The Managerial Challenges and Strategic Alternatives for Global Non-memory Semiconductor Companies in Korea

한국에 진출한 글로벌 비메모리 반도체 기업의 경영 도전과제와 전략

Kwang Chul Park
박 광 철

Abstract

Korea's electronics industry has achieved remarkable growth over the past few decades, with Samsung Electronics, LG Electronics and SK Hynix, steadily increasing their global market share with their ceaseless efforts, bold investment, excellent management performance, and extensive government support to develop technologies in areas such as white goods, smartphones, electronic communication devices and memory semiconductors.

However, despite the development of the electronics industry, the non-memory semiconductor market in Korea differs from the general electronics industry, and I would like to propose on strategic management based on the result of analyzing the problems through preceding study using market research, and surveys of market workers. Therefore, the overall purpose and method of research for this study are explained in Chapter 1.

Chapter 2 attempted to verify in detail that the Korean market mentioned above has different characteristics from other industries through prior research. To achieve this goal, the overall ecosystem of Korean companies in the non-memory semiconductor industry and the size of the Korean semiconductor market were compared to those of global and investigated, and the distribution network structure of the Korean market in the semiconductor industry was identified. Through this process, the following management strategy problems that occurred under the structure of the non-memory semiconductor industry were recognized. First, Korean companies' share of the non-memory market in the Korean market compared to foreign companies is only about 3%, which means the domestic non-memory semiconductor market is monopolized by foreign semiconductor companies. Second, the Korean organizations of global non-memory semiconductor companies that have entered Korea operate only sales organizations that play a very limited role, and there are generally no organizations in Korea such as product planning, HR, research (R&D), production, and purchase. Third, due to the limited role and status of Korean organizations of global non-memory companies, employees in related industries are low in work satisfaction and immersion, and do not show high productivity. Fourth, in the non-memory semiconductor market, Korean companies are being set up at a low level or in a limited area of strategic relationship with global non-memory companies. In addition, another problem is that there is a principal-agent problem because of the distribution structure of non-memory semiconductors, and that is why the semiconductor supply chain management is not stable.

논문접수일: 2025년 1월 23일, 게재확정일: 2025년 4월 19일
* Hanesgen Company, mrvledpark@gmail.com

Chapter 3 analyzed the results of a survey of 127 people from a total of eight companies to verify the specificity of the non-memory industry in Korea and to present new management strategy alternatives by identifying the productivity and working environment, work immersion, and work satisfaction of the industry workers. The survey targeted three companies operating branches in Korea and a global semiconductor distribution company managing its business in Korea.

In Chapter 4, based on the results of these market surveys and survey analysis, the following new management strategic alternatives were suggested in this project regarding the specificity and problems of the non-memory market in Korea. First, global non-memory companies that have entered Korea are operating organizations primarily for branch-type sales in Korea, causing limitations in their roles and status. As a positive alternative to these market problems, the example of STMicro was explained and proposed. Second, the work satisfaction of industry workers is not very high due to the structure of Korea's distribution organization. In order to fundamentally solve these problems, it is explained that related industries need to research and develop new forms of leadership that fit the cultural background of Korea. Third, it is necessary to improve the fact that Korean non-memory semiconductor companies have a very low share of the global market. To solve this problem, the government's interest and investment, which are concentrated in memory semiconductors, should be expanded to non-memory companies.

The purpose and significance of this study was to analyze market research and problems in areas that relatively lack academic research in the non-memory semiconductor industry, which plays a very important role in Korea's electronics industry, and to suggest strategic management alternatives.

Keywords: Non-memory Semiconductor, Global Strategy, Business Strategy, Problem Solving

Ⅰ. Introduction

1. Research Background

After transistors were invented at Bell Labs in the U.S. in 1947, semiconductor technology has faced a significant inflection point when Jack Kiby, an engineer at Texas Instrument in the U.S., invented Large Scale Integration (LSI), which can accumulate transistors, in 1958, and for his work, he won the Nobel Prize in Physics in 2000. Since then, the semiconductor industry has developed very dramatically, as claimed through Moore's Law by Gordon Earle Moore, co-founder of Intel, that the number of transistors that can be accumulated in semiconductor chips doubles every 18 to 24 months, as well as Hwang's Law, the president of Samsung Electronics, which says semiconductor memory capacity doubles every year, and more recently, the law of Jensen Huang, founder of NVIDIA, which says that semiconductor computing power that drives artificial intelligence more than doubles every year.

Korea's semiconductor industry has also experienced remarkable growth and development. Samsung Electronics and SK Hynix accounted for 17.7 percent of the global memory semiconductor market in 2021, with the amount reaching $100 billion. In Korea's export economy, semiconductors are Korea's largest export items, accounting for 18.9 percent of Korea's total exports as of 2022, with total

semiconductor exports of $129.2 billion, of which memory semiconductors accounted for 57.46 percent, leading the Korean economy and industry. (Invest Korea, 2024)

However, compared to the development of the memory industry, Korean companies account for about 3% of the non-memory semiconductor market, showing a very contrasting share of the non-memory semiconductor market. (Jung Woo-Tae, 2023) This non-memory market has a monopoly form for each non-memory type by companies such as Intel, Qualcomm, Broadcom, NVIDIA, NXP, Marvell, On-Semi, Renesas, etc., which are well known worldwide 〈Table 2〉. Therefore, considering the very contrasting memory semiconductor market and non-memory semiconductor market share, it is necessary to analyze the management strategies of global non-memory semiconductor companies that have entered Korea. This study attempted to analyze the management strategies and specificities of the non-memory industry from the perspective of supply chains in Korea through research on how global non-memory companies operate their organizations in Korea. Such an example was investigated, analyzed, and explained in Chapter II. In summary, the non-memory semiconductor companies mentioned before operate branches in Korea with Samsung Electronics, LG Electronics, and Hyundai Kia Motors as major customers, and the members of the organization are composed of sales, technical support engineers (FAE), and business management (administration). In other words, they do not operate the research, production, purchasing, and human resources (H&R) organizations or play a limited role in those, which are necessary for the general organization of the company 〈Figure 6〉. What this organizational structure suggests is that Korea's role as a member of the headquarters sales organization is only interested in increasing sales and maximizing profitability from operations to consumers in Korea, and it means that the Korean branch has certain limitations in being deeply involved in or influencing important decision-making such as marketing, investment, or technology development (R&D) at the headquarters level. Another peculiarity is that most companies operate business through agencies at the same time, and in its operation, the efficiency and productivity of the operation are stagnant due to principal-agent problem. It also showed the problem of leadership due to the immoral behavior of some branch managers.

Moreover, a remarkable inflection point of the global semiconductor industry occurred during the pandemic period (COVID-19). The supply chain management (SCM) of the global non-memory semiconductor industry has established a very stable structure by operating without any special problems, with companies that design and sell semiconductors and foundry companies that specialize in producing semiconductors, thoroughly separating and sharing roles for each subject. However, it was proved through the following example that the supply chain structure of the semiconductor industry cannot adequately solve the chaotic market situation caused by the extreme shortage of non-memory semiconductors that occurred during the last pandemic (COVID-19). Semiconductor foundry companies such as Taiwan's TSMC and South Korea's Samsung Electronics faced the pandemic and immediately halted production of semiconductors, which contributed to the shutdown of factories for primary consumers such as Hyundai Kia Motors, Samsung Electronics, and LG Electronics due to semiconductor supply disruptions. Not only did a sharp increase in semiconductor prices occurred in a market situation

where semiconductor inventories were plummeting worldwide, but also led to a sharp drop in memory semiconductor prices due to a sharp increase in inventories after the pandemic. This series of events is a completely unexpected phenomenon that did not occur during the management of the past semiconductor business.

