

The Effect of Strategic Fit and Cooperative Relationships on the Small Suppliers' Performance*

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This paper analyzes the role of strategic fit, cooperation, and performance in small-sized subpart suppliers' interactions with large businesses. For this purpose, this paper analyzes survey data from 90 first-tier suppliers of Samsung Electronics and evaluates how strategic fit and cooperative relationships affect their performance. Empirical analysis suggests that strategic fit positively affects small companies' business and innovation performance. This finding aligns with theories arguing for strategies that accommodate specific business environments. In addition, strategic fit is crucial for innovativeness of SMEs (Small and Medium-sized Enterprises). With regard to forming relationships with large companies, findings also show that high quality technological and personnel cooperation boosts subpart suppliers' productivity and efficiency as notably reflected in SMEs' business performance. Moreover, such cooperation between small and large companies reinforces the benefits associated with strategic fit and innovation. This means that if the business environment of small-sized subpart suppliers is uncertain, harnessing differentiated strategies and pursuing collaborations with prime companies will produce innovative outcomes (e.g., increased patent publications). On the other hand, when degree of uncertainty is small, pursuing cost leadership strategies and collaborating with prime companies in areas, such as technology and personnel, will help small-sized subpart suppliers produce innovative outcomes. Based on these findings, this paper argues that choosing the right competitive strategy for a specific business context is intrinsically tied to (1) augmenting technological and human collaborations with prime companies, (2) improving the quality of these interactions, and (3) generating competitiveness among small subpart suppliers. Both competition and cooperation are necessary for strengthening the competitiveness of small companies.

Keywords : *Win-Win Growth, Cooperative Relationship, Strategic Fit, Performance*

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I. Introduction

Because competition is no longer only among business entities but is among business ecosystems, individual business entities must do more than augment their own competitiveness (Iansiti and Levien, 2004). To survive in today's global climate, they need to cooperate with other entities to form a business ecosystem, one in which thrives on co-evolution and co-existence (Eisenhardt and Galunic, 2000; Moore, 1993). SMEs' ability to supply subparts and other materials and large enterprises' ability to assemble and develop products determine an ecosystem's competitiveness (Fine, 1998). Thus should SMEs' competitive advantage falter, both the business ecosystem and the competitiveness of prime enterprises falter as well.

In heterogeneous markets,¹⁾ SMEs – with their strength in flexibility, R&D efficiency, innovation, and organizational culture (Mills and Schumann, 1985) – are the most proficient at evolving (Cooper, Gary, and Carolyn, 1986). Much research on SMEs argues for applying competitive strategies, that is, according to the uniqueness of its target business environment (Eisenhardt and Martin, 2000; Lee, Miller, Woo, and Son, 1993; Lukas, Tan, Hult, 2001; Teece, Pisano, and Shuen, 1992). Findings also show that SMEs' stance on the global market is influenced by their cooperative relationships with large companies. Such cooperation enables SMEs to further build its brand, to overcome its lack of resources, to achieve innovative outcomes, and to enter the global market with other large businesses. In Korea, majority of SMEs serves large companies working in the heavy-chemical industry and the SMEs sold intermediate goods or supply subparts to the large companies in domestic market. As the result, unfair business practices arise when the bargaining power of large companies overdevelops (Park and Lee, 2011);

1) A market made up of individuals or organizations with diverse needs for productions in a specific product class.

hence the need to establish apropos collaborative relationships between subcontractors and large businesses. This is vital for sustaining SMEs' performance (Eisenhardt and Galunic, 2000; Lee and Kang, 2006; Nalebuff and Brandenburg, 1996; Technovalue, 2006).

This paper investigates the role of competition and cooperation in the performance of Samsung Electronics' subpart suppliers. As part of a supply chain, their competitiveness is also important for competitiveness of large companies like Samsung Electronics as the recall accident of Galaxy Note 7 is showing. Therefore, This paper probes how SMEs' business outcomes are independently and concurrently affected by the strategic fit and their cooperative relationship with a large enterprise in case of Samsung Electronics' primary supplier partners.

II. Theoretical Background

2.1 Strategic Fit of SMEs

In order for an organization to achieve higher goals, it must first achieve an appropriate strategic fit; for example, because of the degree of uncertainty within business environments, the availability of strategies fluctuates. More specifically, in dynamic and unpredictable environments, the strategy of marketing differentiation or the strategy of innovation is the most appropriate. However, in static and predictable environments, the ideal strategy is cost competition (Eisenhardt and Martin, 2000; Teece et al., 1992). Firms tend to pursue creative innovation within uncertain business environment as differentiation is a necessity for them (March, 1991). In contrast, companies focusing on maximizing efficiency and attracting customers with high price elasticity use cost leadership strategies; thus they are less susceptible to unexpected changes (Miller, 1988). Companies that use cost strategies are less constrained by environmental uncertainty than companies that use differentiation strategies because focusing on the predictability of cost in relation to external factors attenuates the

line of product choices (Govindarajan, 1988). Indeed, empirical studies show a positive increase in performance when Korean companies engage business environments with the appropriate strategies (Lee et al., 1993). Through an investigation of 962 enterprises spanning over 28 industries in Korea, Choo, Yu and Limb (2009) deduces that the degree of strategic fit within a particular environment is most optimal for high achievers. In another investigation of 179 Korean SMEs, Kwon and Shin (2003)'s findings concur with Choo et al. (2009)' — that is, strategic fit in the business environment and in organizational structures increase business performance. To analyze the ramifications of strategic fit by subpart suppliers, this paper evaluates the relationship between environmental uncertainty and the choice of strategy used by subpart suppliers.

