

Managing Supplier to Customer Direct Service Triads in Service Supply Chains – A Case Study

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In traditional manufacturing supply chain management, the buyer-manufacturer manages a unidirectional flow of materials from suppliers to buyer-manufacturer and subsequently the value added products from buyer-manufacturer to customer. While some service organizations also display this unidirectional flow, e.g., a hospital purchasing drugs from a supplier and administering them to patients, many other service organizations deploy a supply chain involving a triad where the supplier of services, under contract with the buyer-service organization, delivers the service directly to buyer-service organization's customers. The buyer-service organization, however, remains responsible for the quality of services received by its customer and their satisfaction. Survey of literature shows only a handful attempts to formulate theoretical propositions for managing such triads but no empirical or case studies. This paper reports a case study in a health care organization where such suppliers to customer direct service triads (S2CDST) exist. Relationships between this organization, its suppliers and its customers are analyzed using agency theory and social network analysis. Managerial implications and suggestions for effective management of S2CDSTs are presented.

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1. INTRODUCTION

Outsourcing to suppliers and forming alliances/relationships with them by business organizations has been an active research area in supply chain management (SCM) research (Guinipero, et al., 2008). The major emphasis has been the study of dyadic (two party) relationships between buyer-manufacturer and supplier/s. However, in recent times, the existence and importance of triadic (three party) relationships in manufacturing supply chains have also been recognized. The most common such nontraditional relationship is the buyer/manufacturer – supplier – supplier triad where the buyer/manufacturer has to manage not only its relationship with multiple buyers but also the relationship

between two or more suppliers (Choi and Wu, 2009 a and b).

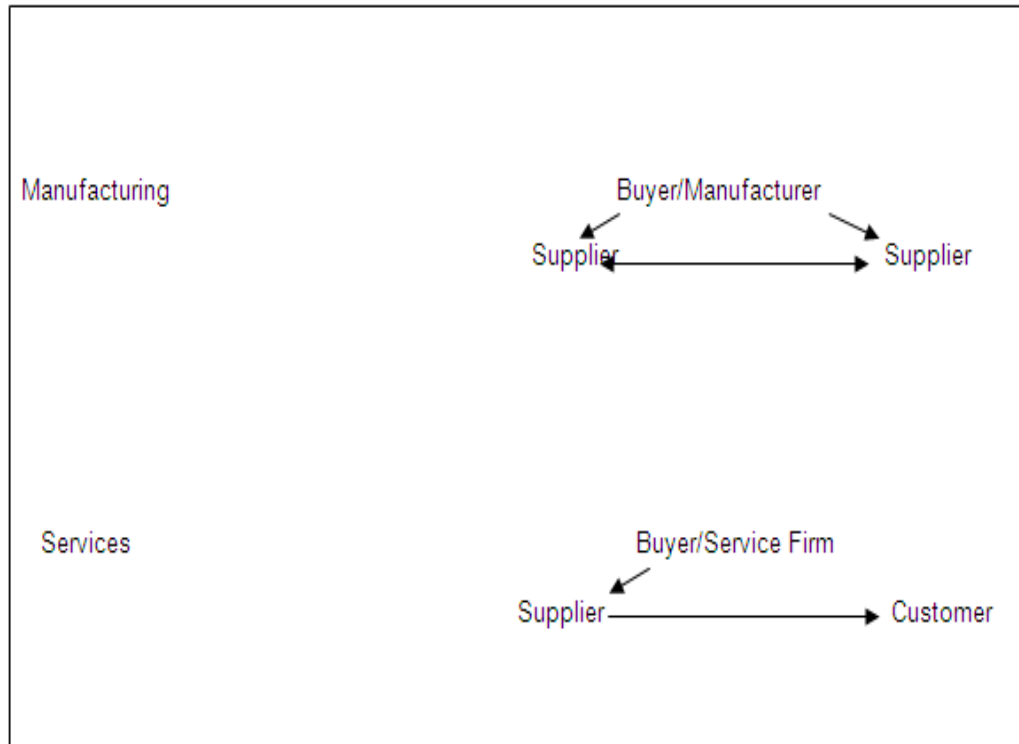
Triadic relationships exist in service SCM too. An example of a traditional unidirectional triadic relationship is a hospital purchasing drugs from a supplier and administering them to patients. The more intriguing triadic relationship that is almost unique to services is when the supplier of services, under contract with the buyer-service organization, delivers the service directly to buyer-service organization's customers. The buyer-service organization, however, remains responsible for the quality of services received by its customer and their satisfaction. We will call these arrangements "Supplier to Customer Direct Service Triads (S2CDST)". These

relationships are illustrated in Figure 1 below.

This paper deals with S2CDSTs in service SCM where the supplier of services, under contract with the buyer-service organization, delivers the service directly to buyer-service organization's

customers. As mentioned before, the buyer-service organization, however, remains responsible for the quality of services received by its customer and their satisfaction.

