

ECONOMIC BENEFITS OF RELATIONSHIP QUALITY IN THE AUTOMOTIVE SUPPLY CHAIN

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Abstract

The automotive supply chain is divided in a cascade of suppliers. The efficiency of interaction and collaboration is a deciding success factor for economic success. Although all stakeholders are aware of the need for lowest possible transactions costs and thus best possible relationship quality, some automakers do better than others. A distinct on-cost can be attributed to maintaining poor quality relationships.

Introduction

Automakers claim they are operating in a volatile and hypercompetitive environment. Especially the Detroit Three are currently facing significant challenges. Costs for health care to commodity prices, legacy and warranty costs, rising oil prices, the need for a new range of vehicles, and currency fluctuations make it difficult to turn out profits.

Increased competition has led automakers to focus more on their core business, meaning becoming less and less vertically integrated. This has led to increased specialization within the automakers, which drives the need to outsource more non-core functions. The result is an increased need for collaborative business relationships with constituencies beyond its formal boundaries – the need for being able to efficiently managing a supply chain.

In the early 1900's automobile manufacturers transformed the entire manufacturing industry from a craft orientation to mass manufacturing. Half a century later, the same industry revolutionized manufacturing again, steering manufacturing from mass production to lean production. Now, the same automakers need to move away from a focus on manufacturing to focusing on managing a value chain.

The foundation for success has moved away from managing and providing commodities or products to being able to manage a long value chain. The automotive industry operates in a multifaceted global environment which requires relationships. The quality of the relationships and the ability to manage most effectively these relationships up and down the value chain will be the deciding criteria for success in the future in the automotive industry.

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Implementing supply chain management efforts is most advanced in the automobile industry. Relatively few manufacturers account for most of the automobile production. Effective supply chain management involves the coordination of suppliers and manufacturers to decrease costs, increase quality, and explore more product design and manufacturing productivity opportunities. The management of an effective and coordinated supply chain relationship between suppliers and manufacturers significantly co-determines the cost situation for automakers and component/sub-system suppliers. Competition in the future will be between supply chains, not between companies.

Most companies don't worry about the behaviour of their supply chain partners. Instead, they expect the supply chain to work efficiently without interference, as if guided by Adam Smith's famed invisible hand. In their study of more than 50 supply networks, V.G. Narayanan and Ananth Raman found that companies often looked out for their own interests and ignored those of their network partners. Consequently, supply chains performed poorly. Those results aren't shocking when you consider that supply chains extend across several functions and many companies, each with its own priorities and goals. Yet, all those functions and firms must pull in the same direction for a chain to deliver goods and services to consumers quickly and cost effectively.

Power in the Context of The Automotive Industry

In the traditional economic model, competition among rival firms drives profits to zero. But competition is not perfect and firms are not unsophisticated passive price takers. Rather, firms strive for a competitive advantage over their rivals and their customers. The intensity of rivalry among firms varies across industries, and the automotive sector is believed to be amongst the most affected.

If rivalry among firms in an industry is low, the industry is considered to be disciplined. This discipline may result from the industry's history of competition, the role of a leading firm, or informal compliance with a generally understood code of conduct. Explicit collusion generally is illegal and not an option; in low-rivalry industries competitive moves must be constrained informally. However, a maverick firm seeking a competitive advantage can displace the otherwise disciplined market.

When a rival acts in a way that elicits a counter-response by other firms, rivalry intensifies. The intensity of rivalry commonly is referred to as being cutthroat, intense, moderate, or weak, based on the firms' aggressiveness in attempting to gain an advantage.

The rivalry between suppliers in the automotive industry has been fueled by some automakers in order to gain a competitive advantage. In the context of the automotive industry this means:

1. A smaller number of firms generally reduces rivalry because less firms compete for the same customers and resources. The rivalry intensifies if firms lose similar market share and start to struggle for market leadership.
2. The slow growth in the established markets (U.S., EU, Japan) causes firms to fight for market share. In a growing market (China), firms are able to improve revenues simply because of the expanding market.
3. The industry typical high fixed costs result in an economy of scale effect that increases rivalry. When total costs are significantly determined by fixed costs, the firm must produce near capacity to become profitable. Since the firm must sell this large quantity of product, high levels of production lead to a fight for market share and results in increased rivalry.
4. Switching costs depend on commodities. Low switching costs increase rivalry. When a customer can freely switch from one product to another there is a greater struggle to capture customers than when competing for high tech components.
5. Low levels of product differentiation is associated with higher levels of rivalry.
6. High exit barriers place a high cost on abandoning the product. The firm must compete. High exit barriers cause a firm to remain in an industry, even when the venture is not profitable. Assets used to make automotive parts can regularly not be sold to other buyers in another industry. Some firms are forced to stay in a market, scrap assets to lower fixed costs or go out of business.
7. Cultural and heritage diversity of global players make the automotive industry unstable. There is a permanent threat for mavericks and for misjudging rival's moves. New market entrants in China may play a significant role in the future.
8. Industry Shakeout. A growing market for new technologies and the potential for high profits induces new firms to enter a market and incumbent firms to increase production. A point is reached where the industry becomes crowded with competitors, and demand cannot support the new entrants and the resulting increased supply. The industry may become crowded if its growth rate slows and the market becomes saturated, creating a situation of excess capacity with too many goods chasing too few buyers. A shakeout ensues, with intense competition, price wars, and company failures.

Types of Power in a Relationship Context

By definition, power is the ability of one firm (the source) to influence the intentions and actions of another firm (the target). Power research holds strong roots in the social and political sciences and has since been explored in marketing channels literature. This research, however, has failed to test power effects in an integrated inter-firm environment, and few of such sources have examined power on the supplier-manufacturer side. French and Raven distinguish between five different kinds of power in a sociological relationship context.

Coercive power is the power to force someone to do something against their will. It is often physical although other threats may be used. It is the power of dictators, despots and bullies. Coercion can result in physical harm, although its principal goal is compliance. Demonstrations of harm are often used to illustrate what will happen if compliance is not gained.

Reward Power. One of the main reasons to work is for money needed to conduct our lives. There are many more forms of reward -- in fact anything we find desirable can be a reward, from a million dollar yacht to a pat on the back. Reward power is thus the ability to give other people what they want, and hence ask them to do things for you in exchange. Rewards can also be used to punish, such as when they are withheld. The promise is essentially the same: do this and you will get that.

Legitimate power is that which is invested in a role. Kings, policemen and managers all have legitimate power. The legitimacy may come from a higher power, often one with coercive power. Legitimate power can often thus be the acceptable face of raw power. A common trap people in such roles can fall into is to forget that people are obeying the position, not them. When they either fall from power or move onto other things, it can be a puzzling surprise that people who used to fawn at your feet no longer do so.

Referent Power is the power from another person liking you or wanting to be like you. It is the power of charisma and fame and is wielded by all celebrities (by definition) as well as more local social leaders. In wanting to be like these people, we stand near them, hoping some of the charisma will rub off onto us. Those with referent power can also use it for coercion. One of the things we fear most is social exclusion, and all it takes is a word from a social leader for us to be shunned by others in the group.

Information Power - Information is data that has been processed, organised or classified into categories. Knowledge is facts and principles believed to be true. Wisdom is good judgement of what is useful for achieving something worthwhile. Information without knowledge isn't much use, and knowledge without wisdom isn't much use. More information isn't necessarily a good thing without the capacity to interpret, understand and use it. Information power is the power to control information, which has consequences for developing knowledge and wisdom.

Expert Power - When I have knowledge and skill that someone else requires, then I have expert power. This is a very common form of power and is the basis for a very large proportion of human collaboration, including most companies where the principle of specialization allows large and complex enterprises to be undertaken. Expert power is used by Trade Unions when they encourage their members to strike for better pay or working conditions. It is also the power of the specialist R&D engineer when they threaten to leave unless they get an exorbitant pay rise or a seat by the window.

Expert and information power are the basis of power for a supplier. Both offset the coercive power and reward power exerted by vehicle manufacturers. At first sight expert power will not appear as significant. The daily course of business, however, makes it clear that the next link up in the supply and value chain will hardly be able to manage knowledge as well as the specialist firms below. Suppliers have generally more knowledge in product and process technology, scale effects and market intelligence. Profit levels in a certain commodity will be much more transparent to peer suppliers than to their customers, allowing them much better to determine the break even point of a business deal. While a customer will try to acquire expert knowledge and combine it with coercion, a supplier will always have an information advantage. The result is a power equilibrium.