2.2 Small Firms as a Subcontractor in Korea

Due to providing large companies with subparts, numerous Korean SMEs have developed considerably over the past few decades. Since the 1980s, the government has been carrying out policies that foster the systematization and the creation of affiliations between large enterprises and SMEs. Several large enterprises have been focusing on vertical systemization to secure primary subpart suppliers. Consequently, SMEs' role as the primary subcontractor of large enterprises increased. By the late 1970s, the shares of SMEs being primary subcontractor hovered around 20 percent. By 1991, the shares skyrocketed to 75.7 percent (Department of Commerce Industry, 1996).

As a subcontractor, SMEs gain numerous advantages: specialization in the production process, efficiency in role sharing, reduction in information costs, and facilitation of technology spread. It also has the following disadvantages (Ryu, 2000). First, business transactions and concentration areas are bounded, curving the prospects of product development. Second, the ability to structure com-

petition space independently is limited. Third, company growth is tied to the growth of its business partners. Here, regardless of external changes, SMEs acts as a passive entities and a source of major concern is the so-called dual structure problem of SMEs being exploited and controlled. Dual structure refers to a polarized market, and depending on size, a company can be divided into two categories: (1) a primary market composed of large enterprises, or (2) a secondary market composed of SMEs. Such a structure is fraught with unfair business practices. Large enterprises, for example, exploit SMEs' low wages to reduce production costs. Their actions ultimately result in the acquisition of substantial profits. In Korea, another unfair advantage that reduces the cost of product supplies and polarizes the market is the practice of small businesses entering into informal contracts (Park and Lee, 2011).

However, as competition between ecosystems surges, the significance of SMEs' role as subcontractors will continue to develop. Therefore, improving the competitiveness of SMEs' supplementary roles is important not only to SMEs but to large enterprises as well; accordingly, extensive research has already been done into inventing schemes that improve SMEs' competitiveness. Proponents of this idea have emphasized the need to increase the performance of lower tier SMEs, arguing that external cooperation with large enterprises can help overcome SMEs' weak resource structure (Lee and Kang, 2006; Rhee, Park, and Jun, 2011).

2.3 Cooperative Relationship with Large Firms

Cooperation is generally defined as two or more independent entities operating under a shared objective of mutual expectations (Anderson and Narus, 1990; Mohr and Spekman, 1994). It also refers to the process of creating a psychological relationship, one that produces a mutually desirable outcome for individuals and groups (Ring and Van de Ven, 1994; Smith, Carrol, and Ashford,

1995). On the other hand, cooperation between enterprises deals with two phases (Kim and Kim, 2007): (1) formation of amicable relationships and (2) concerted performance. Forming relationships refers to the dimension of attitude; that is, it emphasizes qualitative aspects of relationships. Concerted performance refers to the behavioral dimension, representing the intensity of relationships. Both phases evaluate different aspects of relationships (Yoon, 2007). However, much of past studies interchanged these notions of cooperation (Hewett, Money, and Sharma, 2006). Degree of strength-representing the behavioral variable-signifies duration of cooperation (Yoon, 2007). Relationship quality-representing the attitude variable-predicts degree of satisfaction and potentiality of long-term prospects (Crosby, Evans, and Cowles, 1990). This research assesses cooperative relationship by bisecting it into the aforementioned behavioral and attitude dimensions.

From a social networking perspective, the frequency of interaction (or frequency of reciprocal actions) between two people denotes the strength of relationships (Granovetter, 1973). In other words, higher strength has a higher frequency. Moreover, higher strength is associated with increases in the number of interactions, contact time, and exchange of resources and information. Prior research on relationships suggests that strong relationships are an indication of mutual trust. Notably, strengthening a relationship naturally leads two people to share values, cultures, and private information, thereby facilitating communication, reciprocal learning processes, decreased transaction costs, and increased investments for future profits (Coleman, 1988; Granovetter, 1973; Sako, 1998); hence cooperation does not refer to a fixed notion but a continuation and fluctuation of relationship intensity (Kanter, 1994). However, this understanding requires a much broader examination of other kinds of cooperative actions. The research pulls from several fields, such as technology, manpower, finance, and sales to define the intensity of cooperation among companies.