Figure 1: Triadic Relationships in Supply Chains



This paper will present our literature research and a case study in the health care industry. The literature survey will show that the major focus of SCM research has been on issues relating to the supplier-buyer relationships such as outsourcing to suppliers, alliances and relationships with suppliers, supplier selection, development and management, and SCM strategy, and that much of the studies on supplier-buyer relationship studies have focused on the dyadic (two party) relationship between suppliers and manufacturing or service buyers. However, in very recent times, the existence and

importance of triadic (three party) relationships in manufacturing as well as service supply chains have also been recognized and studied. Agency Theory and Social Network Analysis theory based propositions have been developed by some researchers but they have not been tested empirically or by case studies. Our case study will reveal a very important and unique triadic relationship in services where the supplier of services, under contract with the buyer-service organization, delivers the service directly to buyer-service organization's customers (Supplier to Customer Direct Service

Triads or C2SDST). Research on this important triadic relationship in service SCM is limited to one recent (2009) theoretical-conceptual study. Our case study was conducted in a managed care health plan (HMO) which manages several such S2CDSTs. Agency Theory and Social Network Analysis concepts and propositions in the literature were tested against relationships in this S2CDST between the health plan, its suppliers and its customers. Useful insights for effective management of S2CDSTs were derived.

2. LITERATURE REVIEW

2.1 SCM in Manufacturing: Supply chain management (SCM) literature is extensive encompassing work published in Operations Research, Production and Operations Management, Logistics, Transportation, Marketing, and Supply Chain Management journals. Several studies have surveyed the SCM literature over the past three decades (Giunipero et al., 2008, Goh et al., 1997; Soteriou et al., 1998; Carter and Ellram, 2003; and Rungtusanatham et al., 2003). These studies have identified nine journals consistently publishing articles on SCM: (1) Journal of Supply Chain Management (JSCM), (2) International Journal of Physical Distribution and Logistics Management (IJDLM), (3) Journal of Operations Management (JOM), (4) International Journal of Logistics Management, (5) Journal of Business Logistics, (6) International Journal of Operations and Production Management, (7) Industrial Marketing Management, (8) Management Science and (9) Decision Sciences. In the most recent of these studies, Giunipero et al. (2008) found 784 articles on SCM topics in these journals for the ten year period 1997-2006. Of these, 95 were on SCM strategy, 66 were on supplier alliances/relationships, 16 were on

supplier selection, development and management, and 13 were on outsourcing. The stakeholders focused in strategy were suppliers and customers. This indicates the emphasis on issues relating to the buyer-supplier relationship.

The buyer-supplier dyadic relationship has been a subject of interest to supply chain managers and researchers for over three decades (Anderson et al., 1994; Ellram and Hendrick, 1995; Johnston et al., 2004). Buyer-supplier relationships are usually categorized into two broad types: cooperative and competitive (Cannon and Peneault Jr., 1999; Choi et al., 2001). In cooperative relationships, buyer and supplier have long-term relationships, share common goals, and resolve conflicts through dialogues. Buyer and supplier interact frequently and share useful information (Balakrishnan and Geunes, 2004) and have a high level of trust and commitment (Cannon and Peneault, 1999; Hatfield et al., 1979). Competitive relations exist between buyer and supplier when the relationship is short-term oriented and buyer may use its purchasing leverage to demand lower prices or the supplier may use its leverage with other buyers to demand price increases (Agrawal et al., 2002; Tsay and Agrawal, 2004). Supplier's perception of unfair treatment would create the supplier's animosity toward the buyer (Rossetti and Choi, 2005). A supplier may reduce resources invested in the buyer's business to balance its effort and gains (Hatfield et al., 1979). Since the early 1980s, U.S. companies have adopted cooperative approaches to managing suppliers (Kopczak, 1997; Monczka et al., 1998). In order to meet domestic as well as foreign competition, U.S. manufacturing companies have adopted TQM and JIT practices that require close collaboration between buyers and their suppliers (Zhang,

2002; Croson and Donohue, 2003). Increasingly, buyer firms have adopted supplier development and supplier relations programs and formed alliances with suppliers (Krause et al., 1998).

More recently, managers and researchers have expanded their SCM emphasis beyond immediate suppliers to managing the overall supply chain network involving first tier and second tier suppliers (Choi and Hong, 2002). Theories, concepts and principles from many other fields have been adopted to analyze such supplier networks. Among these theories/concepts are Social Network Analysis (Bogarti and Li, 2009) including its components such as social capital formation, structural network theory and structural holes (Hitt, 2011), Transactions Cost Analysis (Williamson, 2008), and Agency Theory (Lavassani, et al., 2008). We omit a detailed description of these theories and invite the reader to refer to above citations. We will however, describe and discuss two of these theories, namely Agency Theory and Structural Holes Theory later when we use these theories to analyze S2CDSTs in our case study.

2.2 SCM in Services: Despite the vast growth of the service sector in the U.S. economy (citations omitted), much of SCM studies have been on manufacturing. Ellram et al. (2004) state, “Even service firms have focused more on managing the cost of the purchase of goods than the purchase of services.” As recent as 2007, Baltacioglu et al. claim, “Despite the extensive amount of academic work devoted to SCM, the structure of service supply chains still remains unexplored.” With service outsourcing growing rapidly, the early attention has naturally been on outsourcing business processes and professional services and the predominant objective was the shifting of costs from internal services to those provided by the

supplier (Allen and Chandrashekar, 2000; Ellram et al., 2007; Li and Choi, 2009). The buyer-service provider was the customer as in outsourcing services such as legal, billing and IT work (Goodman and Steadman, 2002). Manager and researcher focus was on proper professional service contracting, service specification, and cost control (Ellram et al., 2004). The overall management of the supplier, termed Supplier Relationship Management (SRM), received some attention (Chopra and Meindl, 2004; Baltacioglu et al., 2007). SRM was not a new concept but an integral part of management philosophies such as TQM and JIT. The limitation of this research was that they addressed the dyadic relationship between the buyer and professional supplier and not triadic or network supply chains.