Reward and coercive power remain the most transparent and widely recognized of such power bases, indicating the ability of the source to mediate dividends (such as increased business or shared benefits from cost reductions) or punishment (such as decreased business or dictated cost reductions) to the target. Beyond such traditional sources, other power bases may also retain a prominent role in the supply chain. For one, expert power refers to the perception that one firm holds information or expertise (such as product or process leadership) that is valued by another firm. Another consequential base, referent power, implies that one firm desires identification with another for recognition by association (such as part of Chrysler's Extended Enterprise or Honda's BP Program). Legitimate power, which includes both its inherent and legal forms, represents the final two power bases and infers that the target believes in the right of the source to wield influence (such

as via a sales contract). Coercive power and legitimate power have a significant negative effect upon the buyer-supplier relationship. Reward power has a moderately positive effect upon the buyer-supplier relationship. Expert power and referent power have a significant positive effect upon the buyer-supplier relationship.

To facilitate power exploration, many researchers have attempted to simplify power research through dichotomization of the different bases into categories such as coercive/non-coercive, mediated/non-mediated, and economic/non-economic. The research proposed in this paper concentrates upon the mediated/non-mediated dichotomy because initial discussions with industry practitioners indicated that it best models the power environment of the automobile industry. Mediated power represents influence efforts that are deliberately engaged (or threatened) by the power source to guide target response and include coercive, reward, and legal legitimate bases. Non-mediated power sources (expert, referent, and legitimate bases) are not specifically exercised or threatened to manipulate the target.

Piskorski and Casciaro argue that two opposing effects are associated with exercising power. First, there is relative power between the supplier and the buyer. Secondly, a buyer-supplier dyad has a combined power against the outside, Piskorski and Casciaro call it total power.

This means: the more successful a supply chain is the more important it is to exercise power carefully, to exercise fairness in business exchanges. While the automotive industry consists indeed of interrelated supply chains, a supply network, different paths with different success will be created. Suppliers will be part of economically more and of economically less successful supply chains. Mediated power bases (coercive, legal legitimate, reward) have a significant negative effect upon the strength of the supply chain relationship. Non-mediated power bases (expert, referent, legitimate) have a significant positive effect upon the strength of the supply chain relationship.

Relationship - Important Elements in Relationship Assessment

"Supply chain management requires knowledge of relationship-building skills. Supply chain integration is often regarded as a long-term strategic process and relationship management is one critical skill needed for the new breed of decision makers. Research is abundant indicating relationship management skill as a critical element for increasing the likelihood that supply chain management initiatives will be successfully implemented. For example, a recent study of companies in the United Kingdom found that 55 percent of all strategic partnerships fail within three years."

Buyer-supplier relationships can stretch from free market at one extreme to vertical integration at the other. A buyer has uncertainties with regard to needs (difficulty in spec. of requirements), market uncertainty (nature of supply market), and transaction uncertainty (trust, cost,

skills ...). The seller can handle these through its problem solving ability (provide the solution to "What") and can contribute with its transfer ability to a reduction of market and need uncertainty.

The seller has uncertainties as well: capacity uncertainties (have we sold too much/little), application uncertainty (usage pattern), and transaction uncertainty (trust, payment, precision ...). The buyer, in turn, can meet these uncertainties through demand (reduces capacity and application uncertainty) and transfer ability (reduces transaction and application uncertainty).

In order to overcome uncertainties relationships must develop over time.

The five stages for relationship building are:

- Pre relationship
- Exploratory
- Developing
- Stable

The evolution of a relationship is characterized by learning, investment, adaptations, building trust and commitment, and distance. Benton/Maloni (2002) looked at what suppliers value in a relationship with an automaker:

- | | | |
|-----------------|-----|-----------|
| 1. Cooperation | 82% | (107/130) |
| 2. Commitment | 75% | (98/130) |
| 3. Trust | 72% | (93/130) |
| 4. Performance | 43% | (56/130) |
| 5. Satisfaction | 25% | (33/130) |

The respondents were asked to indicate the relationship factors that were most important in evaluating the quality of the automotive manufacturers as customers. The most important relationship factors, cooperation (107, 0.823), commitment (98, 0.754) and trust (93, 0.715) were selected more frequently. Performance (56, 0.431) and satisfaction (33, 0.254) were chosen by less than half of the respondents. There were no consensus replies chosen for the "other" category.