Conversely, it defines relationship quality by degree of reciprocity (Crosby et al., 1990) or the overall evaluation of elements that denote level of maturity in relationships (Garbarino and Johnson, 1999). According to Anderson and Weitz (1989), relationship quality can also mean the will to accept short-term sacrifices to sustain or develop stable relationships. Relationship quality enriches not only the outcomes of short-term reciprocal exchanges, but also long-term prospects of relationships (De Wulf, Odekerken-Schroder and Iacobucci, 2001). This research, based on this notion of relationship quality, evaluates the association between cooperation satisfaction and cooperation endurance.

Contemporary research on the cooperation between large enterprises and SMEs surmises that degree of cooperation (representing the behavioral aspect) and relationship quality (representing the attitude aspect) positively affect SMEs' competitiveness (Lee and Kang, 2006; Norman and Ramirez, 1993; Swink, Sandving, and Mabert, 1996). Previous research on cooperation intensity (behavioral dimension) finds that cooperation on the level of sharing research developments, patent publications, technologies, finances, and joint ventures has significant effects on SMEs' technological payoff (Hagedoorn, 1993; Lee and Kang, 2006). Indeed, according to Swink et al. (1996), technological cooperation plays a non-negligible role in new product development; and Norman and Ramirez (1993) argue that support in technological aspects and the formation of sales are significant to SMEs' competitiveness. Next, research on cooperation quality (attitude dimension) has shown that elements, such as prospective long-term relations and mutual trust positively contribute to SMEs' performance (Deming, 1986; Kalwani and Narayandas, 1995; Norman and Ramirez, 1993). Therefore, within the milieu of cooperation between large enterprises and SMEs, both intensity and quality are influential factors in enhancing SMEs' competitive advantage.

III. Research Model and Hypotheses

Based on the above theoretical analysis, Figure 1 models the effects of strategic fit and cooperative relationship on firms' performance.

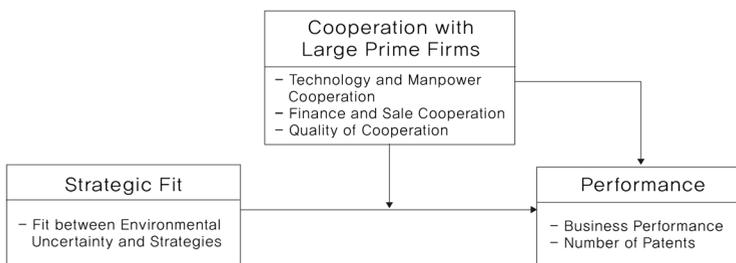
According to existing studies on strategic fit, an uncertain business environment encourages enterprises to seek new, creatively strategic alternatives and innovations. Differentiation of strategy, in this case, would be the most appropriate choice (Eisenhardt and Martin, 2000; Teece et al., 1992). Conversely, within a stable environment, enterprises that resort to the competitive strategy of minimal scope would benefit the most from a cost leadership strategy (Starbuck, Greve, and Hedberg, 1978). This paper, in accordance with studies supporting the argument of choosing the most appropriate strategy for business contexts and for achieving high-level agendas through strategic fit (Choo et al., 2009; Kwon and Shin, 2003; Lee et al., 1993), merges strategic fit and business outcomes (of subpart suppliers) to frame the following hypotheses.

Hypothesis 1: Strategic fit has a positive effect on the performance of subpart suppliers.

Apart from strategic fit and business climate, cooperation with external organizations is important (Bierly and Gallagher, 2007; Kabadayi, Eyuboglu, and Thomas, 2007; Nielsen, 2010), especially with high-

tier enterprises in supply chain. Partnership between enterprises of different sizes has been the subject of much research. The motive behind cooperation and alliance, as suggested by Franco and Haase (2012), means to acquire technology, to share risks, to save costs, to supplement one's own capacity, to reduce uncertainty, to create new business, to collaborate on marketing, and to develop diversity and synergy in operational processes. This is especially true of innovation resulting from the cooperative process (Kaufman, Wood, and Theyel, 2000). It has a significant effect on business outcomes. Cooperation between several organizations also has a significant effect on innovative strategies (Faems, Looy, and Debackere, 2005). Since customers and business partners are sources of innovation, Von Stamm (2004) asserts that all enterprises must empower their cooperative relationships. In doing so, this eases market entrance, complements internal resource capacities, reduces the possibility of failures in innovation, curtails excessive costs, acquires outside knowledge, and derives innovation from customers' needs. Normann and Ramirez (1993) argue that supporting technology and securing new sales empowers SMEs. Lee and Kang (2006), on the other hand, show that technological and financial collaborations empower SMEs. Shin, Ryu, and Song (2001) demonstrate that long lasting exchanges in both human and physical capital permit subcontracting companies to exploit parent companies' technologies, finances, and managerial expertise

Figure 1
Research Model



for their own technological developments. Other findings remark that pursuing long-term relationships (attitude) composed of trust positively affect SMEs' business outcome (Deming, 1986; Kalwani and Narayandas, 1995; Normann and Ramirez, 1993). Thus this paper hypothesizes that the business outcomes of SMEs' subpart suppliers are the result of its cooperative relationship with large companies.

Hypothesis 2: Cooperative relationship with large companies positively affects the performance of subpart suppliers.

