

**Buyer's Switching Costs:
The Antecedent and Consequences of
Key Component of
Information Technology Industry**

**買方轉換成本之實證研究—
資訊產業之主要零組件為例**

July 8th 2004

Candidate: Li, Hsi-Tien(李西田)

Adviser: Chang, Kuo-Hsiung(張國雄)

**Department of Executive Master of Business
Administration**

The College of Management

Tunghai University

Abstract

The result classifies the relationship of switching costs between buyers and suppliers of Information Technology industry as the intention to stay with incumbent provider. The method of quantitative analysis is based on the questionnaire research the relationship between suppliers and buyers. By developing a questionnaire to practice the methodology of quantitative analysis, it is based on cluster analysis to recognize the interactional factors: Network centrality, Network density, Product complexity, Social tie, and Trust. There are three higher-order types: Structural, Relational and Transactional switching costs are combined with four phases: Idle Equipment Loss Costs, Set-Up Costs, Personal Relationship Loss Costs, and Economic Risk Costs.

A model is presented that incorporated the overall argument in the form of a series of hypothesized relationships between the different dimensions of Antecedents and Consequences of switching costs. Seeking to address this gap and presenting a theory of how buyers should have an intention to stay with Incumbent Provider.

The results of this research suggest that managers should carefully observe a supplier's goal set prior to the investment in the relationship. Because identification is associated with the formation of loyalty commitment, managers who merely assess suppliers on functional characteristics (i.e., scale, position, uniqueness) unintentionally overlook the important features like shared expectations and business values.

Key Words: network centrality, network density, switching costs.

Acknowledgements

At this moment, I would appreciate my adviser, Dr. Chang, Kuo-Hsiung. From the proposal stage to the completion of this study, it should have been impractical without all his strength guidance from Dr. Chang. I gratefully acknowledge which, CE Star (China), Power Mate (Taiwan, US), John Health tech. (Taiwan), and Jerry Chen, helped me to complete the questionnaire of study. Last, it is undoubtedly to say thanks to whom give me support and assistance, Sofia and her family, and my folks.

Contents

Abstract.....	i
Acknowledgements.....	ii
Figure and Table.....	iv
Chapter 1. Introduction.....	1
1.1. Research Motivation and Background.....	1
1.2. Research Issue.....	3
Chapter 2. Framework and Hypothesis	6
2.1. Conceptual Framework.....	6
2.1.1. Definition and Typology of Phases Switching Costs.....	7
2.2. Research Hypothesis.....	12
2.2.1. Network centrality	12
2.2.2. Network density.....	13
2.2.3. Product complexity	14
2.2.4. Social Tie	15
2.2.5. Trust.....	17
2.2.6. Stay or Go	18
Chapter 3. Methodology	20
3.1. Research Context	20
3.2. Data Collection	21
3.3. Measuring	23
Chapter 4. Results.....	25
4.1. Factor analysis	25
4.1.1. Factor analysis for antecedents	25
4.1.2. Factor analysis for switching cost.....	30
4.2. Regression analysis.....	34
4.2.1. The relationship between antecedent factors and switching costs.....	34
4.2.2. The relationship between switching costs and Intention to stay.....	35
Chapter 5. Conclusion and Discussion.....	37
5.1. Conclusion	37
5.2. Discussion and Implication.....	38
5.2.1. The buyers' Switching Cost Typology	38
5.2.2. The Antecedents of Switching Costs.....	40
5.3. Limitations	44
5.4. Future research.....	45
[Reference].....	47
Questionnaires.....	51

Figure and Table

FIGURE 1	7
FIGURE 2	9
TABLE 1	23
TABLE 2	23
TABLE 3	27
TABLE 4	28
TABLE 5	29
TABLE 6	32
TABLE 7	33
TABLE 8	36
TABLE 9	36

Chapter 1. Introduction

1.1. Research Motivation and Background

This study is expounded a frequently mentioned, but rarely researched, factor of the repeated choice behavior: the switching costs that reduce suppliers' will to abandon their existed provider.

People who involve themselves into the commercial field always have thoughts of how to promote merchandise to potential buyer and keep to trade with the existing customer. Moreover, many large firms recently have announced their ventures into the realm of customer relation management to meet what their clients' demand. In Taiwan, many industries face the change of industrial structure and customer's leave. There is description as following documents: How to reduce regulation, increase price competition, and diminish customers' loyalty has propelled customer retention and customer service management (CS) to the forefront of the marketing concerns (Marketing Science Institute 2002). In the supply chain management, most suppliers have dealt with the measurement of customer satisfaction as a practical standard for monitoring the progress, aggravated by the belief that buyers' retention and profitability will track. As evidence accumulates that satisfaction influences repeat purchase behavior, it usually explains few variances in

behavioral intentions (see the meta-analysis by Szymanski and Henard 2001). Regarding the main method for studying buyer's retention, customer satisfaction has received unflagging attention in the marketing literature (cf. Anderson and Sullivan 1993; Fornell 1992; Fournier and Mick 1999; Szymanski and Henard 2001). Up to now, suppliers seem to be stuck in a trap that it is customer satisfaction, a shortsighted opinion that customer satisfaction and service quality are the only tools for managing customer retention (Reichheld 1996). To get out of this trap, managers must devote themselves with more understanding of the various factors of customer retention.

As we always hear, a buyer would abandon the partnership with the existing vendors and turn to other suppliers. All of this is not to say that product pricing is not important, it is mainly due to that we want "easy to do business" (TSMC's slogan), no matter what people say. I was one of the members in pricing meetings in which downstream producers believed that switching costs are some of most important factors that they would pay more for the privilege of dealing with those suppliers. When I asked what issue each of them had been concerned, often the majority of them could not bear the risk to migration to a lower cost but poor quality provider to replace a higher price but stable delivery at quality and timing.

Most of the researches of switching costs focused on consumer behavior. A great number of buyers' switching costs usually addressed but those potential issues are hard to explore. Prior research offers a number of strategies for managing specific customer switching costs (e.g., Crosby, Evans, and Cowles 1990; Klemperer 1995). However, these suggestions support a piecemeal approach to switching cost management, raising many concerns. First, managing distinct switching costs separately may be less effective than managing them at once, as certain antecedents may influence multiple switching costs. Second, without a systematic consideration of switching costs and their antecedents, a supplier may fall short to recognize when its actions will influence switching costs as information technology industry's simplification of its key component specification structure formed, and the firm may inadvertently reduce some of its buyers' switching costs. There are assorted buyer's purchases of manufacturing equipment, material, key component, office equipment, etc. We would research a point of view at the buyer's purchase of manufacturing key component

1.2. Research Issue

Seeking the best enterprise operation and benefit are some of top targets; suppliers will adjust their strategy to fill the bill what customers request. By seeking the company's operation and profitability, suppliers

will change the measure of satisfying their buyers' demand according to the suppliers' strategy and the business environment, in order to achieve the optimistic profitability and the best future development. From the customers' point of view , since the quantity of the customers are relatively less , and the purchasing amount is huge , therefore these customers got more bargaining power against the supplier , and will use it to the suppliers to fulfill their needs . Since the strength of the customers and suppliers will base on economical, legal, market structure and product issues. Because of that, it forms various and complicated of relationship between buyers and suppliers, in the industrial market, being understood of buyers and suppliers has become extremely important for enterprises. Industrial key-parts market is gotten a very huge range and complexity by choosing one particular range and does a deep research, which would be more valuable for the buyers' and suppliers' reference. This research chooses the Electronic industry of Information Technology as the target, which also got the highest growth rate and highest value among Taiwan. The methodology of qualitative and quantitative analysis is applied at this research. The methodology of qualitative analysis is based on Industrial organization model (Carlton & Perloff, 1994) and five forces model (Porter, 1980), do the analysis of the factors that affect the buyers' power of electronic industry of Information Technology.

The basic objectives of this research are the following:

- **Find out and empirically verify a typology of buyer's switching cost perceptions**
- **Provide a measurement of key theoretical factors that impel buyer's switching cost perceptions**
- **Evaluate the occasions of different types of switching costs on buyer's continued cooperation**

A comprehensive two-tiered typology for conceptualizing buyer's switching costs is developed at this research to carry out the above objectives, by collecting the data from electronically industry of Information Technology. At the first level, the granularity essential to evaluate switching cost facets is offered by the typology. At the second level, the typology also advises the thrift required to powerfully picture and communicates the framework. Applying this typology, at first, we try a model of switching cost antecedents. How different switching costs explain buyers' intentions to stay with an incumbent provider has inspected. Describing the research findings, recommendations are showed for managing the factors that weight buyer's switching costs and for using switching costs. There is conclusion of research with a discussion of the overview of the discovering and hereafter research tips.