Cooperation, commitment and trust can be perceived to be more easily defined. Performance and satisfaction definitions are less clear. The performance and satisfaction may be confounded with financial and relational elements. Benton/Maloni (2002) suggest performance and satisfaction can be more clearly defined in future studies.

One way to build relationship management skills is through intensive training and education of existing decision makers. Top management must recognize that this skill is an essential requirement for successful supply chain implementation. A strong buyer-supplier relationship has a significant positive effect upon performance of the entire supply chain.

Conflict is an omni-present factor in any relationship. Mediated and non-mediated power contribute equally to the amount of conflict experienced in a relationship. The less conflict there is, the less important is a high level of ability to resolve conflict. The ability to manage and resolve conflict is, therefore, a necessary factor for the long term survival of a relationship. A strong and integrated supply relationship will have, alongside with perceived high levels of levels of trust, cooperation, commitment, also have a high level of conflict resolution ability present in the buyer-supplier relationship.

Performance is defined as the ability to effectively attain desired goals and objectives. Empirical research has demonstrated that integrated supplier-buyer relationships can significantly enrich performance. Given that power may influence the inter-firm relationships driving supply chain integration, such power may thus also affect the performance of the chain. Thus, an important step in the investigation of supply chain power is to examine the consequences of a power-affected relationship upon chain performance. If performance is significantly dependent upon the relationship, the importance of power awareness is magnified.

In marketing channels research, it was confirmed that channel member performance can be affected by power as well as countervailing power. The use of mediated power erodes performance of the target, while use of non-mediated power will improve the target's opinion of the source's performance. Furthermore, the power holders enjoy higher profitability and that cooperation increases overall profitability.

Information Asymmetry

Information asymmetry acknowledges the fact that business negotiations are characterised by incomplete, imperfect or asymmetrical information.

Information asymmetry arises when private information is available to selected parties only while public information is available to all parties, i.e. not all parties to the transaction possess the same levels of information. The automotive industry is characterised by information asymmetry between suppliers and automakers. The suppliers knows cost and quality of the products offered and sold better than the automakers. An automaker is not fully capable of compensating for the shortfall in information in full by applying pressure, i.e. exerting power, to a supplier and by collecting collateral information from alternative suppliers.

Following along the lines of George Akerlof a good quality, i.e. "value for money", supplier will suffer from the information asymmetry. It is therefore in the interest of such suppliers to reduce information asymmetry. As a prerequisite, this requires a high quality relationship,

characterised by high levels of cooperation, commitment, trust and reliability. Suppliers selling, as Akerlof calls it, 'lemons' will be more interested in maintaining a system of asymmetric information.

The impetus for the research in this area gave George A. Akerlof with his 1970 work "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism". Normally, the seller knows the quality of the goods, whereas the buyer knows, best case, the average quality of the offered goods. Akerlof shows, along the example of a used car, that sellers who offer good quality leave the market if the (average) price level is too low. The result is adverse selection of goods of poor quality. Similarly, he looked at information deficits in the insurance sector.

A substantial contribution to today's theory about markets with asymmetrical information was also made by A. Michael Spence. He looked at the possibility that the better informed market participant tries to send signals so that sellers of high quality or characteristics present themselves in a way to improve their result in the market. This is called "signalling" and is naturally connected with costs. Spence stated under which circumstances such signaling has actually success. He particularly mentioned the role of education as a signal for productivity on the job market.

Joseph E. Stiglitz showed the possibilities of "screening", i.e. that the worse informed party tries to evaluate the better informed party with regard to hidden properties. An example for this is that insurance companies classify their clients by offering contracts with low deductibles and with high deductibles which facilitates grouping clients into risk classes. Akerlof, Spence and Stiglitz were rewarded the Nobel prize in economics October 10, 2001 for their analysis of markets with asymmetric information.

Hierarchical Aspects

An effective relationship management in the supply chain involves all levels of the corporate hierarchy. It is not sufficient to delegate communication completely to subordinates and expect an acceptable inter-company relationship. The opposite is the case. A trusting, enduring good relationship between two firms requires a tightly knit series of personal relationships up and down the two corporate hierarchies, much like a zipper. Mishaps along the every day business or singular unacceptable behavior will then have a much lesser impact and cause much less harm. The communication frequency will need to be greater at the working level and become less at the top level. Still, all levels will need to maintain and foster relationships with each key supply chain partner.