It can be inferred from this hypothesis that the creation of cooperative relationships between small subpart suppliers and large enterprises has not only a direct managerial effect on small suppliers but also an indirect effect on the relationship associated with strategic fit and business performance. According to Hagedoorn (1993), technological cooperation complements internal technological capacity, that is, by co-researching, co-producing products, sharing patented technology, collaborating on the development process, and transferring technology. Therefore, it improves the effectiveness of technological innovation strategies. Technological collaboration, with the goal of co-developing new products, has corollary effects, such as the sharing of core knowledge among partners and the shortening of research duration for new product developments and cost reductions (Swink et al., 1996). Manpower cooperation with large companies contributes to the technological capacity of small subpart suppliers and plays an influential role in determining SMEs' competitiveness (Shin et al., 2001). To achieve higher business outcomes, SMEs use differentiation of strategy and procure human and physical capital from large prime companies. On the other hand, in a business climate with low uncertainty, using a cost leadership strategy to procure human and physical capital from large prime companies helps SMEs achieve higher business outcomes (Lee and Kang,

2006; Thomke and Von Hippel, 2002; Von Hippel, 1998).

Because financing ability is a requisite for innovation, financial cooperation with large companies plays a decisive role in SMEs' financial ability and innovativeness (Sabel, 1993). Kim's (2011) study shows that despite the importance of securing sales in a broad range of business fields, the share of domestic SMEs conducting market research or managing company brands is less than 30 percent (Samsung Economic Research Institute, 2008); hence cooperation with large companies diversifies SMEs' products, improves design ability, augments brand management, and secures channels for advertisements. This suggests that within an uncertain business climate SMEs obtain better outcomes and funding opportunities through differentiation strategies and associations with large prime companies. On the other hand, within low uncertainty business climates, SMEs' subpart suppliers acquire funding on sales promotions through cost leadership strategies and associations with large prime companies (Lee and Kang, 2006; Shin et al., 2001).

Lee (2001) sheds light on the importance of prospective partnerships in enhancing competitiveness; that is, when affiliation between buyers and suppliers is long lasting and cooperative than rivalry, the more it enhances competitiveness (Lee, Baek, and Kim, 2004). This demonstrates the importance of cooperation intensity (behavioral) and relationship quality (attitude) in SMEs' competitiveness. Relationship quality from a attitude standpoint comprises the following components: (1) evaluation on past transactional relationships with partner companies and (2) confidence in prospective transactions or transaction conditions (Yoon and Kim, 2010). Companies that value past cooperation and have high confidence for future cooperation intensively perform strategies which result in higher outcomes. In exceptionally uncertain environments, prospective and mutually beneficial relationships with large prime companies embolden small sub-

part suppliers to use differentiation strategies that enhance business performance. In less volatile environments, prospective and mutually beneficial relationships with large prime companies embolden small subpart suppliers to use cost leadership strategies that enhance business performance.

In sum, forming relationships with large enterprises affects the business performance of small subpart suppliers. It also affects SMEs' strategic-fit choices. This paper, based on the above theoretical arguments, hypothesizes that cooperation with large enterprises influences the relationship between SMEs' strategic-fit choice and business performance.

Hypothesis 3: In affiliations between strategic fit and business outcomes of SMEs' subpart suppliers, cooperation with large enterprises acts as the positive mediator.

IV. Measure

4.1 Sampling and Data Collection

Data analysis centers on surveys from August to mid-September of 2012. Questionnaires were delivered to and collected from CEOs of Samsung Electronics' primary partners through e-mails and conventional mailing (these primary partners organized an informal association named as "Hyup-Sung Whae"). Only surveys within Samsung Electronics' supply chain were used to analyze competitive strategies and business out-

comes. One hundred and sixty companies belonging to Hyup-Sung Whae received the questionnaires. In total, 104 out of 160 companies returned the questionnaires. Because 14 surveys had missing values, these were excluded. Thus this analysis uses only the results of 90 surveys.

The following uses descriptive statistics to explain the age of enterprises. Companies with fewer than 20 years of operating experience comprised 43.3 percent of the sample; 20~30 years comprised 35.6 percent; and over 30 years comprised 21.1 percent. The mean value of their firm age was 23.8 years. It means that the primary suppliers of Samsung Electronics are likely to rely on a long term-based contract, as the older firms could build more stable relationships with it.

Company size is the number of employees (apart from temporary workers): 18.9 percent of the sample hired fewer than 100 employees; 26.7 percent hired between 100~200 employees; and 32.2 percent hired over 300 employees. The mean value of their size was 323 employees which is more relying on Samsung Electronics. Our sample includes 29 medium-sized firms with 300 to 1,000 employees. With regard to business category, 42.2 percent of companies operated in semiconductor-related fields; 57.8 percent operated in set-related fields (e.g., appliances, digital display systems).