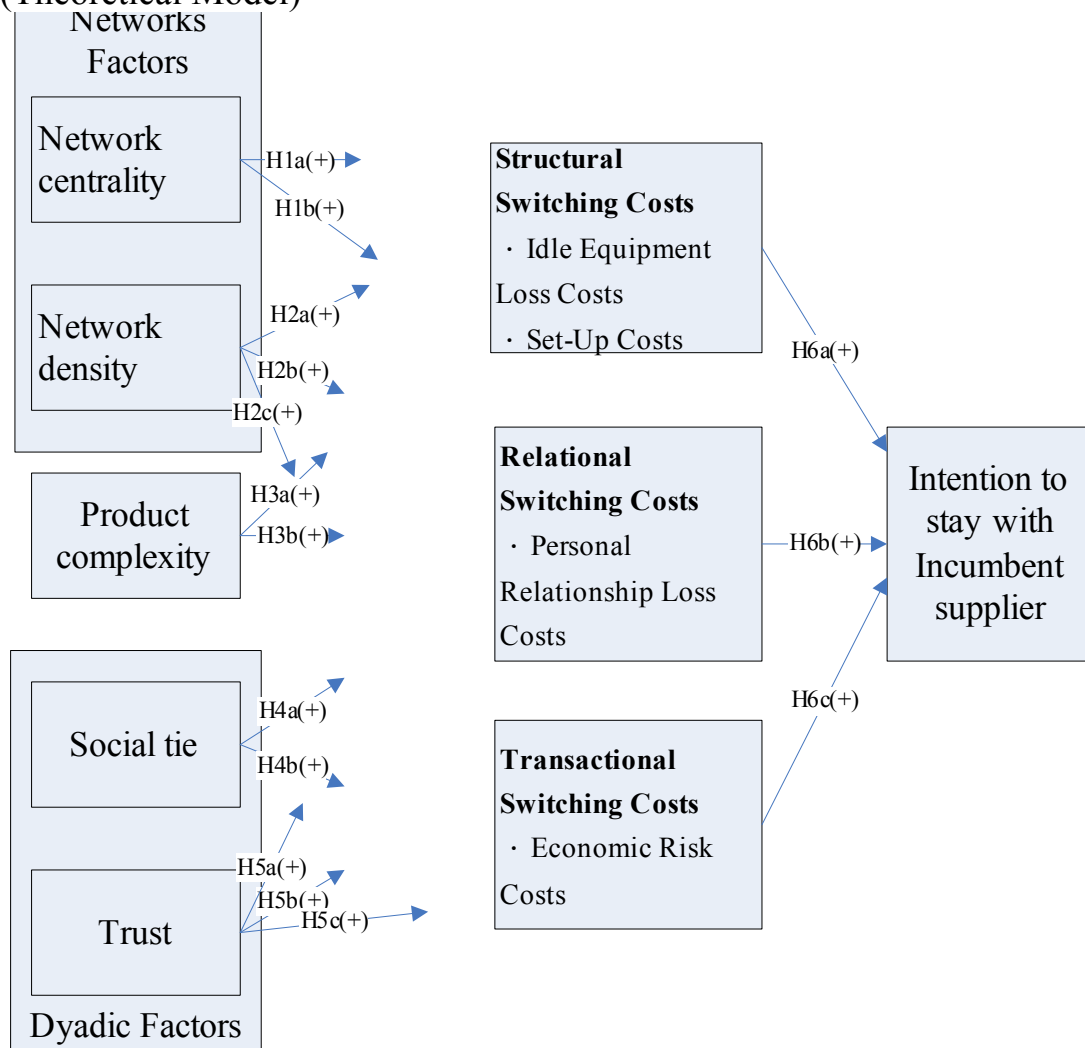
Chapter 2. Framework and Hypothesis

2.1. Conceptual Framework

The topic of Switching Costs has been usually discussed around industrial cycle. Downstream factories always face the cost-down pressure to enhance their competitive price with competitors. The factor of pressure usually becomes one of the reasons that demanders are willing to change the vendors. However, the downstream factories confront many latent and active costs when turning to other vendors. The costs should be called the “Switching Costs”. The switching costs what downstream factories will face would inflect them to consider whether they stay or change the existed vendors. To present a framework for managing various types of switching costs, we hypothesize linking five antecedents with the three major switching cost types as Figure 1.

Figure 1

Buyer's Switching Costs and Their Antecedents and Consequences (Theoretical Model)



2.1.1. Definition and Typology of Phases Switching Costs

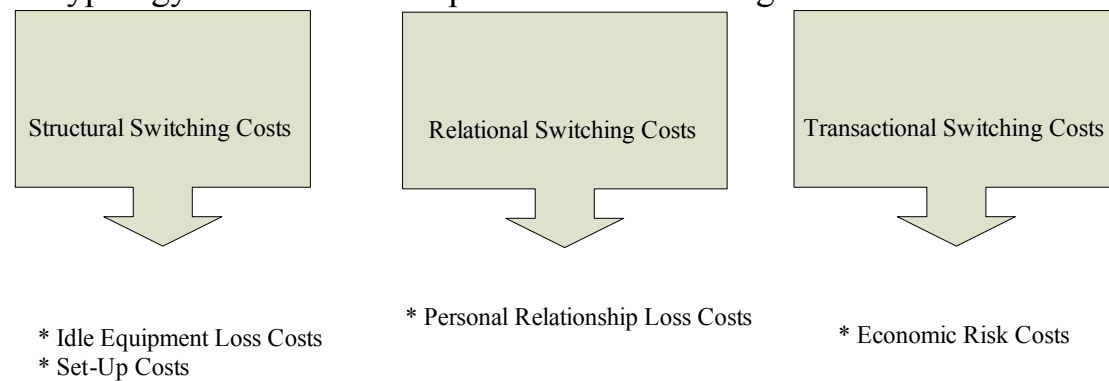
Administration Master, Porter (1980), has defines that Switching costs are "one-time" costs, as opposed to the ongoing costs associated with using a product or provider once a repeat-purchase relationship is established. Thomas A Burnham, Judy K Frels, and Vijay Mahajan also have defined switching costs as the one-time costs that customers

associate with the process of switching from one provider to another. While switching costs must be associated with the switching process, they need not be incurred immediately upon switching (Thomas A Burnham, Judy K Frels, and Vijay Mahajan, 2003 spring). Switching costs of this research are described as the stake that buyers would lead in the competitiveness at market. Before undertaking to select the type of Switching Costs, discussions on many engineers and buyers who working at the electrical industry of information technology products in Taiwan, America, and China. There are many factors have been discussed of what reasons would affect them whether to stay with the existing vender or not. We have generalized the below evidence in four distinct switching cost phases. Following statements are the switching cost phases.

In order to offer a compendious typology of switching costs, I inspected the chart with the correlations among the four switching cost phases. There are three higher-order types are combined from four phases switching costs at this research (see Figure 2). These were titled as follows:

Figure 2

A Typology of Customers Impression of Switching Costs



A. Structural switching costs: this type is focus on the tangible assets loss and replaced, for example, seldom or none applied on the existing equipment and the request of installation and configuration the new facility. The costs are generalized into visible assets. Those costs also are called a Sunk Costs. We have defined two phases of structural switching costs to explore what theory had pointed out as below;

Idle Equipment Loss Costs. Idle Equipment Loss Costs are that manufactory change to new key component to replace the existing one for production, and it would be seldom or no longer applied the existing productions equipment or tools. They are also the one-time financial outlays that are incurred in switching providers other than those used to purchase the new product itself (Heide and Weiss 1995; Jackson 1985; Klemperer 1995; Porter 1980; Weiss and Heide 1993). When firm adopt a new source often involves onetime expenditures such as deposits or initiation fees for new customers (Guiltinan 1989). In addition, switching

products or providers may involve replacing transaction-- specific assets, or "co-assets", in which the buyer has invested (Kerin et al. 1992; Weiss and Heide 1993). As above condition, the degree of idle equipment loss costs will be depended on the previously investing in production.

Set-Up Costs. Set-Up Costs are an estimated amount of damage of time and effort costs that are related with the process of initiating a relationship with a new provider or setting up a new product for initial usage (consider installation and configuration software) (Guiltinan 1989; Klemperer 1995). At the industry, if the new key-components were applied, it would raise the labor to inspect the quality and map out the manufacturing tooling and modeling.

B. Relational switching costs: this type is explored the issue of emotions between supplier and buyer. "Business is Business" that we usually hear it in the trade market. It is a writing to put profit above conscience. However, after the long period of cooperation between buyer and supplier, both parties would recognize each other deeply and catch what their status is. In this situation, they will not care about the benefit but the friendship built in trade history. It is smooth to deal business for both sides. If buyer would change supplier, it should spend money and time to create well relationship with new supplier as the existing supplier. The money and time are the costs of relation switching. We have defined

the phase, Personal Relationship Loss Costs, as below;

Personal Relationship Loss Costs. Personal Relationship is talking about the ties of friendship between supplier and buyer. The loss costs are the emotional losses related with breaking the bonds of identification that has been formed with the people with whom the customer interacts (Guiltinan 1989; Klemperer 1995; Porter 1980). Buyers' experience with existed supplier's employees creates a level of smooth that is not easy to obtain with a new provider. It is not only a money and time issue but also an emotional one that buyer should face it.

C. Transactional switching costs: the type is hunted the issue of business effect between supplier and buyer. The cost is usually inductive intangible one. For example, buyer would search for a new supplier that she should invest in labor and other resource to try it, but the result is uncertain. In another word, buyer should take the risk whether it is success or fail in result. Therefore, the definition of phase is as below;

Economic Risk Costs. Economic risk has been mapped the hard estimated risk of finance. Economic Risk Costs have been described as the costs of accepting uncertainty with the potential for a negative outcome when adopting a new provider about which the buyer has insufficient information (Guiltinan 1989; Jackson 1985; Klemperer 1995;

Samuelson and Zeckhauser 1988). The problems what buyer should face are the stability of new source, the quality of supplier's service, etc. Those costs are existed much variation to estimate the risk.