Twenty or fifty years ago, when vehicle manufacturers still controlled much of the value added in-house, tight relationships were a given. Now, after outsourcing work and responsibility,

plus creating more supply chain links and levels in an ever more complex world, it is quite obvious that at least the same relationship depth must be present.

In a second dimension, also functionally, an intercompany relationship must be carried by more than one pillar. While sales and purchasing are key to setting the commercial boundaries, engineering, logistics, quality and others will also need to maintain tight relationships.

Only a two-dimensional relationship along all hierarchical levels and functional levels will yield a lasting business relationship that will withstand the occasional high water without lasting damage.

A key to success for many companies is having a sound relation with the customer. The strategic importance of business relations to a firm's performance and competitive advantage is being increasingly recognised . Håkansson et al. (2002) discuss that the performance of a company and their competitive advantage is largely directed to the relationships the company has with its clients. In the long term the relationships also show a strategic importance since they assist in getting access to key resources, skills and knowledge controlled by others and because of the way valuable resources are co-created through business relations and networks. When a company has set up such a strong relationship with its customers it has created a strong competitive advantage since it will be difficult for competitors to copy.

Still, one has to be aware that there are several dimensions of relations that could affect relationships and performance and impact on relationship functions. As relationships move through different relationship stages, the relative importance of different functions will vary . Initially, business transactions may be small, and a lack of trust inhibits knowledge sharing. At this stage the customer is relatively valuable since they provide the revenues from their orders. As a relationship develops, indirect functions become more likely as trust and greater mutual understanding develops. Reichheld et al. identified that the role of a satisfied customer is very important since they can give new ideas, access to new markets and they can be a source of market referrals. Loyal customers can lead to increased revenue, which results in predictable sales and profit streams.

Transaction Cost Theory

The main reason for an organization to engage in business relationships is the aim to create value. Different important functions of business relationships that create value for the involved parties are discussed in the literature. However, only few empirical studies have so far investigated these functions as a conceptual definition of value creation is missing. In 1937, economist Ronald Coase wrote a highly influential paper called 'The Nature of the Firm', in which he described the notion of transaction cost. The development of the transaction cost theory is attributed mainly to

Williamson, Klein, Crawford and Alchian in the late 1970s and was made more formal by Grossman, Hart and Moore in the late 1980s. When two people make some kind of exchange, it requires a degree of trust. If I do not trust you fully, I may expend some time, money and energy in managing the risk that you may deceive me or otherwise not fully keep your side of the bargain. This is transaction cost. Trust is not free, and if you do not act in a trustworthy manner, then the additional transaction costs will cost you more. The key conceptual move to TCE is to describe firms not in neoclassical terms as production functions but in organizational terms as governance structures. The basic insight of TCE is to recognize that in a world of positive transaction costs, exchange agreements must be governed, and that, contingent on the transactions to be organized, some forms of governance are better than others.

The value chain efficiency is influenced by the transaction costs that occur throughout the chain, be it inter-company or intra-company transactions. Economics are firmly tied to the origins and ramifications of transaction costs. If transaction costs are negligible, the organization of economic activity becomes irrelevant. Any advantages of one firm over another will be exploited by costless contracting. Transaction cost theory is central to the study of economics, despite some critics. There are at least three main factors underlying positive transaction costs. First, individuals are limited in their ability to plan for the future and in spite of their best efforts to deal with the complexity accurately predict and plan for all the various contingencies that may arise. Second, even if perfect planning were possible, it is hard for contracting parties to negotiate about these plans due to the difficulty associated with developing a common language to describe actions and states of the world with which the parties have little prior experience. Third, assuming that parties could plan and negotiate for a fully contingent contract, it frequently remains difficult for them to communicate their plans in such a way that an uninformed third-party (e.g., a court) could reasonably enforce them. The upshot is that contracts are actually and effectively incomplete.