4.2 Operational Definition

In this analysis, the degree of uncertainty

Table 1
Descriptive Statistics

	Mean	Criteria	Frequency	Percentage(%)
Firm Age	23.83	under 20	39	43.3
		20 ~ 30	32	35.6
		over 30	19	21.1
Firm Size (No. of employees)	323.18	under 100	17	18.9
		100 ~ 200	24	26.7
		200 ~ 300	20	22.2
		over 300	29	32.2
Type of Industry		Semiconductor	38	42.2
		Sets	52	57.8

within a business environment is a measure of business climate (Miller, 1988). Uncertainty of business environment refers to the degree of uncertainty perceived or acknowledged by manager or members of companies. Uncertainty is divided into three dimensions: volatility, complexity, and hostility. Dynamism and complexity are the most mentioned (Bidault and Butler, 1998; Hagedoorn, 1993). This research uses the five-point Likert scale for technological gaps, technological difficulties, and competition prospects.

Porter (1980)'s generic strategies are the most referenced in competitive strategies. Building upon previous research findings (Lee et al., 1993), this research measures both cost leadership and differentiation strategies. The latter is subdivided into innovation differentiation and marketing differentiation. The five-point Likert scale measures innovation differentiation in two areas: (1) new product development resulting from innovative technologies and (2) development of the latest R&D technologies. The five-point Likert scale measures marketing differentiation in three areas: (1) advertisement and publication, (2) improvement on brand awareness, and (3) attractiveness of design and packaging. The five-point Likert scale measures cost leadership strategy in two areas: (1) cost reduction through efficient inventory management and (2) cost reduction in production and operation.

Strategic fit signifies congruence of mutual goals (Hoffmann and Schollosser, 2001). Regarding strategic fit, this paper adopts Miller's Euclidean Distance, as seen in the first equation. In this equation, X denotes

environmental uncertainty and Y denotes competitive strategy (j = 1, 2, 3 denotes marketing differentiation, innovation differentiation, and cost leadership strategies). All variables are standardized. Mean value is 0; standard deviation is 1. The following equation is based on the idea that variables with higher compatibility will result in values with lower difference. In other words, the smaller the difference between environmental uncertainty and differentiation strategies, the higher the degree of strategic fit. Also, by adding a negative sign in front of the equation, it shows the higher variable values are, the higher the degree of fit.

The definition of cooperation varies; however, many researchers agree that cooperation is not a fixed concept. Instead, it is a continuation, one that is dependent on the magnitude of cooperation (Kanter, 1994). This research systematically measures the degree of cooperation according to technology, human resources, finances, and sales. Cooperation in technology generally describes participation of suppliers in the development process, sharing of information systems, sharing of technologies, and sharing of physical capital (Ragatz, Handfield, and Scannell, 1997). However, to improve accuracy, existing papers have modified their measurements with realistic categories. This paper, too, chooses the most practical categories: co-development of technology, transference of technology, education of technology, and information of marketing and technology. The five-point Likert scale uses the same categories. Cooperation in manpower generally refers to performing deputized education or training programs, dispatching supplementary labor, and supplying full-time employment (Lee and Kang, 2006). This research uses the five-point Likert scale to measure cooperation in two areas of manpower: (1) education or training of employees and (2) supplying or dispatching labor. Types of financial cooperation considered most useful for SMEs in the areas of operational and managerial accounting are physical capital and raw material cost provisions (Kim and

Figure 2
Strategic Fit Model

$$ED_k = - \sum_{(j) \in A}^n [(X_k) - (Y_{jk})]^2$$

ED_k : k th firm's ED between Environment
Uncertainty and Strategies

X_k : k th firm's Environment Uncertainty

Y_{jk} : k th firm's j th Strategy

Jo, 1991). For this purpose, this paper uses three questions of the five-point Likert scale: support in managerial costs or operational costs, external procurement, and purchase of high-cost machinery. Cooperation in sales generally refers to cooperation in product advertisements, product returns or damage compensation, and sales marketing (Morgan and Hunt, 1994). The paper utilizes three questions of the five-point Likert scale: support in distribution or circulation processes, pioneering overseas sales, and product advertisements. Existing studies show that trust, satisfaction, and degree of absorption or commitment are effective in measuring relationship quality. From the perspective of relationship quality, prospective cooperation is optimal (Lambert, Margaret, and Gardner, 1999). Establishing relationship through mutually beneficial and reciprocal exchanges is optimal (Macbeth and Ferguson, 1994). This research uses three areas from the five-point Likert scale. The first area consists of mutual cooperation, which measures the level of satisfaction in cooperation. The second area consists of prospective degree, which measures long-term potential.

To measure business performance, this paper surveyed CEOs and executives on business performance. Patents measure innovation performance. For evaluating business performance, this paper uses questionnaires by Gupta and Govindarajan (1984) and measures competitive advantage, a company's degree of advancement over its main competitor or the industry average. Objective performance index, such as the financial index, excludes subjective bias. However, several of the subpart suppliers subjected to this research exaggerated profits and losses with prime companies in order to sustain their relationship with partners. Also, objective performance index has the following disadvantages. The first is that it cannot cover all the prized performance variables of a company. Second, it does not express companies' preferred strategy choices adequately. Lastly, it cannot control industry effects (Govindarajan and Fisher, 1990). This re-

search, therefore, uses subjective measurements from multiple dimensions to capture overall competitiveness (Lee and Chang, 2007). This paper uses five Likert scale-type questions on five areas of business performance evaluation: market share increases, revenue increases, overall profit increases, customer satisfaction increases, and overall enterprise performance. These are three-year comparison outcomes with main competitors. Publicized patents ranging from 2008 to 2011 measure innovation performance.