Another problem, structural problems related to organizational operation management in the semiconductor market, was also revealed. s a way to solve fluctuating price and urgent supply problems, it was shown that coercive orders from top to bottom within the organization or the decision of the company's headquarters were unilaterally instructed or forced to agency, and in the process, individuals within the organization showed phenomena such as avoidance of responsibility, welfare instability, and workplace movement. Rather than being a short-term problem that occurred during the pandemic period (COVID-19), this phenomenon came to be manifested by a specific event that the problem was latent for a long time at the base of the industry. This widespread method of managing organizations through the concept "When seniors order, juniors must obey." in the market means that in the long run, various problems will continue in the future, such as a decline in customer trust and sales, a weakening of the relationship between branches and agencies, a decrease in the willingness and loyalty of internal members, and a decrease in leadership.

In addition, a new social and cultural change in Korea has turned out, which is the emergence of the MZ generation. The new generation is not adapted to the military-style one-sided command culture that is perceived to be prevalent in Korea, and the characteristics of this generation are required to change and adapt to the leadership of the executives of each company who will be in charge of the organizational operation of the Korean company in the future. In this situation, this project made me feel the necessity to investigate whether non-memory industry workers are affected by the relationship with the MZ generation.

2. Research Objective and Method

This study aims to identify the specificity of the industry and problems in management by proceeding research on the organizational operation of global non-memory semiconductor companies in Korea and conducting an interview and a survey regarding the working environment of related industry workers, and to suggest an effective strategic management alternative on this basis.

As a prior study, Chapter 2.1 explained the situation of the global semiconductor market and the Korean market and attempted to identify the characteristic elements of the supply chain structure of the semiconductor industry. In addition, the business management strategy in Korea was analyzed by investigating the specificity of operating the Korean organizations of global companies and the current status of Korea's distribution networks. The target companies were semiconductor agencies such as Marvell Korea (MRVL), ONSEMI, VANTIVA, branch organizations of VVDN, WT Korea, Uniquest, Wilkon Technology, and Daejin Semiconductor, setting priorities based on Nasdaq-listed companies. In Chapter 2, in addition, the current status of distribution networks and organizational structure of

global non-memory companies in Korea were identified and investigated. In Chapter 3, a variety of problems that occurred during the pandemic, such as the collapse of the supply chain and the causes of management responses, were investigated. In addition, the model of Korean leadership experienced by executives and employees in the industry and the characteristics of the MZ generation were analyzed via prior studies, and related industry workers were interviewed and surveyed about the principal-agent problems and the morality issues of branch managers influencing on the members of the organization.

A total of 127 non-memory industry workers working at Korean offices and agencies of global semiconductor companies that have entered Korea were surveyed, and the survey was analyzed based on 48 questions. The survey was conducted on the industry's right to determine the price and delivery date, the company's internal information exchange, the relationship between the boss and subordinates, the improvement of individual abilities and the company's support, the employees' work engagement, the company's compensation system, the relationship within the MZ generation, and the relationship between branch and agencies during the pandemic. Based on this, the specificity and problems of overall distribution structure were identified.

Ⅱ. Research Background and Preceding Study

1. Global Semiconductor Market and Korean Semiconductor Market

1.1 Classification of Semiconductor Products

Semiconductors are largely classified into memory semiconductors and non-memory semiconductors according to their functions. Memory semiconductors are responsible for storing data, and non-memory semiconductors refer to all semiconductors except memory semiconductors. Non-memory semiconductors are further classified into system semiconductors and photo/discrete devices.

<Table 1> Classification of Semiconductor Products

Classification			Function/Charateristics	Examples
Memory Semiconductor			Stores data	DRAM NAND Flash Memory
Non-Memory Semiconductor	System Semiconductor	Microcomponent	Plays a role as brain of PC and and its applications	Microprocessor Microcontroller
		Logic IC	Consists of a logic circuit (Not-Or-And) Controls specific parts of the product	AP (Application Processor) DDI (Display Driver IC)
		Analog IC	Translates analog into digital signals and vice versa	Power Management IC
	Photo/Discrete Device	Discrete Device	Performs simple functions for each discrete device	Transistor Capacitor
		Photoelectron	Translates light into electrical signals and vice versa	LED
		Sensor	Processes acquisition, conversion, and amplification of information between light, physical signals and electrical signals	Image Sensor

• Looking at the share of the overall semiconductor market by type of semiconductors, memory semiconductors account for about 26%, logic ICs account for about 26%, micro-components account for about 16%, analog ICs account for about 13%, discrete devices account for about 6%, photoelectrons account for about 10%, and sensors account for about 3%, respectively.

1.2 Size of Global Market and Korean Market

As mentioned earlier, semiconductors have continued to grow since the '80s, being put into PCs and smartphones as core components, and the global semiconductor market recorded $604 billion in 2022. 〈Table 1〉 shows the corporate market capitalization of these semiconductor companies. As we can see in 〈Table 1〉, global semiconductors are centered around the United States, and Taiwan's TSMC and Korea's Samsung Electronics each rank second and fourth in the market capitalization of the supply chain network. Furthermore, it should be noted that from the 1990s to 2000, Japan-based companies such as Toshiba and Renesas or European-based companies such as Philips occupied important positions in the market, but now they have lost control of the market due to the collapse of electronics companies such as Sony, Sharp, Panasonic, Toshiba and Philips. Also noteworthy is the remarkable growth of the Chinese semiconductor market. However, such growth of Chinese semiconductors is expected to be a significant obstacle to the growth of Chinese semiconductors in the future due to the trade conflict between the U.S. and China and the U.S. policy of further enhancing its position in its country by managing it as strategic assets for semiconductors in the U.S.

〈Table 2〉 Global Semiconductor Companies' Market Capitalization Ranking

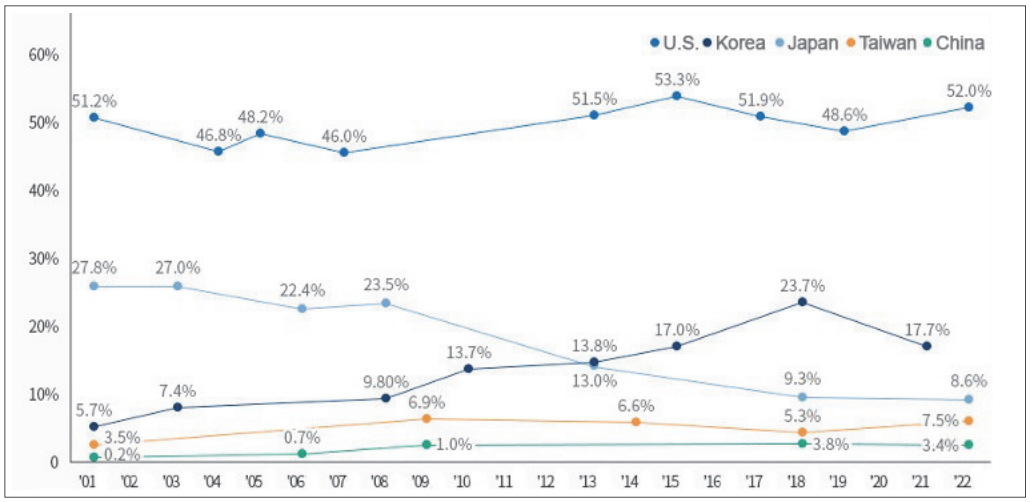
Semiconductor	Country	Market Capitalization (100 million $)	Market Capitalization (1 billion Won)
NVIDIA	U.S.	10744	1453
TSMC	Taiwan	4229	572
Broadcom	U.S.	3428	463
Samsung Electronics	Korea	3346	452
ASML	Netherlands	2363	319
AMD	U.S.	1661	224
Intel	U.S.	1448	201
Texas Instruments	U.S.	1443	195
Qualcomm	U.S.	1239	167
Applied Materials	U.S.	1158	156
Lam Research	U.S.	830	112
Hynix	Korea	745	100
ARM	U.K.	617	83