Search costs are generated by gathering information to identify, evaluate, and define possible technical solutions, quality levels, relationship and performance assessments. Costs associated with negotiating and contracting technical and commercial targets. This type of cost is unique to interfirm transactions in which a supply chain is split up into multiple separate enterprises. Each enterprise will seek its maximum advantage and will attempt to protect itself from exploitation. Since not all eventualities are known at the outset of a transaction, there is a varying amount of negotiation to include provision for certain developments. In a strong relationship with a high degree of mutual trust there will be more confidence to be able to resolve possible future conflicts. Therefore, less provisions will need to be negotiated upfront, more detail can be left undefined. In a relationship characterized by regular conflict both partners will attempt to provide for every possible case, driving negotiation costs up. In an intrafirm supply chain these negotiations and

contracts are far less required and issues arising at a later point can be dealt with by appealing to the lowest common superior level.

Monitoring costs arise from monitoring technical and commercial agreements, ensuring the other party fulfils its obligations. Extensive interfirm information exchange results, by reducing information assymetry, in reduced transaction cost and hence increased transaction value. Bilateral communication behavior plays a significant role in determining partnership success.

Costs for ex post sanctioning a trading partner that fails to perform as agreed.

- (i) contract negotiation for every transaction
- (ii) the exact specifications of a transaction

Pro-active steps to improve management in the value chain are fundamentally concerned with improving effectiveness in order to gain a competitive advantage.

Transaction Costs and Value Chain Efficiency

The nature of buyer-supplier interactions and relationships is complex and influenced by many factors, both explicit and implicit in nature. According to Benham and Benham transaction costs in a value chain "affect what is produced and what exchanges take place in the market; they affect which organisations survive and what rules of the game persist". Hobbs's theory of transaction costs is "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. These costs arise wherever there is any form of economic organisation, i.e. within a vertically integrated firm, in a market or in a command economy ..." (Hobbs, 1996).

Where value chain efficiency and relationship quality impact transaction costs:

1. Buyer Uncertainty

- materials costs (economies of scale)
- quality
- timing and lead times
- availability and responsiveness
- administration costs

2. Seller Uncertainty

- market
- understanding customer need
- product/material specifications

3. Uncertainty for both

- convergent expectations and goals

- reduced effects from externalities
- reduced opportunism
- joint product and process development
- faster time to market
- increased communication
- shared risk and reward
- improved asset utilization
- improved cycle times

Sources of Increased Transaction Costs

Various disciplines, including psychology, political science, economic history and law have contributed to the theoretical development of transaction cost analysis. Based on these disciplines, Hobbs (1996) identifies four key sources of increased transaction costs.

Bounded Rationality - Although it might be the intention of a person or an organisation to make a rational decision, their capacity to evaluate all possible alternatives is physically limited. In extremely complex or uncertain situations, the ability of people or organisations to make rational decisions will be impeded, i.e. bounded rationality will occur.

Opportunism is defined by Williamson as: "self-interest seeking with guile", i.e. it recognises the fact that some organisations and individuals will seek to exploit a situation to their own advantage. Although this does not imply that everybody involved in a transaction will act opportunistically all the time, it recognises that the risk of opportunism is present. The risk is greater if the number of alternative suppliers is limited. The smaller the number of suppliers available to the buyer, the greater the chances that they could act opportunistically and alter the terms of a transaction to their own advantage, such as demanding a higher price than that previously agreed.

Information Asymmetry

This asymmetry leads to ex ante and ex post opportunism. Ex ante opportunism means information is hidden prior to a transaction. This adversely affects other parties involved in the transaction, and is also known as adverse selection. In the case of ex post opportunism, a moral hazard arises from information asymmetry, because of the hidden actions of individuals or organisations. These parties may have the incentive to act opportunistically to increase their economic welfare because their actions are not directly observable by other parties (Hobbs, 1996).

Transaction Costs and Trust

Reductions in uncertainty and costs for partners require integrated supply chain relationships as well as increases in responsiveness derived from functional synergies. Improved material flow and product development as well as improved flexibility, quality, service, and innovation can contribute as well. Sources which attempt to verify partnering benefits generally find that such rewards tend not to be realized until several years after alliance formation, hinting at the necessary long-term nature of the relationship.

Trust is frequently defined as the willingness to take risk. Trust exists when one party has confidence in another company's reliability and integrity, i.e. another company will perform that will result in positive outcomes for the firm and will not take unexpected actions that will result in negative outcomes. Transaction costs arise from a lack of trust, from a manager's time spent to special scrutiny in checking supplied goods.

In a relationship of trust, both partners can avoid provisions for future contingencies because they are confident that mutually acceptable adjustments will be made in due time if market conditions change.