Controlled variables are age, size and degree of dependence on prime enterprises. Firm age measures time since the company's foundation. Firm size is number of employees (Hoque and James, 2000; Libby and Waterhouse, 1996). Dependency on prime enterprises measures revenue shares arising from transactions with Samsung Electronics in the total revenue of subpart suppliers.

V. Analysis and Results

5.1 Reliability and Validity Analysis

Subcategories that undermined reliability of analysis and testing items were excluded. Elements used in the categories of environmental uncertainties, cooperative relationships, and competitive strategies resulted in a Cronbach's value of over 0.5; thus the reliability of testing is sound (Van de Ven and Ferry, 1979). Exploratory factor analysis gauges analysis validity. This paper uses principal component analysis with Varimax rotation, a commonly used component in exploratory factor analysis. One factor in cooperation quality and three factors in competitive strategies produced a value over 1. Because factor loadings are greater than 0.5, the testing model is valid.

However, in pre-separated evaluations of cooperation intensity among technological, human, finance and sales, the factor combining technological and human resources was deemed adequate and the factor combining cooperation in sales and finances was deemed

adequate. This may be because variables on cooperative relationships are correlated and, therefore, should be considered a continued and compounded concept; consequently, this analysis uses two categories: (1) cooperation in technology and human resources (2) cooperation in finance and sales.

5.2 Correlation Analysis

Results from the correlation analysis between variables are located in Table 2. Regarding the firm age and the degree of dependence of prime companies, results show that smaller, younger firms have a lower degree of dependence. A lower degree of dependence has higher innovation performances, suggesting that newer companies endeavor to diversify transactions and focus on technological innovation. However, when patent numbers are used to measure the size of company and its innovation performance, a correlation between the two arises. This implies that larger subpart suppliers initiate

a greater number of innovative activities.

Also, a strong positive correlation between strategic fit and business performance appears. Such a correlation implies that using appropriate strategies for a particular business environment enhances one's competitive advantage. The relationship between cooperative relationship and business performance suggests that cooperation of technological and human resources correlates to business outcome, further suggesting that cooperation in technology and manpower is important for both large companies and small subpart suppliers. Also, cooperation quality and business performance are positively correlated, meaning that both behavioral and attitude aspects of cooperation are important. Cooperation quality and innovation performance are highly correlated as well. Prospective cooperation; therefore, is a decisive influence in the innovation performance of small subpart suppliers. The behavioral dimension underscores SMEs' lasting competitiveness.

Table 2
Reliability and Validity Analysis

Item		Factor loading	Eigen Value	Variance	Cronbach's α
Environmental Uncertainty	U1	.856			
	U2	.768	1.617	53.893	.554
	U3	.526			
Technology & Manpower Cooperation	T1	.872			
	T2	.834			
	T3	.807	3.698	24.651	.849
	M1	.598			
	M2	.564			
	M3	.564			
Intensity of cooperation	F1	.643			
	F2	.758			
	F3	.868	3.141	20.942	.870
	S1	.617			
	S2	.747			
	S3	.578			
Finance & Sale Cooperation	F3	.868	3.141	20.942	.870
	S1	.617			
	S2	.747			
Quality of cooperation	Q1	.937			
	Q2	.916	2.822	18.815	.636
	Q3	.761			
Competitive strategies	MD1	.914			
	MD2	.895	2.298	32.832	.852
	MD3	.830			
	ID1	.938	1.833	26.183	.854
	ID2	.938			
	ID3	.938			
Cost leadership	CL1	.890	1.616	23.083	.723
	CL2	.890			

5.3 Hierarchical Regression Analysis

This paper uses hierarchical regression analysis to test its hypotheses. Table 3 displays the results.

Strategic fit has significant effects on sub-part suppliers' business performance. This result coincides with previous findings, suggesting that the quality of cooperation in

Table 3
Analysis of Correlation between Variables

	1	2	3	4	5	6	7	8	9
1. Firm Age	-								
2. Firm Size	.184 ⁺	-							
3. Dependence on the Prime company	-.195 ⁺	-.351 ^{**}	-						
4. Strategic Fit	-.077	-.135	.126	-					
5. Technology and Manpower Cooperation	.107	.181 ⁺	-.012	.034	-				
6. Finance and Sales Cooperation	.144	-.014	.144	.040	.630 ^{**}	-			
7. Quality of Cooperation	.182 ⁺	.289 ^{**}	-.129	.058	.543 ^{**}	.349 ^{**}	-		
8. Business Performance	.050	.108	-.017	.184 ⁺	.232 [*]	.089	.310 ^{**}	-	
9. Innovation Performance	-.010	.717 ^{**}	-.197 ⁺	.072	.074	-.085	.229 [*]	.001	-

⁺p < .1 ^{*}p < .05, ^{**}p < .01.