※ Source : Mister Cap 2022

〈Figure 1〉 below shows the global semiconductor market share by country, and Korea's global semiconductor market share is 17.7%, maintaining its second-largest position in the world for 10

years since 2013. 〈Source : Invest Korea〉

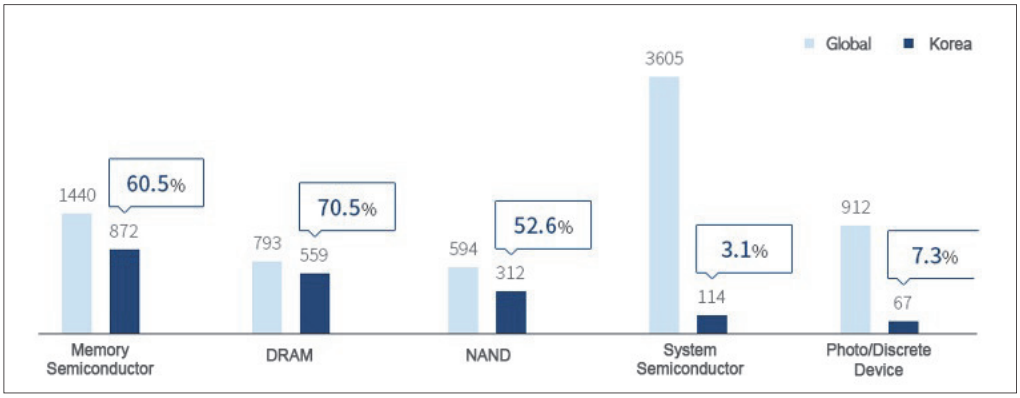
[Figure 1] Overall Semiconductor Market Share by Country ('01~'22)



※ Source : OMDIA 2023

Figure 2 explains the analysis of the semiconductor market share by product. Korea accounts for 60.5% of the global memory semiconductor market, 70.5% of DRAM and 52.6% of NAND. In this background, it can be said that Korean memory semiconductors have ultra-fine process technology and have been promoting the expansion of foundry market share based on this, accounting for 17.3% of the global foundry market as of 2022.

[Figure 2] Share of Semiconductors by Country

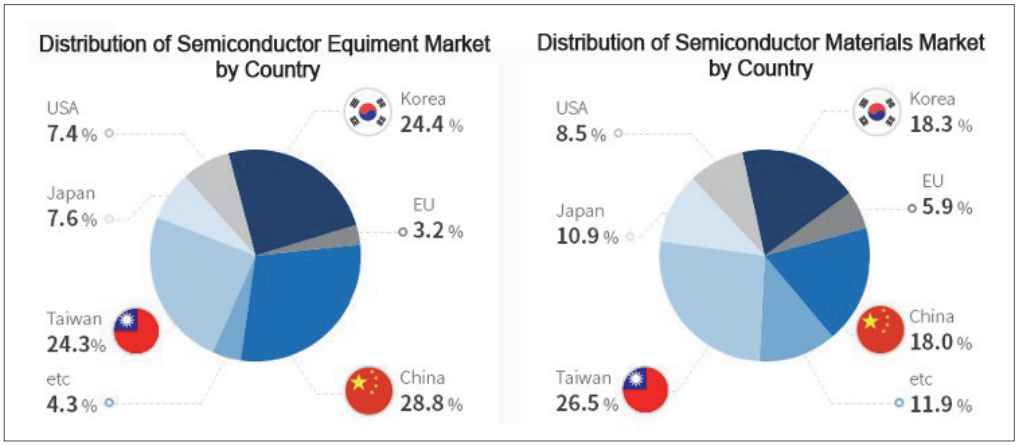


※ Source : OMDIA 2023

Through large-scale semiconductor manufacturing facilities, Korea, along with Taiwan and China, is currently forming a huge semiconductor equipment/material market as the country with the most active semiconductor facility investment in the world. As of 2022, it formed a semiconductor equipment market with a 24.4% share of the global market, semiconductor materials also being a

large market with 18.3%. Since 28.8% of China is the sum of facility investments of Samsung Electronics and SK Hynix located in China, Korea's semiconductor equipment/material market can be estimated as a larger value. For companies that produce semiconductor equipment and materials, Korea and Korean companies are meaningful markets.

[Figure 3] Distribution of Semiconductor Equipment and Materials Market by Country

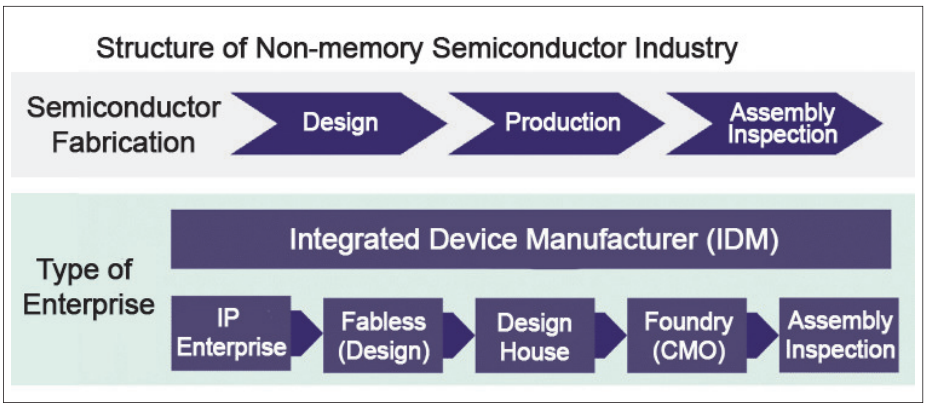


※ Source : SEMI 2023

1.3 Supply Chain Structure of Semiconductor Industry

Representative global semiconductor companies before 1980 were Intel, Texas Instruments (TI), and Philips, which not only operated their own R&D departments for semiconductor design, but also built and operated silicon wafer manufacturing facilities and developed process technology for manufacturing chips for semiconductor companies. In addition, packaging or inspecting produced chips was also carried out inside semiconductor companies. In terms of supply chain structure, this means that the semiconductor industry was vertically integrated and operated.