2.2. Research Hypothesis

It is easy to find out the nature of the products and suppliers in an industry according the description of key component and market characteristics. Switching costs may be generated by key component and its market characteristics associated with a slow dispersion of innovations. Such two characteristics are the complexity of the items being considered (Gatignon and Robertson 1992; Klemperer 1995) and the heterogeneity of providers in the market (Schmalensee 1982). According the perceptions of these characteristics vary among buyers within an industry, differences in switching costs occur as well. The research hypotheses have established to be the basic researching structure. The research hypotheses are developed as following description.

2.2.1. Network centrality

What is Degree Centrality? A measure of network activity is. An alter is highly degree central to the extent that he or she is directly connected to many other alters. A network is highly degree central to the extent that there is wide variability of point degree centrality among alters. A star network, where one alter is the intermediary for all other alters,

would be 100% centralized. A network where all alters have the same number of ties within the network would have graph degree centrality of 0. Degree centrality is a measure of direct ties, and thus should be used for concepts that require direct ties.

Network centrality refers to the strength of an individual supplier's position in an agent network (Benson 1975), and scores measure the interconnectedness of the respondents in their personal networks. The power of a supplier's converge of same trade is strong. Buyer is hard to deal business with new supplier. Another issue is that your customer places purchase order to you or not based on your venders. When supplier's network centrality is perceived much strong, buyers will face much higher switching costs to change the existing supplier. The higher the centrality, the higher the incidence of adoption.

Hypothesis1: Greater perceived networking centrality would be associated with higher (a) Structural and (b) Relational switching costs.

2.2.2. Network density

What is Density? The percent of ties that exist in a network out of all possible ties. A density of 1.0 implies that every alter is connected to every other alter. A density of 0 implies that no alter knows any other alter.

Network density reflects the average strength of relations in a network

(Burt 1992). The existing supplier holds good relationship with same trades and is active at supply and marketing field, other vendors will be hesitate to offend her to offer new source to buyer. As the high degree as supplier's network density is appeared, buyers will bear much higher switching costs to transfer to the existing supplier.

Hypothesis2: Greater perceived networking density would be associated with higher (a) Structural, (b) Relational, and (c) Transactional switching costs.

2.2.3. Product complexity

Product complexity is what kinds of supplier's product or service are. Those could sort out product type, product technology, kind of material and marketing strategy (Grover et al 1995.) Buyers are likely to perceive higher risks when key components are more complex because the difficulty in understanding the product leads to uncertainty, increasing the perception that an unknown negative outcome may occur (Holak and Lehmann 1990). Similarly, the larger number of attributes associated with complex products makes both information collection and direct comparisons of attributes more costly (Shugan 1980). A more complex product is also likely to involve a larger number of learned skills or scripts that must be relearned in order to switch providers (Wernerfelt 1985). Finally, complex products are not "easy to try" (Holak and Lehmann 1990:63); thus, as complexity increases, the efforts required to establish a new relationship will rise. In sum, when buyers perceive

products more complex, they perceive higher switching costs (Thomas A Burnham, Judy K Frels, and Vijay Mahajan 2003).

To conclude it, when key components are perceived as more complexity, buyers rely more on relationship with brands and people to ensure that they receive a quality product and to simplify choices (Sheth and Parvatiyar 1995).

Hypothesis3: Greater perceived product complexity will be associated with higher (a) Structural and (b) Relational switching costs.

2.2.4. Social Tie

Business behavior reflects humanity living a group. Therefore, and the life style of group will form a social type. The type is tied to people relation. It is an interesting issue of human resource. The focal point at this level of analysis is the dyadic relationship between the principal and focal agent as opposed to the relationships within the agent network. Relationalism reflects the degree to which relational norms are established in a channel relationship (see Brown, Dev, and Lee 2000; Heide and John 1992). We also could recognize that three partially overlapping norm types have been used commonly to reflect extent of relationalism (see Lusch and Brown 1996; Noordeweir, John, and Nevin 1990). Only this topic, Social Tie, has been discussed over thousand years, but its content is still a continued valuable think and research for people.

When norms of solidarity, flexibility, and information exchange are solidly entrenched in a relationship, more cooperative interaction among the firms is likely to result (Dwyer, Schurr, and Oh 1987; Jap and Ganesan 2000).

The first party to make overtures toward a relationship is opened to exploitation because it has no guarantee that its efforts will be reciprocated (Anderson and Weitz 1989). Trust, a willingness to rely on an exchange partner (Moorman, Deshpande, and Zaltman 1993), reduces these feelings of vulnerability because trusting partners can count on a generalized reciprocity when conducting business (Morgan and Hunt 1994). A trusted partner is seen as possessing credibility and benevolence, where credibility is the expectation that the partner's word can be relied upon, and benevolence is the belief that one party is genuinely interested in the other's welfare (Doney and Cannon 1997). Underlying this conceptualization of social tie is the knowledge that the trustworthy party has high integrity, which is associated with such qualities as being honest, fair, and truthful. Because commitment entails vulnerability (Morgan and Hunt 1994), these traits are particularly important when social expectations are the basis for the relationship.

Hypothesis 4: Greater perceived social tie between supplier and buyer will be associated with higher (a) Relational, and (b) Transactional switching costs.

2.2.5. Trust

Reciprocally interdependent parties can affect each other's outcomes by performing or failing to perform required actions (Cheng 1983). An agent's failure to fulfill contractual obligations can hinder the effective operation of the exchange, increase transaction costs, and result in a significant drop in the principal's ability to achieve its own goals. Therefore, an incentive may exist for the principal to take a severe enforcement response when interdependence magnitude is high in order to closely coordinate activities in and protect the value of the relationship (Gundlach and Cadotte 1994; Kumar, Scheer, and Steenkamp 1995). At the same time, the principal may be concerned about how the focal agent in an interdependent relationship will react to a relatively severe enforcement response. The agent may take reciprocal actions that could lead to a conflict spiral (see Kumar, Scheer, and Steenkamp 1995). In our judgment, the basic requirement for due performance from an important focal agent will dominate any possible retaliation effect. After all, it was the focal agent's violation of an obligation that necessitated an enforcement response, not the principal's desire to influence the agent's autonomous decision-making. The focal agent may acknowledge this and react accordingly (Thomas A Burnham, Judy K Frels, and Vijay Mahajan 2003).

Trust emerges when partners share a variety of experiences, understand one another's objectives and goals, and can predict one another's behavior (Doney and Cannon 1997). Not only are goals, ideals, and expectations shared, but also repeated transactions support norms of equity in the relationship (Ring and Van de Ven 1992). Therefore, under high trust conditions, the supplier can be counted to encourage an equitable arrangement, and consequently, the relationship is seen as a safe harbor that is highly valued by the buyer (Morgan and Hunt 1994). The buyer recognizes that its continued identification with this supplier is justified and a bond of allegiance forms. Alternatively, as Gundlach and Murphy (1994) noted, "High trust causes more favorable attitudes regarding loyalty". Thus,

Hypothesis 5: Greater perceived trust between supplier and demander will be associated with higher (a) Structural (b) Relational (c) Transactional switching costs.

2.2.6. Stay or Go

Regarding the scope, buyers distinguish switching costs or barriers to leaving an existed vender; they should be tended to trade with the supplier. In a word, switching costs are disutility that buyers would avoid trouble whenever possible. While earlier research has not addressed the effects of different switching cost types, facts of direct switching cost effects have been accumulating at the industry level and at the global

switching cost level (Anderson and Sullivan 1993; Bansal and Taylor 1999; Weiss and Heide 1993). It is compatible with these efforts but advising more specificity in the description of switching costs, those recommend the following direct association between switching costs and buyer's intentions:

Hypothesis6: Greater perceived (a) structural, (b) relational, and (c) transactional switching costs will associated with higher buyers intentions to stay with an incumbent.

To survey the above buyer's characteristics, the first three ones: Network centrality, Network density, and Product complexity, are also likely to influence the extent to which switching costs are perceived. The other two characteristics: Social tie and Trust are associated with switching cost perceptions are the customers' level of relationship.

To summarize, the antecedent model suggests that greater perceptions of Network centrality, Network density, Product complexity, Social tie, Trust, will generally be associated with higher switching costs.

Chapter 3. Methodology

3.1. Research Context

In order to recognize what factors will affect the information technology buyers would alter the existing supplier, this study developed a questionnaire to collect and search for the correlation with switching costs. After finishing the survey data, I have drawn in the interview with the engineers and buyers who work at the industrial field.

Items for each switching cost were developed or borrowed from the previous research and modification. Based on an expert survey in which 20 managers rated the presence of different switching costs and the level of competition for customers in 15 different companies, two industries are identified for further study. The telecommunications industry and surveying instruments industry : telecommunications industry were selected as being representative of business domains in which the providers' battle to improve customer retention could greatly benefit from switching cost management, industries in which a wide array of switching cost perceptions should exist even though it is relatively easy for factory owner to switch providers. A pretest survey was conducted using a convenience sample of 30 nonacademic employees of ten electronic companies at Shin-Chu Scientific Industrial Park (Taiwan Shin-Chu). A strict definition of switching costs was provided to ensure consistent

interpretation: respondents were asked to consider dropping their previous identified primary service provider in order to adopt a new provider. Respondents rated their perceptions of the costs involved in switching using 5-point Likert-type scales. Scales for the switching costs, the antecedents, satisfaction, and buyer intentions were then refined using exploratory factor analysis, Cronbach's alpha, and correlation matrix (Anderson and Gerbing 1988; Churchill 1979).