Dyer and Chu found in a survey covering suppliers to 8 U.S. and Asia-Pacific automakers the following relationship between relationship quality/trust and transaction cost incurred by the buyer:

From Supply Chain to Demand Chain

Heikkilä describes a transition from a supply chain model to a demand chain viewpoint. He presents a demand chain model with the following five propositions, emerging from the research of six cases in the mobile telecommunication industry:

- (1) Good relationship characteristics contribute to reliable information flows.
- (2) Reliable information flows contribute to high efficiency.
- (3) Understanding the customer situation and need and good relationship characteristics contribute to co-operation between the customer and supplier.
- (4) Good co-operation in implementing demand chain improvement contributes to high efficiency and high customer satisfaction.
- (5) High customer satisfaction contributes to good relationship characteristics

Most firms look first to gross margin. However, a single, averaged gross margin may not be a reliable point of reference for pricing, profiling or predicting profit. What is needed is an improved method that incorporates the familiarity of gross margin, while simultaneously incorporating the improved accuracy of Activity Based Costing.

The following figure shows an analysis of a product portfolio with a customer. The y-axis shows the percentage of sales with the specific customer and the x-axis the respective average gross margin. The least profitable business is at 34% gross margin and the most profitable business is at 57% gross margin. The example shown above is actually from a strong buyer-supplier relationship characterized by high levels of trust. The same analysis was done at the same supplier with a customer with which there are significant tensions in the relationship. The analysis shows the average gross margin is greater, meaning the contracted price level is higher.

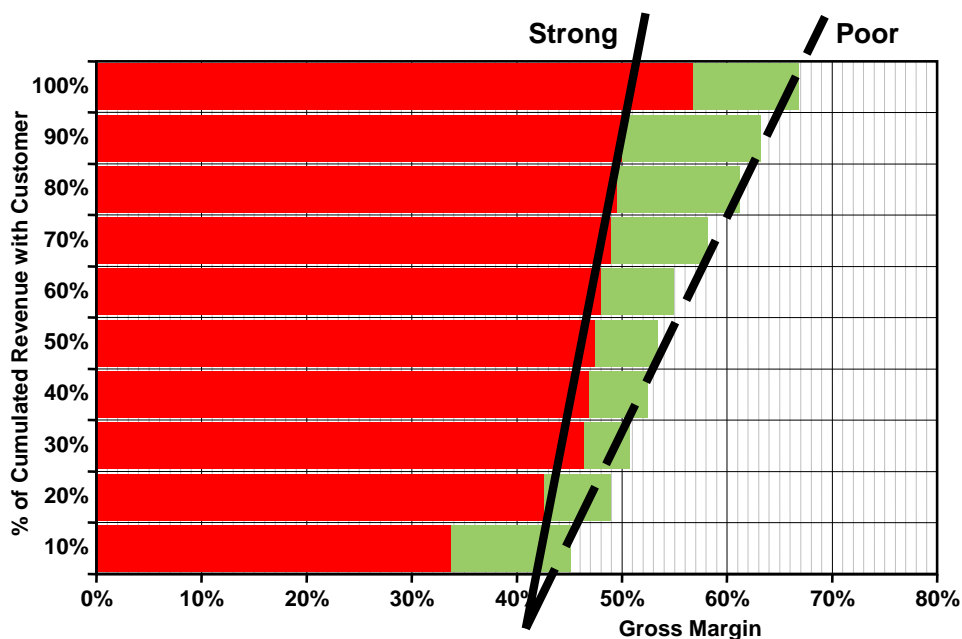


Figure 1 Comparison of Gross Margins for Strong and Poor Buyer/Supplier relationships

The figure above shows a poor buyer/supplier relationship leads to higher contracted prices. For the researched supplier, the price level with a customer with which a poor relationship was maintained was approximately 10% higher than with a reference customer with which a good relationship was maintained. The product range was comparable.

In order to support the presented findings, a questionnaire was created and sent out to 185 supplier representatives with direct daily contact to one or more automakers. The recipients of the questionnaire represent the complete range of suppliers needed for a complete vehicle. The response rate was 21.6% (40/185).

At the same time, the slope of gross margin between the worse contracts and the better contracts was about double. The underlying reasons are sandbagging on the behalf of the supplier and varying success of the buyer using mediated power to lower process.