Health care sector is behind other industries with respect to implementing SCM practices (Vries and Huijsman, 2011). Studies are mostly related to physical goods (such as drugs) purchasing and flow of patients (Beier, 1995). Also studied are interfacing problems between health care providers, improvement of internal processes, technology use in pharmaceutical data handling (Breen and Crawford, 2005; Brennan, C.D., 1998 and Vries and Huijsman, 2011). There was no research studies found in addressing S2CDST in health care settings.

Service supply chains are different from manufacturing supply chains in three other aspects – (i) customer’s participation in the service process while the service is being delivered, (ii) his/her subjective expectations and perceptions of service quality, and (iii) the customer bringing to the supplier his/her unique needs. For example, patient’s of a health plan to whom health care services are provided by a physician contracted by the health plan

bring to the physician their own health care needs. The services by the physician cannot commence until the unique needs of the patient are known. Thus within the S2CDST, a single level bi-directional supply dyad is created between physician (supplier) and patient (customer) (Sampson, 2000). As is well established in service quality management literature, the customer satisfaction of the supplier's service is based on the customer's pre-service expectations and post-service perceptions both of which are subjectively formed (Parasuraman et al., 1988; Seth et al., 2005). These factors bring a new dimension to the buyer's management of S2CDSTs in services such as health care as opposed to supplier-to-customer-direct flow of goods in manufacturing. Except for recognition of this problem, there is virtually no research on this issue.

2.3 Triadic relationships in supply chains: Research on triadic relationships in SCM, and in particular on relationships involving two suppliers and buyer and S2CDSTs is sparse in the literature and all of them are conceptual-theoretic. Choi and Wu (2009 a) identify several triadic SCM relationships. These included (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. They then (Choi and Wu, 2009 b) conceptually analyzed the third type, i.e., buyer-supplier-supplier triads, with Balance Theory and Structural Holes concepts and advanced several propositions relating to the supplier behavior. No empirical study or case study was performed. Wu et al. (2010) also studied the third case above. They conducted a limited case study of one buyer and two of its suppliers and found that the two suppliers oblige and comply better when the buyer facilitates cooperation between the two suppliers.

The only study in the literature on the subject matter of this paper, namely S2CDATs where the supplier provides a service directly to the buyer's customer, is that of Li and Choi (2009). They analyzed this relationship conceptually using two components of Social Network Analysis, namely social capital and the structural holes concept. Our case study will test some of their propositions.