3.2. Data Collection

Because of a review of the literature and restudy interviews, I developed a survey instrument of manufacturing key component. Because of the convenience of job, the data were collected from the industry what I usually contact with them, Information technology industry. The final survey was then distributed to 200 customers through seminar, side visit, and mail. The sample included members of an industrial institute among Taiwan, China, and USA, employees of global company between Taiwan and USA. The percentage of questionnaires' return rate is 52.5% (See Table 1). One hundred Five completed surveys were returned (52.5%) and One hundred and Three completed surveys were used (51.5%), constituting the sample for the manufacturing industrial study.

I drew an international sample when I placed two seminars of power system apply in telecommunications in Shanghai and Chengdu, China. I

also look up the roster of Taiwan computer Association to list the inquiry members. I made telephone calls to firms in the sample to check mailing addresses and verify that the attribute of company's product is industrial goods or not. After ignored the firms that I could not contact and those did not qualify (e.g., licensing firms, no longer in business), our sampling frame consisted of thousands companies.

The attendances of seminars are includes engineers, marketing person, and buyers of Telecommunications industry. Letters were mailed to the identified representatives to premonish them of the study and solicit their participation. A week later, the survey was mailed. Follow-up attempts consisted of two further rounds of telephone calls, interspersed with a reminder letter. Not only mailing the letters to target people, I also have a site visit with interviewers to complete my mission. Our iterative data collection effort yielded 150 responses, of which 97 were incomplete or unusable. The effective response rate of 35% compares favorably with those obtained in prior channels research. Our respondents' industries of questionnaire are distributed over IT Industrial key component (55.2%), IT consumer key component (13.3%), and Others (29.5%) (See Table 2.)

Table 1

Percentage of Questionnaires Return by Region

	Delivered	Returned %
Taiwan	80	50 (62.50%)
China	105	45 (42.86%)
USA	15	10 (66.67%)
Total	200	105 (52.50%)

Table 2

Industry Composition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	IT Industrial key component	58	55.2	56.3	56.3
	IT consumer key component	14	13.3	13.6	69.9
	Others	31	29.5	30.1	100.0
	Total	103	98.1	100.0	
Missing	System	2	1.9		
Total		105	100.0		

3.3. Measuring

We have used following the methods proposed by Anderson and Gerbing (1988), those examines the convergent and discrimination validity of the scales. Scale measuring the antecedent and consequence constructs were developed and tested in the same iterative manner described above. Factor Analysis is used to extract the main factor. Principle Component Analysis is employed to extract the factors where Eigenvalue is grater than 1. The standard of each factor is accepted by Varimax analysis if the absolute value of factor loading greater than 0.6. Then the name of each factor will be nominated by their nature of its

questionnaire.

Cronbach's Coefficient Alpha is applied to evaluate the internal consistency of every dimension. The greater Cronbach's Coefficient Alpha value is, the higher internal consistency and reliability it is. The standard of factor which will be accepted in this study is greater than 0.6.

The correlation matrix is what the interpretation of multiple regression results often requires information about the coefficients of correlation between pairs of variables in the study.

The relationships between the constructs are examined using regression analysis. The results present in Tables 7 and 8 and are summarized below description; implications are discussed in the following section.

Chapter 4. Results

4.1. Factor analysis

4.1.1. Factor analysis for antecedents

The results of factor analysis of five antecedent factors are presented in table 3. Fifteen antecedents are loaded significantly on the five factors. It was found out that all of the five factors shown as having an eigenvalue greater than one, while the “cumulative variance explained” is up to 78.176%.

All other constructs are measured by at least three items, which is suggested to avoid problems with identification, negative variance estimates, and non-convergence (Bollen 1989). The reliability of each construct, as assessed by its scale composite reliability (Bagozzi and Yi 1988), is also included in Table 3. The standard deviation of each item on the antecedents of switching costs scale is presented in table 4. The score and the standard deviation request respondent's rating of the frequency with which they engaged in each of the relationship identified on the antecedents of switching costs. The score will range from 1 to 5. The item with the smallest standard deviation (0.636) was ‘Supplier holds good relation with same trades’. The item with the largest standard deviation (0.893) was ‘Product is high uniqueness’. The Cronbach's α value of

every factor (ranging from .7723 to .9164, see Table 3) is much higher than 0.6. The final versions of the five antecedent scales demonstrated well reliability as well as the convergent and discrimination validity.

The mean level of first factor” Network centrality” is from 2.25 to 2.48. It implies that the supplier have the fair power to affect other suppliers to deal business with buyers. The mean level of second factor” Network density” is from 3.47 to 3.61. It implies that the supplier establishes well relation with other suppliers. The mean level of third factor” Product complexity” is from 2.97 to 3.27. It implies the characteristic of supplier’s product is ordinary to affect buyers. The mean level of forth factor” Social tie” is from 3.58 to 3.90. It implies that the supplier establishes well relation with downstream buyers. The mean level of last factor” Trust” is from 3.66 to 3.95. It implies that the supplier establishes honest and reliable relation with downstream buyers.

Table 5 displays the descriptive statistic and correlation matrix of 5 factors of antecedents and 3 switching costs.

Table 3

Rotated Component Matrix (a) of Antecedents of Switching Costs

	Component				
	Centrality	Density	Social Tie	Complexity	Trust
Based on the existed supplier's influence, it is harder to deal business with new supplier.	.941	-.015	-.025	.058	.044
Based on the existed supplier's influence, the date of delivery would lose at your company.	.923	-.003	-.001	.181	.012
Based on the existed supplier's influence, customers would not place purchase order to your company.	.883	.017	-.099	.102	-.049
Supplier usually contacts with same trades	-.028	.893	.047	.094	.129
Supplier holds good relation with same trades	.032	.852	.203	.061	.106
Supplier is active at supply and marketing field.	-.002	.847	-.033	.116	.209
Each other is closely relation	.024	-.047	.900	.034	.161
Usually communicates with each other.	-.080	.128	.851	-.008	.144
Will not worry to gain extra advantage with each other.	-.062	.111	.807	.075	.009
High uniqueness.	.143	.085	.116	.907	.120
Unable to take it over.	.202	-.006	.093	.864	.050
Unable to imitate	.008	.201	-.089	.783	.134
Both parties think each other is reliable partner.	.154	.140	.024	.087	.820
Both parties will practice promise.	-.038	.225	.208	.192	.807
Both parties recognize each other.	-.101	.092	.104	.044	.767
Eigenvalues	2.267	2.399	2.324	2.308	2.068
% of Variance	26.027	19.701	12.975	10.521	8.952
Cumulative %	26.027	45.728	58.703	69.224	78.176
α =	.9164	.8633	.8312	.8416	.7723

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

Table 4

Descriptive Statistics of Antecedents

	Mean	Std. Deviation
Network centrality (3 items, $\alpha=.9164$)		
Based on the existed supplier's influence, it is harder to deal business with new supplier.	2.48	.782
Based on the existed supplier's influence, the date of delivery would lose at your company.	2.39	.787
Based on the existed supplier's influence, customers would not place purchase order to your company.	2.35	.754
Network density (3 items, $\alpha=.8633$)		
Supplier usually contacts with same trades	3.47	.721
Supplier holds good relation with same trades	3.61	.636
Supplier is active at supply and marketing field.	3.51	.659
Product complexity(3 items, $\alpha=.8416$)		
High uniqueness.	3.21	.893
Unable to take it over.	3.27	.835
Unable to imitate	2.97	.884
Social tie (3 items, $\alpha=.8312$)		
Each other is closely relation	3.58	.830
Usually communicates with each other.	3.90	.720
Will not worry to gain extra advantage with each other.	3.89	.788
Trust (3 items, $\alpha=.7723$)		
Both parties think each other is reliable partner.	3.66	.782
Both parties will practice promise.	3.72	.730
Both parties recognize each other.	3.95	.699

Table 5

The descriptive statistics and Correlation Matrix

	Mean	Standard Dev.	NC	ND	PC	SOCIAL	TRU	STRUCTUR	RELATION
NC network centrality	2.3919	0.733	1						
ND network density	3.5055	0.5845	0.0195	1					
PC product complexity	3.0769	0.7554	0.2221*	.1994*	1				
SOCIAL social tie	3.8278	0.6892	-0.1464	0.1146	0.0573	1			
TRU trust	3.7179	0.6225	-0.0301	0.2813**	0.1496	.2142*	1		
STRUCTUR structural switching cost	2.9143	0.7448	0.3079**	0.0014	0.2111*	-0.031	-0.1788*	1	
RELATION relational switching cost	3.7839	0.5125	-0.1072	0.2914**	0.1677	0.3560***	0.3050**	-0.1149	1
TRANSACT transactional switching cost	3.5385	0.6257	0.0416	0.1835*	-0.0523	0.1509	0.2691**	0.2643**	0.2231*

*p<.05, one-tailed. **p<.01, one-tailed. ***p<.001, one-tailed.