Table 4
Hierarchical Regression Analysis for Managerial Performance

	Model 1	Model 2	Model 3
Firm Age	.303(.033)	.400(.044)	.293(.033)
Firm Size	.808(.094)	.601(.071)	1.117(.129)
Dependence on the Prime company	.020(.002)	.224(.026)	-.025(-.003)
Strategic Fit	1.771(.190) ⁺	1.939(.213) ⁺	1.816(.197) ⁺
Technology and Manpower Cooperation	1.790(.193) ⁺	.626(.093)	
Finance and Sale Cooperation			.916(.101)
Quality of Cooperation			
Strategic Fit × Technology and Manpower Cooperation		-.971(-.152)	
Strategic Fit × Finance and Sale Cooperation			.249(.070)
Strategic Fit × Quality of Cooperation			
R ² (Adjusted R ²)	.089(.033)	.063(.006)	.119(.065)
F	1.598	1.099	2.206 ⁺
R ² (Adjusted R ²)		.099(.033)	.063(-.006)
F		1.488	.915
R ² Change from interaction		.010	.001
F Change in R ²		.944	.062

⁺p < .1 ^{*}p < .05, ^{**}p < .01.

technology and manpower positively affects business performance and reinforces the importance of cooperating with large enterprises. However, the relationship between cooperation and strategic fit does not affect business performance significantly. This means that strategic fit and cooperation with large enterprise independently affect business outcome. In sum, by pursuing a strategic fit with their business environment and cooperating with large companies in technology and manpower, subpart suppliers can both positively and independently affect SMEs' productivity and efficiency.

Table 4 shows results from the hierarchical regression analysis on innovation performance. Strategic fit, similar to the results on business performance, positively affects innovation performance (measured by number of patents). The strategic fit results show that choosing the most appropriate strategies is vital for innovation and business perfor-

mance. Affiliating the beneficial outcomes of strategic fit and cooperation intensity also has a positive effect on innovation performance, again emphasizing the importance of strategic fit and cooperation with large companies on enhancing the competitiveness of small subpart suppliers. Synergy arising from strategic fit and cooperation quality, too, positively affects innovation. The data shows that, in the process of practicing strategic fit, pursuing a prospective, mutually beneficial cooperation with large companies achieves innovation. In other words, such cooperation with large prime companies enables small subpart suppliers to develop new opportunities for growth and to run innovation through R&D investments. Indeed, by applying the most optimal strategies in a given environment and executing them in cooperation with large companies (i.e., technology and manpower), SMEs can further build their strength. Their cooperation should be per-

Table 5
Hierarchical Regression Analysis for Innovation Performance

	Model 1		Model 2		Model 3	
Firm Age	-1.764(-.132) ⁺	-2.170(-.155) [*]	-1.652(-.125)	-1.587(-.121)	-1.895(-.144)	-2.030(-.150) ⁺
Firm Size	9.835(.786) ^{**}	10.779(.834) ^{**}	9.888(.776) ^{**}	9.931(.785) ^{**}	9.391(.764) ^{**}	9.944(.797) ^{**}
Dependence on the Prime company	.386(.030)	-.267(-.020)	.489(.039)	.599(.048)	.343(.027)	.213(.016)
Strategic Fit	2.287(.169) ⁺	1.667(.120) ⁺	2.279(.168) ⁺	1.805(.330) ⁺	2.183(.162) ⁺	2.106(1.091) ⁺
Technology and Manpower Cooperation	-.776(-.058)	1.587(.155)				
Finance and Sale Cooperation			-.914(-.068)	-1.324(-.130)		
Quality of Cooperation					.481(.037)	1.828(.169) ⁺
Strategic Fit×Technology and Manpower Cooperation		3.161(.323) ^{**}				
Strategic Fit×Finance and Sale Cooperation				-1.969(-.185)		
Strategic Fit×Quality of Cooperation						2.442(1.273) ⁺
R ² (Adjusted R ²)	.567(.541)		.568(.542)		.565(.539)	
F	21.489 ^{**}		21.596 ^{**}		21.319 ^{**}	
R ² (Adjusted R ²)	.615(.586)		.573(.542)		.595(.565)	
F	21.537 ^{**}		18.140 ^{**}		19.835 ^{**}	
R ² Change from interaction	.048		.005		.030	
F Change in R ²	9.992 ^{**}		.940		5.963 ⁺	

⁺p < .1 ^{*}p < .05, ^{**}p < .01.

spective and mutually beneficial.