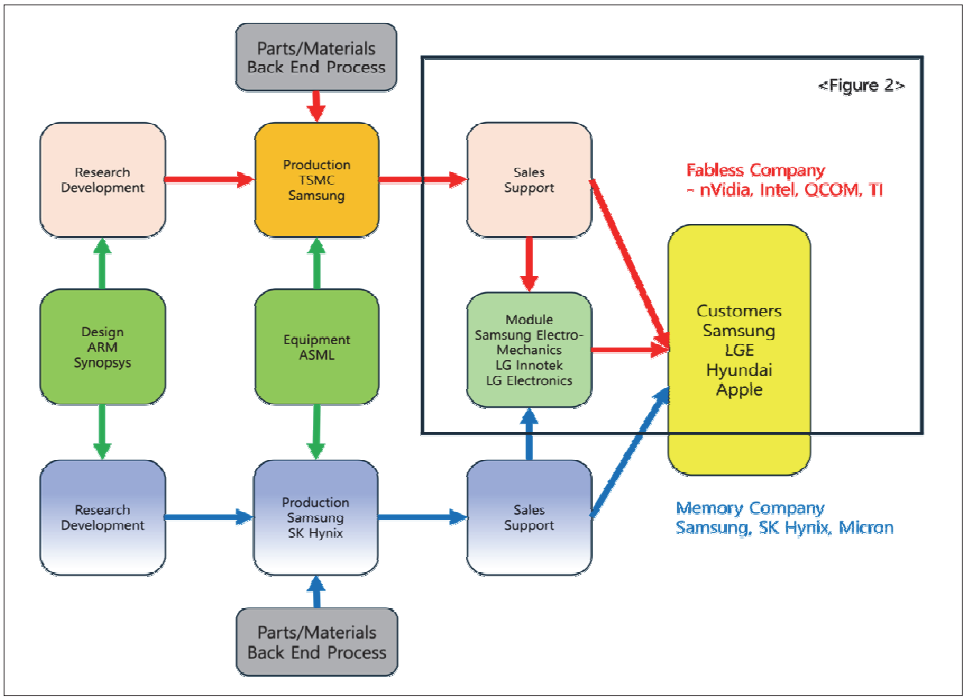
[Figure 4] Semiconductor Industry and Distribution Network Structure



However, as production technology rapidly evolved in 1990s, such as Moore's Law and Hwang's Law, semiconductors were introduced into a competitive system through investment in large-scale production plants, and Taiwan's TSMC and Korea's Samsung Electronics have secured a competitive advantage in this winner-take-all structure. On the other hand, companies such as Intel and Texas Instruments have closed or sold production facilities that are relatively inferior to semiconductor production costs, and global semiconductor companies have brought about a change in the market, which is classified into Fabless companies focusing on design, marketing, and sales, and Foundry specialized only in production processes. We can confirm the start of this change in 1994, as Jodi Shelton, one of the six CEOs of Fabless semiconductor companies, initiated the establishment of the Fabless Semiconductor Association (FSA) to promote Fabless business models globally.

Depending on the technology development of the semiconductor industry and the strategies of individual companies, the supply chain structure has undergone more individualized and diversified changes. Separated and schematized according to the company's value chain targeted by each individual company is 〈Figure 5〉. Major parts used in smartphones supplied by companies such as Samsung Electronics or Apple can be classified into memory and non-memory semiconductor products as shown in 〈Table 1〉. Each product has the livelihood of an industry that receives products from memory companies that produce products with their own factories and foundry companies that specialize in supplying non-memory semiconductor products such as TSMC in original equipment manufacturing (OEM). In addition, companies such as ASML in Netherlands which supplies core lithography machines to produce semiconductors, SK Siltron supplying semiconductor wafers, and

[Figure 5] Supply Chain of Global Semiconductor Company



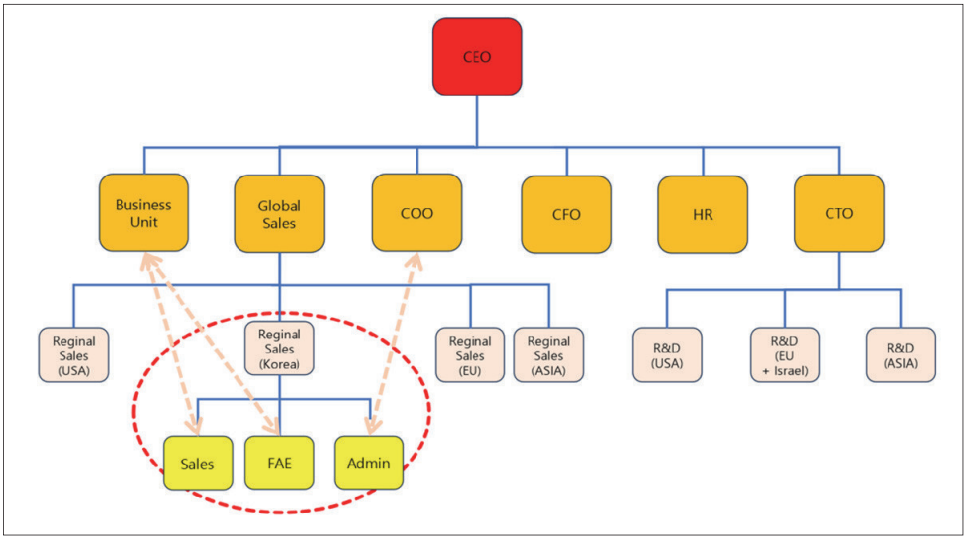
Samsung Electro-Mechanics, LG Innotek, and Murata, which miniaturize semiconductors and other components produced, such as camera modules, WiFi/BT modules, and supply them to end consumers, are also playing an important role in maintaining the semiconductor ecosystem. This division of roles is becoming a political and economic issue, such as the US-China semiconductor competition, because it is difficult to easily change the market dominance of companies that play a key role in the context of advanced semiconductor technology.

2. Management Strategies of Global Non-memory Semiconductor Company in Korea

2.1 Korea's Distribution Network Status and Organizational Structure

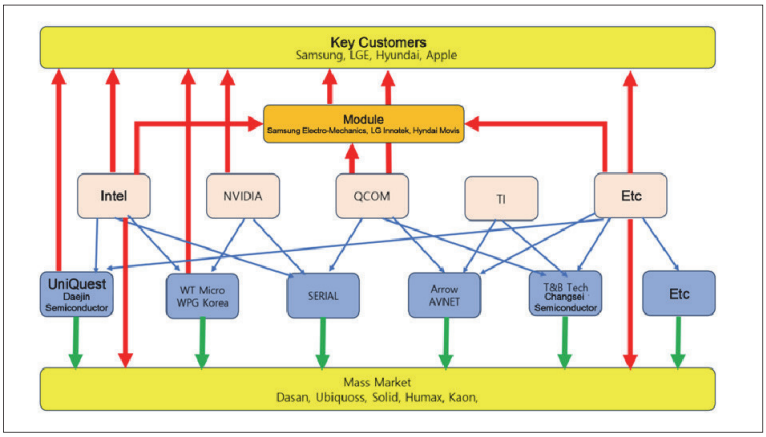
In order to examine the organizational structure of global non-memory semiconductor companies in Korea, the results of the survey targeting NVIDIA, Intel, Texas Instruments, Qualcomm, Marvell, and Onsemi-semiconductors who entered Korea among the core companies included in the Philadelphia Semiconductor Index are schematically shown in 〈Figure 6〉. There are companies born in the United States, such as traditional Intel and Texas Instruments and companies that started from start-ups in Silicon Valley and gradually expanded their market globally in global non-memory Fabless companies. The latter companies include nVidia, Marvell, and Broadcom. These companies are headquartered in the United States and operate a sales organization essential in the process of entering Korea, FAE(Field Application Engineer) organization, and CS(Customer Service) organization that smoothly supplies logistics. As described above, the peculiarity of these organizations is that, in Korea, there is no marketing organization in charge of the business department, development organization under the CTO, purchase and production organization, and HR department.