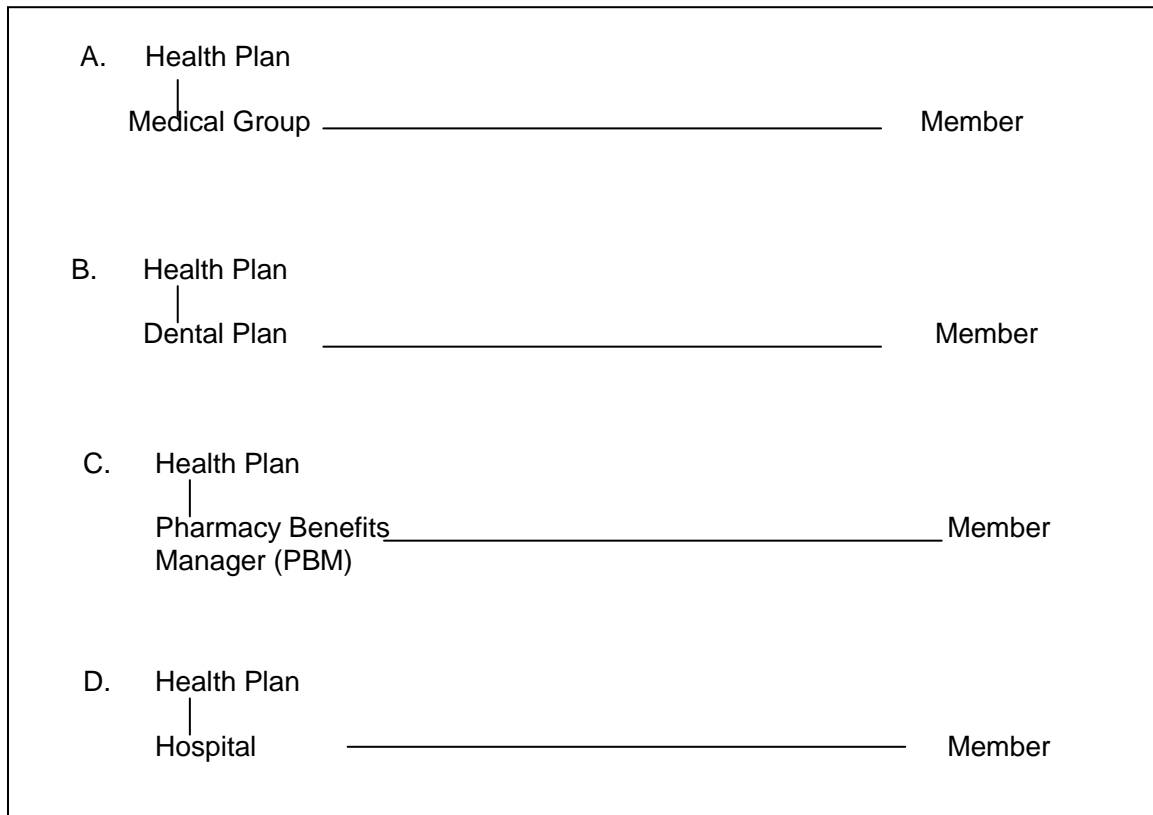
3. METHODOLOGY

The motivation for studying S2CDSTs in a health care organization originated from our discussion with senior management (CEO, Vice Presidents/Directors/Managers in charge of contracting with direct service suppliers, customer services, legal, compliance and quality management) of a managed care health plan (HMO) in Los Angeles County serving approximately 300,000 Medicare and Medicaid (Medi-Cal) subscribers (called "members"). During our discussion of various quality, compliance and customer satisfaction issues, it was realized that much of it was due to the structural arrangements for providing health care services to members. Managed care health plans receive funds from federal and state agencies for providing health care services to members assigned to, or selecting, the health plan. Health care services a member is entitled to are defined by the contracts between health plan and government agencies, and by state and federal regulations. Actual health care services are provided by individual physicians, medical groups, a dental services provider (called the Dental Plan), hospitals, pharmacy benefits provider (called the Pharmacy Benefits Manager or PBM) and various other health care providers with whom the health plan has written contracts. These entities collectively referred to as "providers" in

the industry are thus “suppliers” of the health plan who becomes the “buyer”. Members of the health plan are its “customers”. Thus, hundreds of S2CDSTs are formed and managed by the health plan. In that sense, a managed care health

plan is a unique example of an organization that provides no direct services (except administrative customer services) to customers and depends totally on S2CDST relationships. These S2CDST relationships are shown in Figure 2.

Figure 2: S2CDST Relationships in the Health Plan



Our research was also motivated by the observation that social network analysis (SNA) and Agency Theory (AT) used in recent SCM research might have a strong impact on this health plans outsourcing relationships. A social network is a map of specified ties between nodes of a network. For example, the buyer, supplier and customers form nodes in supply chain networks of various forms. “Social capital” is the value an actor in the network gets from the social network. “Theory of structural holes” in SNA (Burt, 2004) claims that individuals within

organizations or business entities in multi-business entity relationships can gain advantages by filling “holes” (no links between certain nodes) by forming “bridges”. Overall, SNA is based on the view that actors in a network are not independent but influence each other and that it is the management of the relationships in the network, and not the attributes of individual actors, that is important in increasing social capital and improving performance of actors (Borgatti and Li (2009). In strategic management, research has used network structures and

analysis at the inter-firm level (Tsai, 2002). For example, Bernades (2010), in a study of 204 manufacturing firms, found that firms that assigned a strategic position to their purchasing function performed better. In both strategic management and operations management fields, there is little work on the use of SNA to analyze triadic supply chains. Wu et al. (2010) found that buyers can influence supplier-supplier cooperation in buyer-supplier-supplier triads. Holma (2010) studied relationship development in triads involving a buyer, an intermediary travel management company (TMC) and airlines that supplied the service, and found that structure reinforcing by defining the role of the TMC clearly improved the TMC's performance to meet buyer's objectives. Note that both these studies do not cover S2CDSTs. The only study that addresses S2CDSTs using SNA is by Li and Choi (2009) who proposed several propositions for better management of S2CDSTs based on the concept of structural holes. They, however, did not test these propositions empirically. Our study does this with a case study. Also noteworthy is that all work on applying SNA to triadic SCM relationships are very new spanning only the last two years.

Agency theory is frequently used in studying buyer-supplier relationships in manufacturing (Heide, 2003). It has been used only in a very few studies in services (Logan, 2000). Compared to another theory used to analyze such relationships, namely Transactions Cost Analysis, AT provides a more dynamic view of buyer-supplier relationships (Rossetti and Choi, 2008). It is primarily focused on goal conflicts between buyer and supplier and the appropriate contract between the two parties (Eisenhardt, 1989). Empirical studies on dyadic buyer-supplier relationships support the two

streams of AT, namely Positivist Agency Theory and Principal-Agent Risk Sharing Theory that lead to several propositions useful in contracting with suppliers (Eisenhardt, 1989). For example, a proposition put forth by Eisenhardt (1989) is that: an outcome based contract is more likely to motivate the supplier to behave in the interests of the buyer. Our research has not found any studies applying AT to health industry outsourcing relationships. Also, the limited research described above on triadic supply chain relationships have not addressed implications of AT to contracts between buyers and suppliers in triadic relationships and, in particular, to S2CDST relationships.