4.1.2. Factor analysis for switching cost

After analyzing the antecedent factors, scale measurement of the switching cost and consequence constructs were developed and tested in the same iterative manner, which was described in above. The results of factor analysis of Switching Cost factors are presented in table 6 and 7. Twelve items are loaded significantly on the three factors. It was found that all of the five factors shown as having an eigenvalue of greater than one while the “cumulative variance explained” is up to 68.394%.

The final versions of the three switching costs (See Table 6) demonstrated good reliability (coefficient alphas ranging from .8219 to .8598) as well as the convergent and discriminated validity. The standard deviation of each item on the switching costs scale is presented in table 7. The score and the standard deviation request respondent’s rating of the frequency with which they engaged in each of the relationship identified on the switching costs. The score will range from 1 to 5. The item with the smallest standard division (0.523) was ‘There are well interaction between supplier and our company.’ The item with the largest standard deviation (1.037) was ‘Switching to a new service provider would involve some up-front costs (Set-up fees, membership fees, deposits, etc.)’.

The mean level of first factor” Structural Switching Costs” is from 2.72 to 3.15. It implies that the buyer should pay the fair exchange cost to apply other supplier’s material in the process. The mean level of second factor” Relational Switching Costs” is from 3.63 to 3.87. It implies that the supplier maintains good business partnership with

buyer. The mean level of last factor” Transactional Switching Costs” is from 3.44 to 3.53. It implies that the buyer should spend much effort to apply new source.

Table 6

Rotated Component Matrix (a) of Switching Costs

	Component		
	Structural Switching Costs	Transactional Switching Costs	Relational Switching Costs
New device should be repaired much more frequent	.842	.095	-.043
Switching to a new service provider would involve some up-front costs (Set-up fees, membership fees, deposits, etc.)	.840	.209	.010
Existed equipment should be idled	.833	.063	-.068
Replacing new equipment for new source	.752	-.066	-.062
The process of starting up with a new material is a long time.	.673	.226	.053
Spending much time to recognize a new supplier	.123	.856	.096
Spending much more time to collect new supplier's information	.105	.800	.067
There is unexpected trouble	.146	.800	.128
Supplier could not offer ideal products	.046	.777	.126
It is pleasure to cooperate with supplier	-.133	.111	.873
There is a well friendship between supplier and our staff	.032	.149	.846
There is well interaction between supplier and our staff.	-.003	.098	.838
Eigenvalues	3.196	2.773	2.238
% of Variance	26.63	23.11	18.65
Cumulative %	26.63	49.74	68.39
α^2	.8598	.8442	.8219

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Table 7

Descriptive Statistics of Switching Costs

	Mean	Std. Deviation
Structural Switching Costs(5 items, $\alpha=.8598$)		
1 ∙ Replacing new equipment for new source	2.80	.943
2 ∙ New device should be repaired much more frequent	2.74	.864
3 ∙ Existed equipment should be idled	2.72	.939
4 ∙ Switching to a new service provider would involve some up-front costs (Set-up fees, membership fees, deposits, etc.)	3.13	1.037
5 ∙ The process of starting up with a new material is a long time.	3.15	.962
Relational Switching Costs(3 items, $\alpha=.8219$)		
1 ∙ There is a well friendship between supplier and our staff.	3.63	.661
2 ∙ There is well interaction between supplier and our staff.	3.80	.564
3 ∙ There is well interaction between supplier and our company.	3.87	.523
Transactional Switching Costs(4 items, $\alpha=.8442$)		
1 ∙ Supplier could not offer ideal products	3.46	.855
2 ∙ Spending much time to recognize a new supplier	3.44	.756
3 ∙ Spending much more time to collect new supplier information	3.53	.747
4 ∙ There is unexpected trouble	3.68	.698

4.2. Regression analysis

4.2.1. The relationship between antecedent factors and switching costs

The independent variables of antecedents consisted of network centrality, network density, product complexity, social tie, and trust. The dependent variables include the structural, relational, and transactional switching costs. The result of the regression analysis is in Table 8.

In the regression model, variation in antecedents explained 14.6%, 24.9%, and 9.4% (Adjust R^2) of the variance in the dimensions of structural, relational, and transactional switching costs. Their F values are 3.911, 7.087, and 4.200 respectively and all of them show a statistic significance ($P < 0.01$).

We find the significant support for H1a ($b=3.093$, $p < .01$) and H2b ($b=2.695$, $P < 0.1$), but H1b, H2a and H2c are insignificant support. Regard network factors, network centrality of supplier will increase the structural switching costs, in another word is more network centrality of supplier will, more the tangle switching costs. Network density of supplier will increase the relational switching cost that means the network density of supplier will affect heavily the personal relationship between supplier and buyer. There is insignificant support between the network centrality of supplier and relational switching costs. It is possible that the strength of supplier's network centrality is neutrality to buyer's relational switching costs. Besides, whether the supplier's network density is high or not, buyer's structural switching costs will be not affected.

The results of H3a ($b=2.36$, $p < .05$) and H3b ($b=2.29$, $p < .05$) are significant support. We could recognize that greater perceived product complexity will raise the structural

and relational switching costs.

Regarding dyadic factors, strong support is offered for H4a ($b=3.665$, $p<0.001$), the social tie is tighten to relational switching costs. The results of H5a ($b=-2.07$, $P<.05$), H5b (2.279 , $P<.001$), and H5c ($b=2.943$, $p<0.01$). We have to mention the result of H5a, it offers an opposite result. That is greater perceived trust between supplier and buyer will be associated with “lower” structural switching costs. It conflicts to my hypothesis. Whether buyer will worry about tangle asset loss to search for new supplier of key component or not, it is a worth for our thinking. Besides, it means that it is easy to build trust between supplier and buyer at Information Technology industry or not? Alternatively, it is just a special situation in Chinese environment.

4.2.2. The relationship between switching costs and Intention to stay

The dimensions of switching costs are used as independent variables. The dependent variable is “Intention to stay”. Table 9 is the result of the regression model. It explained 15.2% (Adjust R^2) of the variance in the dimension of Intention to stay. The F value is 6.481 and showed a statistic significance ($P<0.001$).

The results supports the hypothesized effects of the relational ($b=3.744$, $p<.001$) and transactional ($b=2.312$, $p<.05$) switching cost types on intention to stay. I feel puzzled that the result of H6a, Greater perceived structural switching costs will be associated with higher buyer’s intentions to stay with an incumbent, is insignificant support. It means that structural switching costs are a neutral factor to affect buyer finding a key component vender at IT industry. Overall, the fit statistics indicate a very good fit of the

measurement model.

Table 8

	Standardized estimated		
	structural switching costs	relational switching costs	transactional switching costs
Hypothesis 1: network centrality	(a) 3.106**	(b) -0.572	--
Hypothesis 2: network density	(a) -0.123	(b) 2.695*	(c) 0.195
Hypothesis 3: product complexity	(a) 2.378*	(b) 2.291*	--
Hypothesis 4: social tie	--	(a) 3.665***	(b) 1.031
Hypothesis 5: trust	(a) -2.073*	(b) 2.729***	(c) 3.018**
	$R^2=.183$, Adjust $R^2=.146$, $F_{(4,88)}=3.911***$	$R^2=.289$, Adjust $R^2=.249$, $F_{(5,87)}=7.087***$	$R^2=.142$, Adjust $R^2=.094$, $F_{(3,89)}=4.200**$

* $p<.05$, one-tailed. ** $p<.01$, one-tailed. *** $p<.001$, one-tailed.

Table 9

Consequence structural model
Effect on Intention to stay

	Standardized estimated Intention to stay	Supported
Hypothesis 6(a): structural switching cost	0.286	No.
Hypothesis 6(b): relational switching cost	3.744***	Yes
Hypothesis 6(c): transactional switching cost	2.312*	Yes
	$R^2=.179$, Adjust $R^2=.152$, $F_{(5,87)}=6.481***$	

* $p<.05$, one-tailed. ** $p<.01$, one-tailed. *** $p<.001$, one-tailed.

Chapter 5. Conclusion and Discussion

5.1. Conclusion

After doing the hypothesis, data collection, and analysis, there are results of study. Whether the results are mapping to the expectations or not. Apocalypses are what we expect. There would be concluded into three major contributions at this research. First, a typology of the switching costs that buyers perceive as well as validated scales for measuring those costs is prepared. We also disclose regular support for four distinct buyers' switching costs: idle equipment loss costs, set-up costs, personal relationship loss costs and economic risk costs. Three higher order switching cost types are comprised by the four switching costs: structural, relational, and transactional switching costs. Those are given the size of the writing from which the typology is drawn, its consistency across the industries studied, and its parsimonious nature, we think that the typology should provide a firm establishment for conceptualizing the character of switching costs for industrial key-components. I would like to suggest that future research would note those scales to settle with our understanding by discovering its purpose in other contexts. As the scales would be modified to fit particular conditions, perceptions of the three major switching cost types should be found whenever switching is undoubtedly defined. There is a key point to reminder, however, that with lots key parts; buyers can apply new offerings without wholly switching to them. Regarding the condition, several costs are associated with using a new supplying will be minor or nonexistent, and the term switching costs may be unsuitable. To entirely distinguish the

appropriate contexts for using the terms switching costs, adoption costs, and examination costs, and to categorize any differences in the types of costs perceived in each context is left to future researchers.