[Figure 6] Global and Korean Organizational Structure of Global Non-memory Semiconductor Companies



Korean organizations have a distribution network structure through agencies in almost all companies for strategies to maximize their efficiency and reduce potential business risks, which are shown in 〈Figure 7〉.

[Figure 7] Korean Distribution Structure of Global Semiconductor Companies

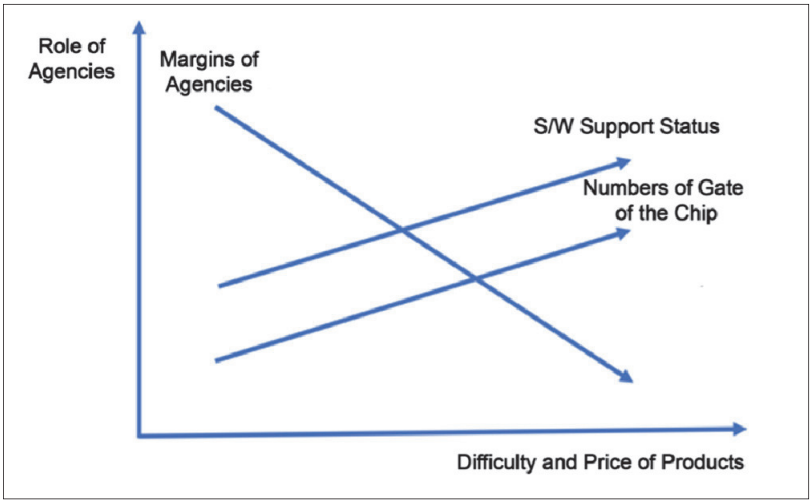


The structure shown in 〈Figure 7〉 is showing that the market does not have a simple and uniform vertical distribution structure, but rather has a distribution structure in the form of an individual mesh in the Mass market with major customers according to the Korean market strategy of each semiconductor company. However, looking at the overall flow, large corporations such as Samsung Electronics and LG Electronics have direct distribution channels supported by Korean branches, and in the case of mass market, the market is managed through agencies. Looking at the domestic agencies corresponding to this, Korean companies include UniQuest and Daejin Semiconductor, and there are Arrow, Avnet, WTMicro, WPG Korea, and Serial, which have global distribution networks such as in the U.S., Taiwan, and Singapore. In addition, these global companies have significantly eroded the Korean market and have considerable dominance. These supply chain structures are not unique to Korea, but they generally have similar distribution networks in regions such as the U.S., Europe, and China. Comparing 〈Figure 5〉 and 〈Figure 7〉, the development and production stage tends to have one direction of a certain distribution network due to the nature of semiconductor manufacturing, but the supply chain shows a very complex and flexible distribution structure according to each individual company's localization strategy. In addition, one peculiarity in the supply chain is that each semiconductor manufacturer operates agencies to maximize efficiency in that supply chain.

〈Figure 8〉 explains the distribution margin of the agency based on the role of the agency and the characteristics of the semiconductor products. The difficulty of the semiconductor-related distribution business increases depending on whether the software used in the semiconductor is supported and the number of gates of the semiconductor. If the end customer has purchasing power, they tend to prefer direct transactions from semiconductor manufacturing companies rather than distribution channels through agencies. Therefore, when the product is simple and the demand for software support is low

in Korea's distribution network, it appears that the distribution structure through agencies is preferred. However, in this distribution structure, the role of the agency may change in the future depending on the advent of AI. In other words, one of the current roles of agencies is that they oversee early basic business communication for small and medium-sized enterprises, and if this part is replaced by AI in the future, it is expected that new types of roles of branches and agencies will be created. An example of this is that many call centers are currently evolving from smartphone calls to conversational methods, which are expected to be also applied to semiconductor distribution networks.

[Figure 8] Role of Semiconductor Agencies and Retail Margins by Product Attributes



3. Problems in Non-memory Semiconductor Supply Chain of Korea

3.1 Strategies in Response to Pandemic (COVID-19) and Supply Chain Management

As shown in 〈Figure 2〉 and 〈Figure 3〉, semiconductors are delivered to end consumers through very complex processes in their manufacturing and supply chains. Deepening this problem can be the fact that three companies, namely TSMC, Samsung, and Global Foundry, are monopolizing semiconductor production. In addition, the semiconductor supply market is monopolized by specific companies depending on specific semiconductor parts. Intel and AMD are dominating in the computer CPU, Qualcomm and Samsung Electronics in the AP, Samsung, SK Hynix and Micron in memory, NVIDIA in GPU, and Broadcom and Marvell in the network switch and PHY markets, and the problem of this weak supply chain structure was evident in the context of the pandemic. The semiconductor industry is a device industry that requires enormous investment. Therefore, due to these characteristics, the distribution structure of the market is very unlikely to fluctuate within a short period of time.

Seoul Economy, in the 2022.03.13 newspaper under the title "On the collapse of the supply chain... Extended production disruptions at Hyundai Motor's Ulsan plant," explained Hyundai Motor's severe

difficulties in corporate management due to serious supply chain problems caused by COVID-19. The COVID-19 pandemic has caused the global supply chain to collapse out of control and caused a crisis in the global economy. This crisis was different from the past uncontrollable crisis in that it occurred worldwide, not limited to specific regions, and that it is expected to take a considerable amount of time to return to pre-pandemic economic levels. Until then, the supply chain management strategy was to secure a low-cost production base and minimize inventory (Yang Jae-Yong 2020).

According to a research paper on global supply chains in the post-pandemic era by Willie C. Shih, the Harvard graduate school, it was diagnosed that the disruption and shortage of manufacturing supply due to the COVID-19 pandemic revealed weaknesses in the global supply chain, which had been in crisis due to the trade war, and explained that it was because many companies failed to strictly identify or respond to the weaknesses of hidden supply chains. As a solution to this, it was proposed to create a supply chain map to identify risk factors. It also proposed securing supply sources across various regions, increasing inventory of key materials to mitigate risks, recheck product strategies, and exploring new manufacturing technologies that can increase flexibility and resilience (Willy C. Shih, 2020).

3.2 Korean Patriarchal Leadership and Appearance of MZ Generation

The theories of leadership, which began in the United States, are developing and evolving in various forms such as characteristic theory, behavior theory, situational theory, and substitution theory (Baek Ki-bok, 2016). Based on this, the theory has been developed that interprets leadership differently based on cultural differences. The difference in the relationship between the boss and the team members within the organization was presented based on comparisons between countries, and it was found that the appearance of an authoritative patriarchal leader appeared in Asian cultures that value vertical authority sequences. As the bosses protect and help the team members, the team members must express loyalty, respect, and appreciation to them. Due to these cultural differences, Hofstede (1995) argued that the most characteristic cultural difference between Korea and the United States in the study of leadership is power gap and individualism, emphasizing that Korea values a sense of community, compassionate disposition, face-oriented, loyalty, and harmony due to its higher power gap and collectivism characteristics. Accordingly, he explained that members try to adapt to organizational management methods such as top-down uniforms and accept unequal structures in the organization. On the other hand, the United States showed a difference that it comparatively prefers independence and values personal freedom and joy of achievement (Lincoln, 1989).