Management of this health plan were concerned about high member complaints and low member satisfaction and retention rates in their dental services line of business as well as some of the medical services areas. They were also concerned about lower quality of service provided by some medical groups who did not meet specified disease management standards set by the health plan (e.g., percentage of diabetic patients referred for eye examinations). In contrast, there were several other suppliers of services, such as certain other medical groups and the PBM that had lower member complaints and higher member satisfaction and retention rates and scored better on quality measures. Higher member complaint rates and lower quality measures and customer satisfaction, besides affecting the profitability and reputation of the health plan, adversely affects the health plan's ability to meet compliance standards of state and federal agencies. Therefore, management was keen to examine the relationships and management of the dental services supplier and the low performing medical service suppliers. To this end, with full cooperation of

management, we embarked on the study of the following S2CDST relationships of the health plan:

1. Health Plan – Dental Services Supplier – Member
2. Health Plan - Medical Group X (a low performing limited services supplier) – Member
3. Health Plan - Medical Group Y (a high performing comprehensive services supplier) – Member
4. Health Plan - PBM – Member

Data and information collection was performed during April-August 2011 and consisted of:

1. Member satisfaction, complaints and retention statistics for the period October 2010 through March 2011 (6 months) and quality measurement audit results of Dental Plan, Medical Groups X and Y and the PBM for 2010;
2. Detailed examination of health plan's contracts with Medical Groups X and Y, Dental Plan, PBM, Department of Health Care Services (DHCS) governing Medi-Cal services and Centers for Medicare and Medicaid Services (CMS) governing Medicare services;
3. Health plan policies and procedures on marketing, monitoring quality of services, member services (including complaint resolution), compliance, and provider (supplier) relations;
4. Health plan's member information material such as handbooks, newsletters and website;
5. Interviews (1 to 1.5 hours) with health plan management - the

CEO, VP and a manager in Member Services, VP and one manager of Quality Management, VP and a manager of Medical Services, VP and a manager of Provider Contracting and Relations, VP of Legal and Regulatory Services and VP and one manager of Compliance;

6. Interviews (2-2.5 hours) with administrators of Dental Plan, Medical Group X, Medical Group Y and the PBM; and
7. Interviews with six members (1 hour each) – two Medicare members, two Medi-Cal members and two dental members.

Data collection by interviewing buyers and suppliers is common in SCM studies (Wu et al. 2010; Guinipero et al., 2008).

During the study, several follow up interviews were also conducted with health plan managers.

4. FINDINGS

First, data provided by health plan on member satisfaction, complaints and retention, and quality measurement audit results of Dental Plan, Medical Groups X and Y and the PBM were analyzed to verify the problems claimed by management. The member satisfaction rates and complaint frequencies of members assigned to Medical Group X and the Dental Plan significantly ($p < .05$) differed from that of Medical Group Y. The results were the same for quality audit ratings between the two groups. Medical Group Y's performance was found to be superior in all these measures. Member complaints on the PBM was also significantly ($p < .05$) lower than complaints against the Dental Plan.

Application of Agency Theory - Contract Analysis

Examination of contracts between the health plan and the three suppliers, namely Dental Plan, Medical Group X, Medical

Group Y and PBM revealed several differences relating to responsibilities and risk sharing between the health plan and suppliers. Key features of these contracts are summarized in Table 1.

Table 1: Summary of Key Contract Provisions between Health Plan and Its Suppliers

Issue/Provision	Dental Plan	Med Group X	Med Group Y	PBM
Supplier performance standards	Loosely stated in the contract	Loosely stated in contract	Well defined in contract by written delegation agreements	Contract contains written specific performance standards
Reports on services to members	Infrequent and informal	Infrequent	Strictly defined in contract.	Frequent and strictly defined in contract
Handling member outcome and process issues	Delegated to dental plan	Shared between Med Group and health plan	Retained by health plan	Retained by health plan
Payment for services	Basic per member per month payment	Basic per member per month payment	Health outcome based incentives in contract	Performance based incentives in contract
Risk sharing	Dental plan has to provide all services for the monthly fixed fee	Med Group has to provide all primary care services for the monthly fixed fee	A risk pool is shared by health plan and Med Group based on health plan's utilization standards	No formal risk pool.

These observations lead us to the following findings:

Finding 1: Supplier performance in a S2CDST relationship is superior in terms of customer satisfaction and quality of service when the contract between buyer and supplier is outcome based (performance standards agreed upon and specified). This is similar to Eisenhardt's proposition 1. We also found that the contracts between health plan and

governmental agencies on behalf of the member were primarily outcome based.

Thus, this finding can also be stated as Finding 2: Supplier performance in a S2CDST relationship is superior in terms of customer satisfaction and quality of service when the contract between buyer and supplier is consistent with the objectives of the contract defining services to customer.

Another noticeable factor was the frequent and defined reporting requirements in the contracts with the PBM and Medical Group Y. Frequent reports enable the buyer to monitor supplier performance closely. This implies Finding 3: Supplier performance in a S2CDST relationship is superior in terms of customer satisfaction and quality of service when the contract between buyer and supplier requires regular reporting of performance agreed to between buyer and supplier.

This is similar to Eisenhardt's proposition 2 that says, "The agent is more likely to behave in the interests of the principal when the latter has information to verify agent behavior."

The element of risk sharing seems to contribute to superior performance of Medical Group Y over Medical Group X. In risk sharing arrangements in health care, a health plan and a provider agree to create a fund which is shared at the end of the year by the two actors. If the performance of the provider meets standards of the health plan, the provider receives a greater share of the fund. Thus, a provider has an incentive to align its performance with those of the health plan when there is risk sharing, and even more importantly, to self monitor its performance. This implies Finding 4: Supplier performance in a S2CDST relationship is superior in terms of customer satisfaction and quality of service when the contract between buyer and supplier provides for risk sharing between buyer and supplier.