Second, a hypothetical structure of the antecedents that impel buyer switching cost perceptions is found at this research. We find that three categories of antecedents, supplier, and buyer's network characteristics and supplier establishes partnership relations, which can significantly influence the switching costs that buyers observe. Prior switching cost antecedent research (e.g., Alba and Hutchinson 1987; Jackson 1985; Samuelson and Zeckhauser 1988) has not been testify again. Managers could observe a wide-ranging theoretical origin for designing very persuasive arguments of specific switching cost management programs.

Last, industries where objective switching costs are low, we find that the level and types of costs that buyers associate with switching explain their intentions better than what satisfaction does. Besides, finding major property for three types of buyer switching costs at this study, it proves to recent research on switching cost consequences (e.g., Bansal and Taylor 1999; Jones et al. 2000.)The result does highlight the requirement to appreciate, calculate, and cope with switching cost perceptions, when this does not advise that suppliers should desert the quest of customer satisfaction.

5.2. Discussion and Implication

5.2.1. The buyers' Switching Cost Typology

Lower levels of cooperation and higher levels of conflict (Frazier and Antia 1995)

increasingly characterize current business; making partnerships based on shared goals more importantly. The results of this study suggest that managers should carefully examine a goal set prior to investing in the relationship between buyer and supplier. Because identification is associated with the formation of loyalty commitment, managers who merely evaluate suppliers on functional characteristics (i.e., scale, position, uniqueness) unintentionally overlook important features like shared expectations and business values. While prior experience that reveals the buyer's position is required before allegiance will form, goal analysis may be a first step in preventing wasted investments. Likewise, buyers should be aware of the implications of committing credible pledges to buyers as a way of enticing reciprocal investments. Buyers that pledge exclusive representation or non-redeployable assets may unintentionally lock themselves into undesirable relationships while simultaneously reducing alternatives (David I Gilliland, Daniel C Bello 2002).

This research affords managers a set of tools and a structure designed to help conceptualize, measure, and manage buyers' switching costs. The five-facet typology developed in this study provides a granular representation of manufacturing industry switching costs, allowing researchers and practitioners to more finely distinguish different switching cost elements and to consider their links with other constructs and practices. The more parsimonious three-factor: higher order switching cost typology addresses researchers, and practitioners need to conceptualize complex constructs more succinctly. Depending on the demands of the question being pursued, the appropriate level of the typology can be employed. For applied managerial decisions or industry

segmentation, examination of the specific facets of the five-facet model is more appropriate. For conceptualizing areas for expanding switching cost research, the higher order model may be more useful.

5.2.2. The Antecedents of Switching Costs

Structural Switching Costs

Buyers' structural switching cost perceptions may be increased by augmenting perceptions of product complexity, by encouraging broader product use, and by reducing the switching experience of those acquired. Managers can increase the perceived complexity of their offerings via mixed price bundling; by offering loyalty programs; and, as noted above, by informing customers of the variety of products offered. Adding intangible technical services, such as: we could build on recent work that defines and measures specific mechanisms used to coordinate business relationships (i.e., Bello and Gilliland 1997; Celly and Frazier 1996) by examining business transactions and should increase perceptions of complexity and structural switching costs. Finally, as noted above, a greater emphasis on defensive, over offensive, marketing should decrease the switching experience of a firm's customers and increase its structural switching costs over time.

Relational Switching Costs

Buyers that seek the benefits of a long-term relationship can through contractual and investment pledges, bind themselves to the supplier in a way that increases their own vulnerability. It is up to the supplier, through its own investments and behaviors, to

determine the nature of the buyer's bond, because salient demonstrations in the historic relationship of common business goals and objectives are required for loyalty commitment to form (David I Gilliland, Daniel C Bello 1997). Well relationship of double sides, single buyer and supplier, will make the trade smooth, but we get the result from this study that buyers' switching costs may be increased under this situation. The ways would be solved not only by enhancing their awareness of supplier's heterogeneity, by leading in broader product source, but also by reducing dependence with existed venders. Above suggestions affect a temporary solution to a problem, but we should to find out a long-term solution to get at the root. To strengthen buyer herself ability is what we think over. At a supplier's market, buyer devotes much effort but harvest few result. After exchanging this buyer's inferiority, the influence of relational switching costs would be obviously restrained.

Transactional Switching Costs

Facing the influence of the transactional switching costs, we could get suggests form the research that proprietors' perceptions of transactional switching costs may be increased by raising their perceptions of trust. One approach for increasing trust is forming base on timing and credit between buyer and supplier. Both parties always try to meet the opposite party's request. In order to reduce the switching costs, buyer should search for more suppliers to balance this position. It also lowers the dependence to existed one.

In order to maintain the market share, supplier will try any way to tie customers.

Within supplier's enduring degree, bundling products and services are considered to increase buyers' switching costs. While past bundling research has focused on firms' ability to maximize sales profits through bundling (e.g., Stremersch and Tellis 2002; Venkatesh and Mahajan 1993), to weight the results of this study and industry, it advise us to increase ability of customer going on to cooperate with existing one by increasing the closing interaction. It is a solid method to achieve what both sides demanding.

Finally, facing a competitive market, buyer wants to add her ability to resist competitor. Offer right products to right people are a supplier's well performance. The function of cost down usually applies to achieve the target. Therefore, supplier should do an integrated plan from initial to end period to meet what customer demands. In other words, seeking to increase switching cost based retention should target customers with social tie and high trust to avoid avid switchers, as they are likely to switch again in the future. For example, at the initial period, an active visiting can make potential customers to accept new product or service. Alternatively, manufactory can be targeted early in their life cycles, a practice that power module suppliers have honed on telecommunication equipment companies and operating panel companies. When potential customers cannot be surveyed or known, firms can de-emphasize customer acquisition programs that heavily reward switching. A greater emphasis on the basic value proposition and building the switching cost perceptions of existing customers (e.g., defensive marketing) should lead to slower but more sustainable customer growth.

Opposite to expectations, there is a negative relationship between trust and buyers'

structural switching cost perceptions. Buyers may gain lower structural switching costs while there is higher trust between supplier and buyer. It is an interesting appearance existed at IT industry. Alternatively, buyers who recognize higher structural switching costs may also perceive higher costs associated with trust, leading them to make much more credit. Further research is looked for better identify with this relationship.

The research types of switching costs become visible to impel buyers' intentions to stay with their existed providers. Specifically, how to rise current buyers' perceptions of the risks involved in switching, the problems of estimating alternatives, the real hassles of building a new relationship, and the finding out necessary to use a new supplier will increase customers' probability of remaining in an existing relationship. Besides, raising the probable loss of benefits or money (Cannon and Homburg 2001) will increase customers' probability of staying, even when intangible assets are involved. At last, the high strength of buyers' emotional links with a supplier's expression will enhance buyer's probability of staying, even in industries with seldom or no side visit. All of the three types, we discover that structural switching costs have the weakest impact-- this study suggests that relational and transactional costs appear larger when customers consider switching. Nevertheless, to sum about the relative force of the switching cost effects must be taken care.

How to manage buyers' perceived switching costs, scholars are reminded of following potential problems allied with relying on barriers to exit (Fornell 1992): buyer's awareness of switching costs may impede buyer's acquisition, and (b) switching

costs may be neutralized or eliminated by external forces. The latter concern merely suggests that suppliers should not involve many efforts to maintain customer satisfaction and they must regularly watch switching cost perceptions. The past concern offers that switching costs must be concentrated their attention on buyer's acquisition. While the customer retention applications of model have been emphasized, the results are equally related to customer's acquisition management. For example, suppliers look for minor customers' potential perceptions of the complexity of their products in order to reduce the costs associated with switching "in." For years, TSMC stresses her delivery is Fast, Right, Cheap, and ETDB to satisfy what customers require. However, it is aware of that Fornell's concerns emphasize the potential problem of an overaggressive apply of switching costs. Even if few buyers carry out the hyper rational future switching cost assessments presumed by economists (e.g., Beggs and Klemperer 1992), potential buyers may search for ways to keep away from relationships with suppliers a limiting conditional contract, and existing buyers may become disappointed and try to find opportunities to damage suppliers that unduly constrict them (Jones and Sasser 1995). Thus, we must control switching costs judiciously, lessening them for potential suppliers and increasing them in ways that add value for existing buyers' experiences (Thomas A Burnham, Judy K Frels, and Vijay Mahajan 2003.)

5.3. Limitations

Among the limitations to this study, although the results appear useful, three main limitations of the research must be considered. First, the generalizability of our results is

in question. Although we gathered data from different types of industries, whether the findings hold in other industrial settings and contexts other than partnership must be explored. For example, although we found structural switching cost to have no influence on the level of intention to stay with incumbent provider in our study, it remains to be seen whether this finding is robust across different industrial contexts.

Second, we relied on data from a single member of the dyad, the buyer. Although data collection with the upstream supplier is uncommon, obtaining corresponding viewpoints from downstream buyers would have made our study stronger. Additional research based on data collected from both sides of the dyad would yield insight into areas of divergence.