In studies such as Baek Ki-bok's, a representative leadership study in Korea, the Korean-style leadership theory newly interprets the status of a leader from an exclusive perspective linked to bosses, colleagues, and subordinates and explains it as a being that embodies Korean cultural values. In this study, 〈8 Factors of Korean-style Leadership and Definition〉 is suggested as below.

<Table 3> 8 Factors of Korean-style Leadership and Definition

Factors	Definition
Self-Positivity	Status where everything is fearless and full of confidence with the "you can do it" spirit
Leadership	An act of giving up comfortable rights and sacrificing exemplary for the public good by taking the lead in bad things and things you don't want to do
Passion for Achievement	A way to overcome all difficulties with a sense of mission and duty to achieve the impossible by immersing yourself in the mission
Upward Adaptation	The tendency to recognize the authority of the boss and to avoid unnecessary conflicts and establish effective relationships so that the best performance can be achieved by adapting well to his style and personality
Horizontal Harmony	Efforts to build the trust necessary for collaboration and information sharing by acting in a way that does not interfere with your relationships with your colleagues
Downward Temperature	Actions that lead to altruistic commitment by creating a family atmosphere by forming an emotional sense of unity with subordinates
Future Vision	Actions to establish a direction for the future of the organization and form a consensus with the members to achieve it, thereby creating a future together
Environmental Change	Flexible behavioral tendencies that are sensitive to environmental changes and take risks to break down reality by accepting new paradigms

Also, in Korea, biased leadership that requires such unilateral loyalty has become a social issue through a newspaper article. In Money Today's article on Nov. 28, 2023 [Kakao again… Executives who verbally abused employees], you can see the negative aspects of the leadership of the highest-ranking bosses in the workplace in Korea.

Recently in Korea, the use of generation names such as MZ generation, which collectively refers to the Millennium Generation born between 1980 and 1994, and Generation Z born between 1995 and 2010, is rapidly increasing. Both Millennium Generation and Generation Z are concepts that first appeared in the Anglo-American region, but the term MZ generation, a combined one, is only being used in Korea. The media has been paying attention to their characteristics and traits in response to the boom of these MZ generation terms. In particular, in media such as articles, books, and broadcasting programs, the MZ generation as members of the organization is described as "caring themselves more importantly than the organization", "individualism", and "desire for fairness". Organizations that need to select competent members and manage them to adapt with other generations also have come up with measures, considering the MZ generation to be tricky and difficult to deal with.

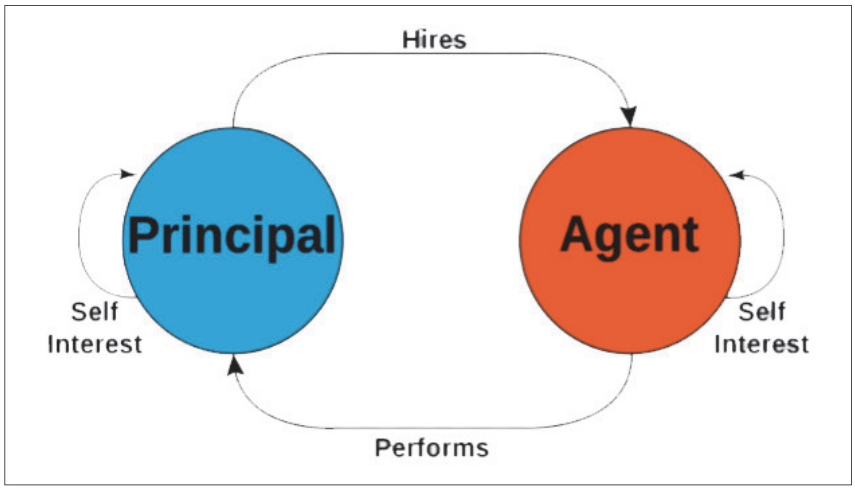
Due to the impact of non-face-to-face and telecommuting due to prolonged COVID-19, frequent turnover and resignation of the MZ generation and Quiet Quitting have recently emerged as new risks in the business environment. Not only companies but also society are making various efforts to address this phenomenon, but the importance of "image communication," which is a "power shown" to MZ generation who are a digital native generation born and grown up with images poured out by SNS and mass media, and put fairness and communication as their top priority, cannot be overlooked (Choi In-young 2023).

As these problems emerged, the need to present a new leadership model by surveying the MZ generation's preferences for leadership awareness types increased.

3.3 Principal-Agent Problem

The fact that SCMs are involved in several stages of semiconductor has a potential problem that it can inevitably cause the problem of the owner's agent. Principal-agent problem was first raised in 1976 by Michael C. Jensen of Harvard Business School and William Meckling of the University of Rochester. The two professors explained that various problems arise due to information asymmetry between principals and agents, and that the root cause is that the agent only delivers information that is advantageous to him, and the owner should invest much expenses to grasp all the information that the agent has. This problem means that the role of the delegated agent in the relationship between the headquarters and the branch office and the relationship between the branch office and the agency can turn into an immoral or ethical problem. This is because agents have their own interests and can act against the interests of the owner. This leads to problems of adverse selection, moral hazard, and free-rider problems. In case of moral hazard of domestic agencies, there may be situations in which the products are traded through rebates on distribution margins in association with branch managers, they may not share important market information that is not in line with the agency's interests with the branch, they may only share information that is favorable to the agency's interests, and there are various practical cases in the semiconductor distribution market, such as transferring responsibility to the branch office when serious issues arise from the customer company. To solve these problems, branches regularly measure the performance of the agency and try to have the agency manager work as an exchange or monitor its work, but it is fundamentally impossible to solve the principal-agent problem.

[Figure 5] Principal-Agent Problem



Ⅲ. Survey Results and Analysis

1. Survey Background

As previously described in the Korean organizational structure of a global non-memory semiconductor company in Chapter 2, Figure 6, the Korean organization has the characteristic of being a member of the sales department of the headquarters and is in charge of tasks related to Korea. In addition, Korean organizations share roles in the process of collaborating sales activities with agencies. It is a characteristic of Korean organizations that they have such a distribution industry structure. In this survey, it was intended to investigate, analyze, and verify the positions and thoughts of actual managers in this regard. In addition, most executives and employees have electronic-engineering-related educational backgrounds due to the uniqueness of the industry's products as non-memory state-of-the-art technology-intensive industries. By investigating the work patterns, including the work satisfaction of executives and employees in these very specialized industries, and comparing and analyzing them with branches and agencies, we tried to analyze the propensity of workers in the industry by analyzing the characteristic personnel management patterns for efficient company operation. Based on the results of this analysis, we tried to present a competitive strategy for the industry.

The survey was conducted on a total of 8 companies: three companies listed on NASDAQ and corresponding to Korean branches (Onsemi-semiconductor, Marvell Korea, and VVDN), and global semiconductor distribution companies (WT, UniQuest, Daejin Semiconductor, Wilcon Semiconductor, and Gemstone Korea). 127 people participated in the survey, and 125 people were surveyed, excluding two cases where feedback on the questionnaire was uncertain. The questionnaire has 48 questions, and the questionnaire is attached to the appendix.