Application of Social Network Theory Concepts – Structural Holes

A "structural hole" in a social network occurs when there is no link ("bridge") between two nodes. What happens in the managed care environment is what Li and Choi (2009), using social network terminology, calls "bridge decay"

and "bridge transfer". The health plan has an active initial relationship with its members. As a person becomes a member of the health plan, he or she is showered with welcome letters, orientation calls, handbooks and health care information. Then the member is assigned to a medical group for medical services; receives dental services through the Dental Plan; and receives prescription drugs through the PBM. Thus the "bridge" between health plan and member becomes weaker ("decay"). As direct services from providers to member stabilize, the caretaker role of the health plan virtually ceases and gets transferred to each provider entity ("bridge transfer"). Our interviews with health plan management and members confirmed this. The main issue raised by members was the difficulty of resolving their problems with providers directly or by contacting the health plan. Two members who had been with this health plan for over five years described how, over time, they felt neglected (or felt that they are treated less importantly) by the health plan. It was not that the health plan purposely neglected its member issues but it did not get sufficient and timely information for controlling such situations, and did not set up suitable organizational structures and mechanisms to attend to the needs of a growing membership. This observation is consistent with Li and Choi (1998)'s Proposition 2 that states, "Services outsourcing causes the buyer to lose its bridge position leading to the erosion of the information and control benefits it used to enjoy." The greater customer satisfaction with Medical Group Y over Medical Group X, and PBM over Dental Plan, could be partly attributed to the fact that the contracts provided for health plan to retain member services in the Medical Group Y and PBM contracts. Another observation we made was that

health plan managers had on-line real time information on services provided to members by the PBM. These observations lead us to our next finding which is equivalent to Li and Choi's Proposition 2.

Finding 5: In S2CDST relationships, buyers must anticipate "bridge decay" and "bridge transfer" that causes them to lose information and control that are essential to ensure customer satisfaction of supplier's direct services, and, therefore, must establish management policies and practices to re-establish information flow and control of supplier performance.

Our interviews also yielded information on two other aspects relating to the relationship between health plan and providers. It became clear to us that the Dental Plan considered itself a major player in the industry and had only limited respect or trust towards the health plan. The two parties did not have a long standing relationship in the industry. On the other hand, Medical Group Y and health plan had known each party for a long time in the industry and had mutual respect and trust for each other. Part of this was built up after contracting. It was interesting to note that the key functional area managers of the health plan (in marketing, quality management, information systems, and member services) had established good contact and relationships with their counterparts in Medical Group Y. The same was true with the pharmacists of the health plan and the principals of the PBM. We also observed that health plan management and Medical Group Y key staff had quarterly meetings. These features were not part of the relationship between health plan and the Dental Plan. These observations led us to our next finding:

Finding 6: In S2CDSTs, superior supplier quality and customer satisfaction is positively related to a collaborative

relationship and trust between buyer and supplier.

This is consistent with Li and Choi's Proposition 3 ("How the new relationship is formed between the services supplier and the buyer's customer depends largely on the type of relationship the buyer has established with the supplier prior to bridge decay. A collaborative relationship between the services buyer and services supplier tends to foster a collaborative relationship between the services supplier and the buyer's customer. An adversarial relationship between the services buyer and services supplier tends to foster an adversarial relationship between the services supplier and the buyer's customer", and Proposition 5 ("Once the bridge transfer is complete, a collaborative relationship between the buyer and its supplier would mitigate the potential opportunistic behavior by the supplier, while an adversarial relationship would increase it.").

Collaborative relationships between health plan on one hand and PBM and Medical Group Y on the other stem also from "social contracts" (Heide, et al., 2007 who suggest that informal relationship elements in the form of micro-level social contracts serve as buffers that both enhance the effects of output monitoring and permit behavior monitoring.) In the buyer-supplier context, a social contract is formed when, outside the written contract, the supplier perceives the buyer's monitoring practices as conforming to the supplier's beliefs and the supplier agrees on the buyer's quality standards, not only by signing the written contract, but also informally as fair and beneficial to both parties. Our interviews showed that Medical Group Y management had this perception. This implies

Finding 7: Supplier performance in a S2CDST relationship is superior in terms of customer satisfaction and quality of service when the buyer is able to create a “social contract” environment to cover both elements in the formal contract and elements that would enhance customer satisfaction not defined in the formal contract

5. MANAGEMENT IMPLICATIONS AND LIMITATIONS

Based on our findings, management of the health plan has made several changes in their policies and practices. First, the Dental Plan contract was completely re-negotiated to include specific performance standards and reporting requirements as in the PBM contract. Second, steps have been proposed to “repair” the “bridges” and close “structural holes” between health plan and its members, particularly senior (Medicare) members who seem to generate a greater proportion of dissatisfaction. One step in this direction is the establishment of a dedicated (called “concierge”) customer service unit that would attend to a senior member’s need from first contact to resolution. Other improvements planned include improving health plan’s website for customers to access more information on what they are entitled to in terms of access, timeliness and quality of services from providers; expanding Member Services department to enable pro-active calls to be made to members in the dental program to assess levels and quality of services; more frequent meetings between health plan key staff and counterparts in the Dental Plan and low performing medical groups; and the review of the Dental Plan and low performing medical group contracts to consider the potential for including risk sharing and performance base incentives.