The last, specification error could be a problem, even given the strong explanatory power of our model. Because our study is an early attempt to build and test a conceptual framework of intention to stay at the existing supplier, important factors might have been omitted. Extended conceptual frameworks should be developed and examined empirically in the future.

5.4. Future research

Additional research will be wished to explore network effects more deeply. In particular, it could prove valuable that supply network to the principal's actions attributes a greater considerate of the motives. For example, strong common goals exist between the supplier and buyer (e.g., enhanced trust), densely connected buyers as unfair but rather than a necessary and justifiable action to safeguard system, interests

may not view the supplier. Self-policing efforts by suppliers also would be interesting to explore in such a line of research. Moreover, although we controlled for one type of private network (i.e., strategical supplier), the impact of other types of formal networks (e.g., industry trade associations) should be examined in the future.

Besides, regarding the opposition of expectations, there is a negative relationship between trust and buyers' structural switching cost perceptions. Future research could discover the other industry to prove the situation. In addition, the following research also uses the similar model of antecedents and switching cost factors to test other industries. We would expect there is a wonder result to academic and industry circle. The result that supports the hypothesis is very well. If there was an oppositional output, it is worth to create much more research issues for following study.

[Reference]

- Alba, Joseph W. and J. Wesley Hutchinson. 1987. "Dimensions of Consumer Expertise." *Journal of Consumer Research* 13 (March): 411-- 454.
- Allen, Natalie J. and John P. Meyer. 1990. "The Measurement and Antecedents of Affective, Continuance and Normative Commitment to the Organization." *Journal of Occupational Psychology* 63:1-18.
- Anderson, Erin and Barton Weitz 1992. "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," *Journal of Marketing Research*, 29 (February), 18-34.
- Anderson, James C., HRkan Hakansson, and Jan Johansson 1994. "Dyadic Business Relationships Within a Network Context," *Journal of Marketing*, 58 (October), 1-15.
- Anderson, Erin and Barton Weitz. 1989. "Determinants of Continuity in Conventional Industrial Channel Dyads." *Marketing Science* 8 (Fall): 310-323.
- Anderson, Eugene and Mary W. Sullivan. 1993. "The Antecedents and Consequences of Customer Satisfaction for Firms." *Marketing Science* 12 (spring): 125-143.
- Anderson, James and David Gerbing. 1988. "An Updated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment," *Journal of Marketing Research*, 25 (May), 186-92.
- Bagozzi, Richard. 1988. "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, 16 (Spring), 74-95.
- Bansal, Havir S. and Shirley F. Taylor. 1999. "The Service Provider Switching Model (SPSM)." *Journal of Service Research* 2 (2): 200-- 218.
- Beggs, Alan and Paul Klemperer. 1992. "Multi-Period Competition With Switching Costs." *Econometrica* 60 (3): 651-666.
- Bettman, James R. 1973. "Perceived Risk and Its Components: A Model and Empirical Test," *Journal of Marketing Research* 10 (May): 184-- 190.
- Bollen, Kenneth A. 1989. *Structural Equations With Latent Variables*. New York: John Wiley.
- Brass, Daniel and Marlene Burkhardt. 1993. "Potential Power and Power Use: An Investigation of Structure and Behavior," *Academy of Management Journal*, 36 (3), 441-70.
- Brown, James R., Robert EF. Lusch, and Carolyn Y. Nicholson. 1995. "Power and Relationship Commitment: Their Impact on Marketing Channel Member Performance." *Journal of Retailing* 71 (Winter): 363-392.
- Brown, James, Chekitan Dev, and Dong-Jin Lee. 2000. "Managing Marketing Channel Opportunism: The Efficacy of Alternative Governance Mechanisms," *Journal of Marketing*, 64 (April), 51-65.
- Buchanan, Lauranne. 1992. "Vertical Trade Relationships: The Role of Dependence and Symmetry in Attaining Organizational Goals," *Journal of Marketing Research*, 29 (February), 65-76.
- Burt, Ronald. 1987. "Social Contagion and Innovation: Cohesion Versus Structural Equivalence," *American Journal of Sociology*, 92 (May), 1287-335.
- Cannon, Joseph P. and Christian Homburg. 2001. "Buyer-Seller Relationships and Customer Firm Costs." *Journal of Marketing* 65 (January): 29-43.
- Carlton, D. W. & J. M. Perloff (1994), "Industrial Organization,"

- Celly, Kirti Sawhney and Gary L. Frazier. 1996. "Outcome-Based and Behavior-Based Coordination Efforts in Channel Relationships." *Journal of Marketing Research* 33 (May): 200-210.
- Cheng, J. 1983. "Interdependence and Coordination in Organizations: A Role-System Analysis," *Academy of Management Journal*, 26 (March), 156-62.
- Crosby, Lawrence A., Kenneth R. Evans, and Deborah Cowles. 1990. "Relationship Quality in Services Selling: An Interpersonal Influence Perspective." *Journal of Marketing* 54 (July): 68-81.
- David I. Gilliland. and Bello, Daniel C. 1997. "The Effect of Output Controls, Process Controls, and Flexibility on Export Channel Performance." *Journal of Marketing* 61 (January): 22-38.
- Doney, Patricia M. and Joseph P. Cannon. 1997. "An Examination of the Nature of Trust in Buyer-Seller Relationships " *Journal of Marketing* 61 (April): 35-51.
- Dwyer, ft Robert, Paul Schurr, and Sejo Oh. 1987. "Developing Buyer-Seller Relationships," *Journal of Marketing*, 51 (April), 11-27.
- Eliashberg, Jehoshua and Thomas S. Robertson. 1988. "New Product Preannouncing Behavior: A Market Signaling Study." *Journal of Marketing Research* 25 (August): 282-292.
- Fombrun, Charles 1986. "Structural Dynamics Within and Between Organizations," *Administrative Science Quarterly*, 31 (September), 403-21.
- Fornell, Claes. 1992. "A National Customer Satisfaction Barometer: The Swedish Experience:" *Journal of Marketing* 56 (January): 6-21.
- Fournier, Susan and David Glen Mick. 1999. "Rediscovering Satisfaction." *Journal of Marketing* 63 (October): 5-23.
- Frazier, Gary. 1983. "Interorganizational Exchange Behavior in Marketing Channels: A Broadened Perspective," *Journal of Marketing*, 47 (Fall), 68-79.
- Frazier, Gary L., Rody, Raymond C. 1991 "The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels." *Journal of Marketing*. Chicago 55 (Jan.) : 52-69
- Gatignon, Hubert and Thomas S. Robertson. 1992. *The Handbook of Consumer Behavior*. Eds. Thomas S. Robertson and Harold H. Kassarian. Englewood Cliffs, NJ: Prentice Hall.
- Grover, V. 1993 "An Empirical Derived Model for the Adoption of Customer-based IOS," *Decision Science*, (24:3), , pp.603-640.
- Gundlach, Gregory and Ernest Cadotte. 1994. "Exchange Interdependence and Interfirm Interaction: Research in a Simulated Channel Setting," *Journal of Marketing Research*, 31 (November), 516-33.
- Heide, Jan. 1994. "Interorganizational Governance in Marketing Channels," *Journal of Marketing*, 58 (January), 71-85.
- Heide, Jan B. and Allen M. Weiss. 1995. "Vendor Consideration and Switching Behavior for Buyers in High-Technology Markets." *Journal of Marketing* 59 (July): 30-43.
- Holak. Susan L. and Donald R. Lehmann. 1990. "Purchase Intentions and the Dimensions of Innovation: An Exploratory Model." *Journal of Product Innovation Management* 7:59-73.
- James C. Narus. 1984. "A Model of the Distributor's Perspective of Distributor-Buyer Working Relationships," *Journal of Marketing*, 48 (Fall), 62-74.
- James C. Narus. 1990. "A Model of Distributor Firm and Buyer Firm Working Partnerships," *Journal of Marketing*, 54 (January), 42-58.
- Jap, Sandy and Shankar Ganesan. 2000. "Control Mechanisms and the Relationship Life Cycle: Implications for Safeguarding Specific Investments and Developing Commitment," *Journal of Marketing Research*, 37 (May), 227-45.