The core classifications and contents of the survey questions are explained in 〈Table 6〉. Question No. 1, 2, 3, 4, and 5 were intended to define the survey subjects, such as the type of work and age of the subject. Among the questionnaire items, No. 6, 7, and 8 attempted to identify the relationship between the branch and the agency from the perspective of industry workers by investigating who has the authority over price and delivery date, which are key authority in the relationship between the branch and the agency. Questionnaires No. 9 and 10 are a survey on sales strategies within the company, and questionnaires No. 11, 12, 13, 14, and 15 are a survey on the organizational structure within the company and communication with other departments. Question No. 16 and No. 17 aim to understand the employee's passion for work, work commitment, and the state of the company's support, and to establish a more desirable organizational management strategy by checking the reliability between the employee and the boss of the questionnaire. Questions No. 18 to 24 are about the scope of support for the company's improvement of personal ability and employee satisfaction, and Question No. 25 and 26 attempted to understand the employee's work commitment. Question No. 27, 28, 29, 30, 35-39 confirmed the relationship between employees and their bosses and their subordinates, and

the degree of satisfaction with employees' evaluation and their willingness to change jobs were investigated through question No. 31, 32, and 33. The purpose of this survey was to suggest strategies and alternatives for how meaningful the items of Korean-style leadership mentioned in the previous survey could be when they were targeted at non-memory industry workers. Questions 40 to 43 are a survey of NSS communication and the working propensity of the MZ generation, a new form of work collaboration. Questions 44 to 48 were intended to derive a strategy for a desirable partnership between the branch office and the agency by evaluating the relationship between the branch office and the agency that occurred in the severe supply-demand imbalance that occurred during the pandemic. In addition, a market survey was added to see if there are any problems such as moral hazard that may arise due to the principal-agent between the branch office and the agency.

〈Table 4〉 Survey Questions and Summary

Questionnaire	Contents
1,2,3,4,5	Type of work and definition of survey subjects
6,7,8	Investigation of pricing and delivery decisions in the distribution industry
9,10	Company's core strategic direction
11,12,13,14,15	Status of information exchange between different departments within the company
16,17	Employees' enthusiasm for work and the company's responsiveness
18,19,20,21,22,23,24	Improve employee personal skills and support from the company
25,26	Employees' work engagement
27,28,29,30,35,36,37,38,39	Employees' confidence in their bosses
31,32,33,34,35	Satisfaction with the employee evaluation and compensation system
40,41,42,43,	Changes to the new working environment (SNS, Generation MZ)
44,45,46,47,48	Branch-agency relations during the pandemic

2. Survey Results and Analysis

〈Table 1〉 shows the results of a survey on the questionnaire of Appendix I. According to the order of each question, No. 1 is the number 1, and the average value perceived by the survey subjects is considered the most reliable answer to the question. In addition, in the case of multiple responses as in questionnaire items 7, 8, 9, and 10, the number of multiple choices was changed into numbers to investigate which factors influence the question due to the nature of the question.

2.1 Awareness of affiliated company

As a response to question 1, 'What kind of business do you work for?', 100% of branch workers said they work for a semiconductor company, and 98% of branch workers said they work for a distribution company. What is surprising about this result is that even though the duties, responsibilities, and roles of employees working at branches and agencies in Korea are not significantly different, they have conflicting perceptions of the definition of the company they belong to. The roles of branch

〈Table 5〉 Average Value of Employee's Work Environment and Satisfaction

No.	1	2	3	4	5	6	7	8	9	10	11	12
Branch	-	-	-	2.60	2.40	4.87	1.40	1.40	2.33	2.13	2.40	3.20
Agency	-	-	-	3.23	2.30	4.25	1.59	1.36	1.99	2.44	3.72	3.13
Average	-	-	-	2.91	2.35	4.56	1.50	1.38	2.16	2.29	3.06	3.16
No.	13	14	15	16	17	18	19	20	21	22	23	24
Branch	3.00	2.87	2.40	2.33	2.40	3.40	2.20	1.87	3.87	2.30	2.46	1.53
Agency	3.12	3.40	2.70	2.87	2.85	4.57	2.39	2.35	4.80	2.76	3.04	2.01
Average	3.06	3.13	2.55	2.60	2.63	3.98	2.29	2.11	4.33	2.53	2.75	1.77
No.	25	26	27	28	29	30	31	32	32	34	35	36
Branch	1.93	1.47	1.67	1.87	1.53	1.60	2.20	2.27	1.73	1.53	1.53	5.53
Agency	2.68	2.03	2.48	2.38	2.07	2.06	2.79	3.08	3.08	2.10	1.95	5.94
Average	2.31	1.75	2.07	2.13	1.80	1.83	12.49	2.68	1.98	1.82	1.74	5.74
No.	37	38	39	40	41	42	43	44	45	46	47	48
Branch	2.33	1.73	1.87	2.93	3.07	3.33	3.47	2.67	2.60	2.13	0.93	4.93
Agency	2.26	2.33	2.31	3.39	3.84	3.75	3.74	3.37	3.47	3.04	1.41	4.72
Average	2.30	2.03	2.09	3.16	3.45	3.54	3.60	3.02	3.03	2.59	1.17	4.83

salespeople and the duties of salespeople at agencies are not particularly different, such as developing new customers and negotiating the price of ongoing projects, and smoothly managing the product's supply chain. However, the clear difference in perception of the identity of the company to which they belong suggests that the company's vision, management strategy, and the purpose of the employees' work can be improved only when the leader of the company is established in the future. The contents and implications of these surveys have become important basic data for new management strategies in Chapter IV.

2.2 Constitution of Employees

As a result of the survey on question No. 2, 'What position/job are you in?', the average of branches and agencies was 41.6% for sales workers, 15.2% for engineers, 14.4% for CS (customer service), and 28.8% for others (accounting, quality verification, etc.). As a result, it was verified that the opinions of survey workers were not limited to specific occupations but were the overall opinions of those working in the industry. This demonstrates that the organizational structure of non-memory-related companies entering Korea has a specialized manpower structure in the sales organization as described in Figure 6, and does not have a product development department, marketing (promotion), or legal organization. In addition, as shown in 〈Table 5〉, 8% are in their 70s and 60s, 28% are in their 60s and 50s, and 28% are in their 40s and 30s, which are evenly distributed overall. The difference is that the average age of the branch office is 2.64, while that of the agency is 3.18. This means that the average age of employees working in the branch office is higher than that of the agency employees. This means that the branch's manpower is relatively aging compared to the agency.

〈Table 6〉 summarized the age distribution of survey subjects by industry, and 〈Table 7〉 scaled the survey subjects back to a percentage.

〈Table 6〉 Age Distribution by Occupation of Survey Subjects

Category	70s-60s	60s-50s	50s-40s	40s-30s	30s-20s	Total(No.)
Sales	2	11	19	13	6	51
Engineer	4	16	9	3	0	32
CS	0	0	2	12	3	17
Etc.	4	8	6	7	0	25
Average	10	35	36	35	9	125

〈Table 7〉 Age Distribution by Occupation of Survey Subjects (percentage)

Category	70s-60s	60s-50s	50s-40s	40s-30s	30s-20s	Total(%)
Sales	3.9%	21.6%	37.3%	25.5%	11.8%	100.0%
Engineer	12.5%	50.0%	28.1%	9.4%	0.0%	100.0%
CS	0.0%	0.0%	11.8%	70.6%	17.6%	100.0%
Etc.	16.0%	32.0%	24.0%	28.0%	0.0%	100.0%
Average	32.4%	103.6%	101.1%	133.5%	29.4%	400.0%

Looking at the survey results above, sales managers and engineers are older than workers in customer service (CS) and other occupations, and, there is a relatively small influx of younger age groups.

