes. It was not clear if the governance was changed because of the strategy or if the strategy changed because of the evaluation of the governance, since the company does not have conscious of the governance structures presented in this article.

5. Analysis

Table 9 presents a summary of the governance classification and highlights the applicable ones to the value chain evaluated

Williamson (1985)	Storper e Harrison (1991)	Ring e Van de Vem (1992)	Humprhey & Schmitz (2000)	Gereffi (2001)	Gereffi (2005)
Market	All ring, no core	Discrete market transaction	Arm´s length market relations	Producer-driven commodity chain	Market
Bilateral	Core-ring, with coordinating firm	Hierarchical managerial transactions	Network	Buyer-driven commodity chain	Modular value chain
Trilateral	Core-ring, with lead firm	Recurrent contracting transactions	Quasi-hierarchy		Relational value chain
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					Hierarchy

Table 9 – Summary of governance types

Certain characteristics of the value chain are related to the nature of the value chain (electronic industry) and fits better on Gereffi (2001) and Gerefii (2004) classifications, buyer driven chain and captive value chain, respectively, but some other characteristics defended by other authors are very important to understand and evaluate the governance of this specific value chain.

The knowledge of the type of governance can be used to make decisions and improve the supply chain performance.

The lead company could evaluate the type of governance and transaction costs to make better decisions based on:

a) Environment uncertainty to consider the variations of demand of each product, investments to improve the information integration with the key suppliers to improve agility and supply chain responsiveness.

b) Asset specificity to mitigate risks and costs, increasing local supplier commitment to motivate the development and potentially to have future global suppliers

c) Behavior uncertainty through performance evaluation and improving the quasi-vertical integration, meaning, relationship between buyers and sellers with long term contractual obligations and both parties investing resources

Main considerations are:

- Capture information exchange value (tangible costs)
- Increase the tracking and efficiency of the operation / activities considering transaction costs to evaluate higher costs to be tracked and monitored
- Have enough flexibility in the right points of the value chain and certify the right investments are being applied to guarantee the flexibility
- Improve type and intensity of management in the right points of the value chain associated to integration between nodes
- Understand priorities and how plan actions to improve the value chain based on the transaction costs

Those considerations can be applied from supplier or lead company perspectives and they will be more effective or not, depending on the type of governance, although the ideal situation is to have the entire supply chain in an integrated efforts to create a single strategy to seek higher performance to all participants.

6. Conclusion

Governance analysis helps to understand the nature of relationships, the degree of hierarchy and leadership to coordinate activities in order to increase the performance of the entire supply chain.

It was identified and compared different classifications of governance structures found in the literature and it was evaluated opportunities to improve the value chain, besides the impact of transaction cost according to the identified structures.

The analysis of governance helps in the understanding of the relationships, the degree of hierarchy and leadership in the coordination of activities that affect the decision-making businesses.

The different perspectives found in the literature bring important contributions to understand how can be the behavior of each network / value chain. There is no definitive classification of the structures of governance and they evolve over time as companies need to use different mechanisms to keep their competiveness and adapt to market circumstances, especially considering the uncertainties and risks involved.

A network controlled by one single company will have more success to take advantage of the characteristics of the governance and transaction costs, because it will have directly influence to other members and to bring benefits to everybody. But any company can take advantage of the knowledge and understanding of the relationship with other companies and they can plan strategies to optimize the internal activities and external interactions in order to have a sustainable competitive advantage.

Future research should extend the investigation to other type of supply chains and capture the transaction cost information and the impact in the supply chain performance.

7. References

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