In a strong and trusting relationship a supplier is confident cost overruns can be negotiated and prices can be adjusted. Possible cost savings are more readily communicated with the customer and implemented or granted. This is similarly true for the economic effects of technical changes during the course of a project.

In a poor relationship upward price adjustments are rarely possible, therefore prices start at a higher level, especially when technical changes need to be costed. Possible cost savings are pocketed by the supplier to leave room to yield eventual aggressive price reduction demands.

In addition, maintaining a poor but economically viable buyer/supplier relationship requires on both sides more qualified personal and more effort in time and money – accruing significantly higher transaction costs. The higher transaction costs need to be recovered with higher margins.

Many players in the automotive supply chain are victims of a Pygmalion effect. In essence, how they treat business partners affects how they end up in their supply chain/network relationships.

Let's compare three firms, vehicle manufacturers A and B, and supplier C. Supplier C has performed a process robustness study which yielded a process change proposal to significantly better quality and increase productivity. C is unsure how to approach A and B. With A, C has an open, high quality relationship. A's engineers are knowledgeable and emotionally intelligent. C decides to explain the change proposal to A in full detail and A approves of it, leaving room for cost reductions down the line.

B is, in terms of its market, its product range, and its financial situation, in a difficult situation. Many of B's suppliers' business is in much better shape than B's itself. B is permanently assuming that its suppliers are demanding fraudulently excessive prices at B's disadvantage. Therefore, B has a tight grip on its suppliers and all change requests are thoroughly investigated for potential cost effects. In this situation, C decides to make the change without notifying B. So vehicle manufacturer B gets exactly what it is assuming all along. C's change may lead to a slight change in performance, further leading to a quality problem at B, whereas C's product itself might be of better quality. The cost advantage remains solely with C, the risk with B. B is right in assuming that its suppliers profit from unopenness and dishonesty at B's expense. B decides to exert an even tighter grip on its suppliers, making it even more difficult for C to discuss change proposals.

Hypotheses

Supplier-automaker relationships have the tremendous potential to expand from pure product purchasing and short-term oriented transactions to long-term, trustworthy, and valuable

relationships. It is important for an organization to develop value-relationships with selected, important suppliers.

Entertaining a poor buyer-supplier relationship costs both parties money. A supplier is able to recover most of the extra cost from the buyer. Exerting more mediated power by the buyer will not improve but deteriorate the situation. The buyer's mediated power is more than offset by the supplier's expert power and information advantage.

Automakers can save up to around 10% cost by managing its supply chain well. While building a trusting relationship is a long term project, ruining it can be done much quicker.

Good relationship management requires responsible managers and a coherent company culture. Single black sheep can spoil all efforts.

Outlook

Successful businesses will have to have their customers involved in the product conception phase in order to maintain growth. Consumers will become prosumers. This increases the pressure on vehicle manufacturers and heightens the necessity of robust and up-to-date supply chain partnerships. Henry Ford industrialized the automotive industry early in the 20th century. Lean manufacturing, along with outsourcing, mobilized all possible cost reduction opportunities. The next structural change comes with the general acceptance that vehicle manufacturers must be the "value added chain" owner, no longer owners of the physical production facilities. Alliances, cooperations, and networks will need to be managed with best possible efficiency. "Ad-hoc-crazy" with project teams will overtake the present chimney organizations. New product categories will emerge and vehicle manufacturers will need to acquire interest group ownership and competency, no longer product competence. The same vehicle customers will change their buying behavior, it will be necessary to adapt swiftly and efficiently to maintain them as customers.

All this requires a very different relationship structure in the supply chain. The ability to build and maintain efficient, trusting and valuable partnerships will be the enabler for business success in the future. The only true new business opportunities will in the future stem from partnerships in which strong partners work together, sharing the risks and exploring all synergies. New technologies will not be available to all market players. Market risk with unforeseeable developments in procurement and sales can be shared and reduced to a level with which all in the supply chain can live with, enabling a business opportunity. Traditional cost reduction efforts in operations lead to diminishing results, creating more transaction cost than piece cost savings in the overall supply chain, they have starting to lead away from the ultimate goal. The only real growth

reserves in the automotive industry can only be mobilized together with strong partners. This is great potential also especially for those vehicle manufacturers who have not seen growth in some time.

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