VI. Conclusion

This research evaluates the effects that cooperation and strategic fit have on the performance of small companies interacting with large companies in environments of different uncertainty. Analysis on Samsung Electronics' suppliers shows that strategic fit has a positive effect on business and innovation performance. This finding coincides with previous research findings; hence to sharpen its competitiveness, SMEs should tailor strategies according to the environment. In doing so, it will augment its innovativeness. Second, boosting the business performance of small subpart suppliers is dependent on the quality of their cooperation with large companies in the areas of technology and manpower. In other words, cooperation enhances suppliers' productivity and efficiency. This exhibits higher business performance; thus to receive the maximum benefit, cooperation needs to be reciprocal and long lasting. Third, between strategic fit and innovative performance, the quality of cooperation generates synergy. Therefore, choosing appropriate strategies and cooperating with large companies boost SMEs' strength.

More specifically, within uncertain environments, harnessing differentiated strategies and pursuing collaborations with prime companies will produce innovative outcomes (e.g., increased patent publications). Conversely, pursuing cost leadership strategies and collaborating with prime companies in areas, such as technology and manpower, will help small-sized subpart suppliers produce innovative performance in more predictable environment. Practicing these strategies results in greater ramification when cooperation is prospective and mutually beneficial. Therefore, both competition and cooperation are important for SMEs' performance. These findings agree with the existing research on competition and cooperation (Eisenhardt and Galunic, 2000; Nalebuff

and Brandenburg, 1996).

From a policy perspective, it validates the efficacy of the so-called "win-win" growth between large and small firms. Since 2010, the Korean government has been carrying out policies that foster the systematization and creation of fair affiliations among SMEs, large enterprises, and different-sized firms (Lee, 2011). Such policy alternatives improve SMEs' self-sufficiency by enforcing mutually beneficial and prospective cooperation with large companies in technology and manpower.

However, this research has its limitations. First, this paper uses only subjective numbers for variables as a measurement for business performance. Subjective evaluations are ideal in that they integrate variables and control for industry particularities (Govindarajan and Fisher, 1990). To attain an unbiased and exact analysis, objective financial reports are ideal. However, since the majority of research subjects are not listed in the stock market and are tied sensitively to prime enterprises, collecting objective performance data is challenging. Additional research is needed so that both objective and subjective performance indexes can be readily available and studied. Second, since surveys are limited to firms working in collaboration with Samsung Electronics, the outcomes may not be generalizable; hence the need for more diversified industry samples in future research endeavors. Third, 2012 data which this study used might be outdated not to reflect a recent trend in the changing environment. Although the subcontract relationship has been too rigid in Korea to change in near future (Lee, 2011), we need to carefully apply the results to a future context.

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전략적 적합성 및 협력관계가 협력기업의 성과에 미치는 영향: 삼성전자 협력사를 대상으로*

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본 연구는 부품공급 중소기업의 전략적 적합성과 대기업과의 협력관계가 부품공급 중소기업의 성과에 미치는 영향에 대해 조사하고자 한다. 이를 위해, 삼성전자의 1차 협력사 90개 기업을 대상으로 대기업과 전략적 적합성 및 대기업과의 협력관계가 중소기업의 기업성과에 미치는 영향을 분석하였다. 실증분석 결과, 전략적 적합성은 중소기업의 경영성과와 혁신성과 모두에 긍정적인 영향을 미치는 것으로 나타났다. 따라서 중소기업이 경쟁력을 제고시키기 위해서는 환경에 적합한 전략을 추구해야 한다는 기존 이론적 주장을 뒷받침한다. 둘째, 대기업과의 협력에 있어 기술 및 인력 협력과 협력의 질이 부품공급 중소기업의 경영성과와 혁신 성과 모두에 긍정적인 영향을 미치는 것으로 나타났다. 즉, 대기업과의 기술 및 인력 협력을 통해 부품공급 중소기업의 생산성 및 효율성을 제고시켜 경영성과를 높일 수 있을 뿐만 아니라, 혁신성과 역시 달성할 수 있음을 보여준다. 셋째, 대기업과의 기술 및 인력 협력과 협력의 질이 전략적 적합성과 혁신성과 간의 관계에서 상호작용 효과가 있는 것으로 나타났다. 이는 부품공급 중소기업이 환경의 불확실성이 높은 경우 차별화 전략을 추구하고 원청 대기업과 장기 지향적이고 상생적인 형태 협력을 수행함으로써, 더 많은 특허출원과 같은 혁신성과를 달성할 수 있음을 보여준다. 반면, 환경의 불확실성이 낮은 경우에는 원가우위 전략을 추구하고 원청 대기업과 기술 및 인력 협력을 수행함으로써, 더욱 큰 혁신성과를 달성할 수 있음을 시사한다. 본 연구는 이러한 연구결과를 토대로 부품공급 중소기업이 경쟁력을 창출하기 위해서는 환경에 적합한 경쟁전략의 선택과 실천뿐만 아니라, 원청 대기업과의 기술 및 인력 협력 강도와 협력의 질이 중요한 영향을 미침을 주장한다 이러한 주장은 중소기업의 경쟁력 제고를 위해 경쟁과 협력이 모두 중요함을 시사한다.

주제어 : 동반성장, 상생협력, 협력 관계, 전략적 적합성, 기업성과

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