This study is a novel attempt to recognize S2CDSTs in a very important industry in the U.S. economy, namely the managed health care industry. However, this study covered only one health plan in one region. Thus generalizing findings of this study would need larger empirical studies perhaps by each, or clusters, of these findings.

6. REFERENCES

- Agrawal, N., Smith, S.A. and Tsay, A.A., "Multi-Vendor Sourcing in a Retail Supply Chain," *Production and Operations Management*, Vol. 11 (2), 2002, pp. 157-182.
- Allen, S. and Chandrashekar, A., “Outsourcing Services: The Contract is Just the Beginning”, *Business Horizons*, March-April 2000, 25-34.
- Anderson, J.C., Håkansson, H and Johanson, J. "Dyadic Business Relationships within a Business Network Context," *Journal of Marketing*, Vol. 58 (4), 1994, pp. 1-15.
- Beier, F.J., “The Management of the Supply Chain for Hospital Pharmacies”, *Journal of Business Logistics*, Vol. 16 (2), 1995, 153-173.
- Balakrishnan, A and Geunes, J. "Collaboration and Coordination in Supply Chain Management and E Commerce", *Production and Operations Management*, Vol. 13 (1), 2004, pp. 1-12.
- Baltacioglu, T, Ada, E., Kaplan, M.D., Yurt, O. and Kaplan, Y.C., “A New Framework for Service Supply Chains”, *The Service Industries Journal*, Vol. 27 (2), 2007, 105-124.
- Bernades, E.S., “The Effect of Supply Management on Aspects of Social

- Capital and the Impact on Performance: A Social Network Perspective”, *Journal of Supply Chain Management*, Vol. 46 (1), 2010, 45-56.
- Bogarti, S.P. and Li, X., “On Social Network Analysis in a Supply Chain Context”, *Journal of Supply Chain Management*, Spring 2009, 1-17.
- Breen, L and Crawford, H., “Improving the Pharmaceutical Supply Chain: Assessing the Reality of E-quality through E-commerce application in Hospital Pharmacy”, *International Journal of Quality and Reliability Management*, Vol. 22 (6), 2005, 572-590.
- Brennan, C.D., “Integrating the Healthcare Supply Chain”, *Healthcare Financial Management*, Vol. 52 (1), 1998, 31-34.
- Burt, R.S., “Structural Holes and Good Ideas”, *American Journal of Sociology*, Vol. 102 (2), 2004, 349-399.
- Cannon, J.P. and Peneault, W.D., "Buyer-Supplier Relationships in Business Markets," *Journal of Marketing Research*, Vol. 36 (4), 1999, pp. 439-460.
- Carter, C.R. and Ellram, L.M., "Thirty-Five Years of the Journal of Supply Chain Management: Where have We Been and Where are We Going?," *The Journal of Supply Chain Management*, Vol. 39 (2), 2003, pp. 27-39.
- Choi, TY, Dooley, K.J. and Rungtusanatham, M. "Supply Networks and Complex Adaptive Systems," *Journal of Operations Management*, Vol. 19 (3), 2001, pp. 351-366.
- Choi, T.Y. and Wu, Z., “Taking the Leap from Dyads to Triads: Buyer-Supplier Relationships in Supply Networks”, *Journal of Purchasing & Supply Chain Management*, Vol. 15, 2009 (a), 263-266.
- Choi, T.Y. and Wu, Z., “Triads in supply networks: Theorizing Buyer–Supplier–Supplier Relationships”. *Journal of Supply Chain Management*, Vol. 45 (1), 2009 (b), 8–25.
- Choi, TY and Hong, Y. "Unveiling the Structure of Supply Networks: Case Studies in Honda, Acura, and DaimlerChrysler," *Journal of Operations Management*, Vol. 20 (5), 2002, pp. 469-493.
- Chopra, S. and Meindl, P., *Supply Chain Management*, Upper Saddle River, NJ: Prentice Hall, 2004.
- Croson, R and Donohue, K., "Impact of Pos Data Sharing on Supply Chain Management: An Experimental Study," *Production and Operations Management*, Vol. 12 (1), 2003, pp. 1-11.
- Eisenhardt, K.M., “Agency Theory: An Assessment and Review”, *Academy of Management Review*, Vol. 14 (1), 57-74.
- Ellram, L.M., Tate, W.L. and Billington, C., “Understanding and Managing the Services Supply Chain”, *Journal of Supply Chain Management*, Vol. 40 (4), 2004, 17-32.
- Ellram, L.M., Tate, W.L. and Billington, C., “Services Supply management: The Next Frontier for Improved Organizational Performance”, *California Management Review*, Vol. 49 (4), 2007, 44-77.
- Ellram, L.M. and Hendrick, T.E., "Partnering Characteristics: A Dyadic Perspective", *Journal of Business Logistics*, (16:1), 1995, pp. 41-64.