- Jones, Michael A., David L. Mothersbaugh, and Sharon E. Beatty. 2000. "Switching Barriers and Repurchase Intentions in Services." *Journal of Retailing* 76 (2): 259-274.
- Jones, Thomas O. and W. Earl Sasser Jr. 1995. "Why Satisfied Customers Defect." *Harvard Business Review* 73 (1): 88-99.
- Joreskog, Karl G. and Dag Sorbom. 1993. LISREL 8 User's Reference Guide. Chicago: Scientific Software International. Katzenbach, Jon R. and Douglas K. Smith. 1993. "The Discipline of Teams," *Harvard Business Review*, 71 (March/April), 111-20.
- Kerin, Roger A., P. Rajan Varadarajan, and Robert A. Peterson. 1992. "First-Mover Advantage: A Synthesis, Conceptual Framework, and Research Propositions." *Journal of Marketing* 56 (October): 33-52.
- Krackhardt, David and Jeffrey Hansen. 1993. "Informal Networks: The Company Behind the Chart," *Harvard Business Review*, 71 (July/August), 104-11.
- Kumar, Nirmalya, Jonathan D. Hibbard, and Louis W. Stem. 1994. "The Nature and Consequences of Marketing Channel Intermediary Commitment," *Working Paper Series*, Report 94115. Cambridge, MA: Marketing Science Institute. ,
- Kumar, Nirmalya, Lisa Scheer, and Jan-Benedict Steenkamp. 1995. "The Effects of Perceived Interdependence on Dealer Attitudes," *Journal of Marketing Research*, 32 (August), 348-56.
- Lisa K. Scheer, and Jan-Benedict E. M. Steenkamp. 1995. "The Effects of Supplier Fairness on Vulnerable Resellers," *Journal of Marketing Research*, 32 (February), 54-65.
- Lichtenthal, J. David and David T. Wilson. 1992. "Becoming Market Oriented," *Journal of Business Research*, 24 (May), 191-207.
- Lusch, Robert and James Brown. .1996. "Interdependency, Contracting, and Relational Behavior in Marketing Channels," *Journal of Marketing*, 60 (October), 19-38.
- Mittal, Vikas and Wagner A. Kamakura. 2001. "Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Consumer Characteristics." *Journal of Marketing Research* 38 (1), 131-142.
- Moorman, Christine, Rohit Deshpande, and Gerald Zaltman. 1993. "Factors Affecting Trust in Market Research Relationships." *Journal of Marketing* 57 (January): 81-101.
- Morgan, Robert M. and Shelby D. Hunt, 1994. "The Commitment-Trust Theory of Relationship Marketing." *Journal of Marketing* 58 (July): 20-38.
- Noordewier, Thomas, George John, and John Nevin. 1990. "Performance Outcomes of Purchasing Arrangements in Industrial Buyer-Vendor Relationships," *Journal of Marketing*, 54 (October), 80-93.
- Porter, Michael E. 1980. *Competitive Strategy*. New York: Free Press.
- Ring, Peter Smith and Andrew H. Van de Ven. 1992. "Structuring Cooperative Relationships Between Organizations," *Strategic Management Journal* 13 (October): 483-498.
- Rogers, Everett M. 1995. *Diffusion of Innovations*. New York: Free Press.
- Schmalensee, Richard. 1982. "Production Differentiation Advantages of Pioneering Brands." *American Economic Review* 27:349-365.
- Sheth, Jagdish N. and Atul Parvatiyar. 1995. "Relationship Marketing in Consumer Markets: Antecedents and Consequences." *Journal of the Academy of Marketing Science* 23 (fall): 255-272.
- Sitkin, Sim and Robert Bies. 1994. *The Legalistic Organization*. Thousand Oaks, CA: Sage Publications.

- Stremersch, Stefan and Gerard J. Tellis. 2002. "Strategic Bundling of Products and Prices: A New Synthesis for Marketing." *Journal of Marketing* 66 (January): 55-72.
- Szymanski, David M. and David H. Renard. 2001. "Customer Satisfaction: A Meta-Analysis of Empirical Evidence." *Journal of the Academy of Marketing Science* 29 (1): 16-35.

Questionnaires

各位企業先進您好!

這是一份有關產業界系統廠商與主要協力廠商間互動情形的調查研究，若貴公司的協力廠商有很多家時，請以貴公司認為**最重要或最熟悉**之主要協力廠商，做為填答下列問題之依據。本問卷採無記名方式進行調查，所收集的資料用於本公司及學術使用，請您放心填寫並逐條詳細勾選，以免成為廢卷！。

感謝您百忙之中撥冗填寫本問卷！ 敬祝

平安快樂

東海大學管理學院 EMBA

指導教授：張國雄 博士

研 究 生：李西田

公元 2003 年十一月

第一部分 此部份是想了解，貴公司與主要協力廠商間的**互動情形**。若貴公司的協力廠商有很多家時，請以貴公司認為**最重要或最熟悉**之主要協力廠商，做為填答下列問題之依據。

一、貴公司與該協力廠商間，

	非常同意	同意	普通	不同意	非常不同意
1、彼此有很多互動					
2、彼此的關係甚為密切					
3、彼此經常溝通					
4、彼此都不用擔心被對方佔便宜					
5、皆認定彼此是可靠的合作夥伴					
6、彼此都會信守承諾					
7、彼此相互瞭解					
8、彼此非有共識					
9、彼此分享相關的訊息					

二、貴公司與該協力廠商間之新產品開發合作關係，

	非常同意	同意	普通	不同意	非常不同意
1、共同開發新產品					
2、共同開發設計					
3、共同開發測試方法					
4、共同解決設計及技術問題					

三、貴公司使用該協力廠商所供應的原物料，

1、投入許多安規認證成本					
2、投入許多內部驗證成本					
3、若中止關係要重新取得安規認證					

四、貴公司對協力廠之依賴

1、該協力廠商的地位很難被替代					
2、貴公司很依賴該協力廠商					
3、該協力廠商若停止供貨，貴公司很難立即找到其他貨源					
4、該協力廠商對貴公司很重要					
5、貴公司對該協力廠商的採購總量佔協力廠商總銷售量比例(請以百分比填寫) %					
6、貴公司對該協力廠商的利潤創造(請以百分比填寫) %					

五、協力廠對貴公司之依賴

1、對該協力廠商而言，貴公司的地位很難被替代					
2、該協力廠商很依賴貴公司					
3、貴公司對該協力廠商具有很強議價優勢					
4、貴公司對該協力廠商而言是很重要的					

六、與現有協力廠商繼續合作的意願 **Intentions to Stay with Incumbent Supplier**

1、貴公司想要與該協力廠商維持長久合作關係					
2、貴公司不會想找新的協力廠商合作					

第二部分 此部份想要了解貴公司之**主要協力廠商**的情形。

一、該協力廠商所供應的原物料與服務，

	非常同意	同意	普通	不同意	非常不同意
1、具有高度獨特性					
2、具有高度不可取代性					
3、無法輕易被模仿					

二、該協力廠商，

1、擁有準時交貨的優勢					
2、擁有品質穩定的優勢					
3、該協力廠商之銷售人員擁有服務顧客的優勢					

三、該協力廠商於產業供應商網路體系中，

1、經常與其他廠商聯繫					
2、與其他廠商的關係很好					
3、於供銷網路的活動非常活躍					
4、對其他廠商的影響力很大，造成貴公司無法取得貨源					
5、對其他廠商的影響力很大，造成貴公司無法如期交貨					
6、對其他廠商的影響力很大，造成貴公司無法接到其他廠商 訂單					
7、是其他廠商學習的對象					

第三部分 此部份想要了解**貴公司**之情形。

	非常同意	同意	普通	不同意	非常不同意
1、該協力廠商對 貴公司的需求非常重視					
2、該協力廠商常漠視 貴公司提出的需求					
3、貴公司對該協力廠商具有很強議價優勢					
4、貴公司於同業中具有獨占力					
5、貴公司研發產品的時間比同業短					
6、貴公司研發的產品成本比同業的類似產品低					
7、貴公司研發的產品很快能導入市場					

第四部分 此部份是想了解，如果貴公司**轉換新的協力廠商**，會對貴公司產生那些影響。

1、貴公司必須重置新生產設備					
2、貴公司新設備之維修率提高					
3、貴公司舊設備將會閒置					
4、貴公司將投入更多的前置作業成本，例如：安裝費用、人員費用、押金					
5、新原物料導入應用將很耗時					
6、原物料轉換的過程是不順暢的					
7、貴公司人員學習使用新供應商的產品，將很耗費時間					
8、貴公司人員瞭解新供應商的產品使用，並不耗時					
9、貴公司人員對新產品的使用，需要努力學習一段時間才能順利					
10、可能會不知道如何去與新協力廠商溝通					
11、貴公司人員與該協力廠商人員就像好朋友一樣					
12、貴公司人員與現有協力廠商人員合作愉快					
13、若更換協力廠商，將造成貴公司人員重新建人際關係					
14、貴公司人員與現有協力廠商人員互動良好					
15、該協力廠商有很好的品牌形象					
16、貴公司會以與該協力廠商合作為榮					
17、與該協力廠商合作，對貴公司有聲譽有正面影響					
18、貴公司不關心協力廠商的品牌、公司名稱					
19、協力廠商的產品可能不如預期理想					
20、會花費許多時間去熟悉新協力廠商					
21、將會花費許多時間去搜集新協力廠商之資訊					
22、可能會遭遇不可預期的麻煩					
23、需要花費許多時間去評估新的協力廠商					
24、需要投入很多精力去評估新的協力廠商					
25、需投入很多人力去評估新的協力廠商					
26、新的協力廠商樂意提供免費樣品					
27、新的協力廠商提供替代品的品質，較該協力廠商的產品佳					
28、新的協力廠商能滿足我的需求，提供完整的服務					

第六部分 產業與公司狀況

- 1、請問您的事業單位的產品/服務類別為：工業用電子產品 消費性電子產品 其他(請說明)_____
- 2、您認為該產品的產業環境競爭程度
非常激烈 激烈 普通 不激烈 非常不激烈
- 3、您認為該產業環境的技術、產品更新程度
非常頻繁 頻繁 普通 不頻繁 非常不頻繁
- 4、請問貴公司的從業員工人數
100人以下 100~499人 500~999人 1000~4999人 5000人以上
- 5、請問貴公司之2002年度營業額(請以仟美元計算之)
1,000以下 1,000~9,999 10,000~99,999 100,000~4999,999 500,000以上