- Goh, C.H., Holsapple, C.W., Johnson, L.E. and Tanner, J.R.. "Evaluating and Classifying POM Journals," *Journal of Operations Management*, Vol. 15 (2), 1997, pp. 123-138.
- Goodman, B. and Steadman, R., "Services: Business Demand Rivals Consumer Demand in Driving Job Growth". *Monthly Labor Review*, Vol. 125 (4), 2002, 3-9.
- Guinipero, L.C., Hooker, R.E., Yoon, T.E. and Brudvig, S., "A Decade of SCM Literature: Past, Present and Future Implications", *Journal of Supply Chain Management*, Vol. 44 (4), 2008, 66-86.
- Hatfield, E., Utne, M.K. and Traupmann, J., "Equity Theory and Intimate Relationships." In RL. Burgess and TL Huston (Eds.), *Social Exchange in Developing Relationships*, Academic Press, New York, 1979, pp. 99-133.
- Heide, J.B., "Plural Governing in Industrial Purchasing", *Journal of Marketing*, Vol. 67 (4), 2003, 18-29.
- Heide, J.B., Wathane, K.H. and Rokkan, A.I., "Interfirm Monitoring, Social Contracts, and Relationship Outcomes", *Journal of Marketing Research*, Vol. 44 (3), 2007, 425-433.
- Hitt, M.A., "Relevance of Strategic Management Theory and Research for Supply Chain management", *Journal of Supply Chain Management*, Vol. 47 (1), 2011, 9-13.
- Holma, A., "Relationship Development in Business Triads – Case studies in Corporate Travel Management", *Journal of Business Marketing Management*, Vol. 4, 2010, 73-90.
- Johnston, D.A., McCutcheon, D.M., Stuart, F.I. and Kerwood, H., "Effects of Supplier Trust on Performance of Cooperative Supplier Relationships," *Journal of Operations Management*, Vol. 22 (1), 2004, 23-38.
- Kopczak, LR. "Logistics Partnerships and Supply Chain Restructuring: Survey Results from the U.S. Computer Industry," *Production and Operations Management*, Vol. 6 (3), 1997, 226-247.
- Krause D.R, Handfield, R.B. and Scanneil, T.V., "An Empirical Investigation of Supplier Development: Reactive and Strategic Processes," *Journal of Operations Management*, Vol. 17 (1), 1998, 39-58.
- Lavassani, K., Movehedi, B. and Kumar, V., "Evolution of Supply Chain Theories: A Comprehensive Literature Review", *Working Paper 008-0055*, Carlton University, Ontario, Canada, 2008.
- Li, M. and Choi, T.Y., "Triads in Services Outsourcing: Bridge, Bridge Decay and Bridge Transfer", *Journal of Supply Chain Management*, Vol. 45 (3), 2009, 27-39.
- Logan, M.S., "Using Agency Theory to Design Successful Outsourcing Relationships", *International Journal of Logistics Management*, Vol. 11 (2), 21-32.
- Mills, J., "A Strategic Review of Supply Networks", *International Journal of Operations and Production Management*, Vol. 24 (9/10), 1012-1036.
- Monczka, R.M., Peterson, K.J., Handfield, R.B. and Ragatz, G.L., "Success Factors in Strategic Supplier Alliances: The Buying Company Perspective", *Journal of*

- Operations Management*, Vol. 29 (3), 1998, 553-577.
- Parasuraman, A., Zeithaml, V.A., & Berry, L.L. "SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol. 64 (1), 1988, 12-40.
- Rossetti, C. and Choi, T., "Supply management Under High Goal Incongruence; An Empirical Examination of Disintermediation in the Aerospace Supply Chain", *Decision Sciences*, Vol. 39 (3), 2005, 507-540.
- Rungtusanatham, M.J., Choi, T.Y., Hollingworth, D.G., Wu, Z. and Forza, C., "Survey Research in Operations Management: Historical Analyses," *Journal of Operations Management*, Vol. 21 (4), 2003, 475-488.
- Sampson, S.E., "Customer Supplier Duality and Bidirectional Supply Chains in Service organizations", *Journal of Service Industry Management*, Vol. 11 (4), 2000, 348-364.
- Seth, N, Deshmukh, S G, and Vrat, P. "Service Quality Models: A Review", *The International Journal of Quality & Reliability Management*, Vol. 22 (8/9), 2005, 913-949.
- Soteriou, A.C., Hadjinicola, C.C., and Patsia, K., "Assessing Production and Operations Management Related Journals: the European Perspective," *Journal of Operations Management*, Vol. 17 (2), 1998, 225-238.
- Tsai, W., "Social Structure of Coopetition Within a Multiunit Organization: Coordination, Competition and Interorganizational Knowledge Sharing", *Organizational Science*, Vol. 13 (2), 2002, 179-190.
- Tsay, A.A. and Agrawal, N., "Channel Conflict and Coordination in the Ecommerce Age", *Production and Operations Management*, Vol. 13 (1), 2004, 93-110.
- Vries, J. and Huijsman, R., "Supply Chain Management in Health Services: An Overview", *Supply Chain Management: An International Journal*, Vol. 16 (3), 2011, 159-165.
- Williamson, O.E., "Outsourcing: Transaction Cost Economics and Supply Chain Management", *Journal of Supply Chain Management*, Vol. 44 (2), 2008, 5-16.
- Wu, Z., Choi, T.Y. and Rungtusanatham, M.J., "Supplier-Supplier Relationship in Buyer-Supplier-Supplier Triads", *Journal of Operations Management*, Vol. 28, 2010, 115-123.
- Zhang, H. "Vertical Information Exchange in a Supply Chain with Duopoly Retailers," *Production and Operations Management*, Vol. 11 (4), 2002, 531-546.