2.3 Authority of Pricing and Delivery Dates

The average value of 4.87 in the branch and 4.25 in the agency was derived from the perception of pricing rights for products sold through questionnaire 6. The fact that less than 25% of the branch's sales representatives think that they have pricing rights, and 0% of the price-setters answered that they are themselves in questions 7 and 8 indicates that Korea's non-memory industry has a strategy to unify and manage products globally by empowering the headquarters' marketers or separate decision-makers without granting them to Korean sales representatives. However, there is a possibility that these price controls may not conform to Korea's fair-trade policy. Citing the purpose of the corporate transaction policy on agency transactions, it is stated that the Act on Fair Agency Transactions (Enforcement on December 23, 2016) was enacted to contribute to the healthy development of the national economy by establishing a fair-trade order for agency transactions and complementing each other in equal positions. In other words, the headquarters' intervention in final consumer prices and the global non-memory company's strategy of reducing the agency's pricing power may not be in line with Korea's fair-trade policy, and the example of this is as follows. Yonhap News announced on 2024.04.01, that the Fair-Trade Commission is investigating Texas Instruments (TI) of the United

States and NXP companies of the Netherlands on charges of violating the Fair Trade Act under the title of "Fair Trade Commission, TI-NXP of foreign semiconductor companies." In the background, the two companies are suspected of unfairly intervening in pricing, including maintaining resale prices, in the process of selling semiconductors through Korean dealerships. In this project, this allegation of unfair intervention was indirectly demonstrated through a market participant's survey.

2.4 Work Attitude and Internal Communication

No. 11 to 15 of the questionnaires were about how much detailed information employees of branches and agencies in the non-memory industry understood about communication and work with other departments, with an average value of 2.55 to 3.16. In addition, questions 16 and 17 were about how actively employees provided new ideas to improve their work and how much the company responded to them, and average values of 2.5 and 2.63 were derived, respectively. This means that employees are passive, not active, in challenging new ideas and presenting opinions. In addition, employees are generally 'average' to communication and information sharing of other departments, and employees' willingness to participate in the company's development and the company's interest in it are 'average'. However, it may mean that the company is not actively using the human resources of employees due to the lack of communication and information sharing between internal departments and the actual work attitude of employees in the company. This means that more attention from senior decision-makers and more effort is required for the organization's work communication at the organizational management level.

2.5 Efficiency in Employee Training

The average value of questionnaire No. 20 was 2.11, and through this, it was found that industry employees 'have considerable enthusiasm' for education and study to improve their work. However, on the contrary, the average values in questionnaires 22 and 23 are 2.53 and 2.75, respectively, meaning that survey subjects feel that the company's financial help is 'a little helpful' or 'just so'. This background is related to the fact that the actual number of training sessions is only 2-3 times (questionnaire 18), and the amount of support is only about 1 million won per year (questionnaire 21). From the perspective of the company's management, the fact that employees' satisfaction is not great compared to their investment in improving their work suggests that there is something to be improved in terms of employee education and management.

2.6 Work Satisfaction and Compensation System

Considering that the average values in questionnaires 25 and 26 were 2.31 and 1.75, respectively, it was confirmed in the survey that employees were generally slightly satisfied with or average with the

current role and authority work value, and considered their work somewhat important. However, the average values of questionnaires 31 and 32 were 2.49 and 2.68, respectively, showing that the work performance method and compensation structure were relatively negative compared to the importance of their work. As a result, it was confirmed that employees are willing to actively challenge new work and position opportunities as the average value of questionnaire 33. These results imply that to improve the individual skills of employees and enhance their work, a strategy is needed to increase the employee's loyalty to the company and the employee's commitment to work by giving new work and opportunities without fixing the employee's work for a long period of time. The average value of the branch office was relatively more positive about the work performance and compensation system of branch and agency employees. This may be since there is a more system for salaries for branch and agency employees, but this will be demonstrated in further research and will be excluded from this project.

<Table 8> Job Satisfaction and Compensation System of Branch and Agency Employees

Category	No. 25	No. 26	No. 31	No. 32	No. 33
Branch Average	1.93	1.47	2.20	2.27	1.73
Agency Average	2.68	2.03	2.79	3.08	2.22
Total Average	2.31	1.75	2.49	2.68	1.98

2.7 Employees' Trust in their Bosses, Work Communication, and Teamwork

Questionnaires 27, 29, 30, 34, 35, 36, 37, and 39 are about the employee's trust in the boss and work communication. The overall average was 1.7, and the range was 1.51 to 2.18, which did not show a large deviation. This means that work communication between the boss and the subordinates is going smoothly in each company, and there is no big problem with the subordinates' trust in the boss. In question 36, it means that there is little experience of verbal violence in the company, or a small number of workers respond once a month, so there is no coercive atmosphere within the company. However, as explained in the employee's work satisfaction survey in Figure 6 below, the relationship between the boss and the employee is directly related to the employee's resignation, so continuous interest and monitoring within the company are very important. Questionnaire 38 is a question about the guarantee of the employee's personal life, and the average value of 2.03 for all survey workers was generally positive. However, looking at the scores between the branch office and each agency, there is a deviation.

<Table 9> Satisfaction with Guaranteeing the Employee's Personal Life

Category	Vendor AVG.	Agency A	Agency B	Agency C	Agency D
Average	1.73	2.00	2.33	2.00	2.97

Question 40 is about whether social networks (such as KakaoTalk or Band) between employees are helpful in improving work efficiency, and the average value is 3.16. In general, they answered 'average'. However, 30.6% of the respondents said 'unhelpful' or 'very unhelpful'. This means that the percentage of negative perceptions of SNS in the way of work communication among employees is very high, suggesting that the reliability of the employee's communication method should be increased by avoiding this.

Question 43 was about the company dinner culture to promote the team building of employees, and the average value was 3.38, acknowledging that the company dinner culture was somewhat necessary. However, the fact that 20.5% of respondents responded negatively to the company dinner culture shows that a careful approach to the method and the number of times of the company dinner culture is needed.

2.8 Relationship between Branch and Agency during Pandemic

Questionnaire 44,45,46,47 is a survey on whether the business collaboration relationship between the branch and the agency was positive or negative during the pandemic. This is a response to the experiences of actual workers in the background of the abnormal situation during the severe supply chain collapse that occurred during the pandemic and the relationship between the branch and the agency. The average value was generally confirmed to be normal.

〈Table 10〉 Average Value of Response on Relationship of Branch and Agency during Pandemic

Category	No. 44	No. 45	No. 46
Branch Average	2.67	2.60	2.13
Agency Average	3.37	3.47	3.04
Total Average	3.02	3.03	2.59

Compared to 〈Table 10〉, it can be inferred that the negative perception experienced by the employees of the agency in the process of business collaboration was relatively higher than that of the branch office workers, and overall, more negative things experienced by the sales managers occurred. It was confirmed that these negative problems had phenomena such as unilateral inventory allocation, unfair pricing, and unilateral work coercion, as in the survey results of question 47. These contents are related to the background in Korea, arising from the absence of the right to determine the price and delivery date described above. In this process, question 48 is a survey on unfair transactions (treatment and financial corruption), which means that there is little such fact.

2.9 Comprehensive Analysis of Survey

The comprehensive analysis of the survey is as follows. First, the definition of the affiliated company

was very different even though the perceptions of the employees working at the branch and the agency were similar to each other. As described in previous studies, industry workers are assigned to sales workers, customer engineers, customer service (CS), and other managers, and it was reconfirmed that there are no R&D, product planning, production, and procurement departments. In addition, the number of employees working at the branch office is generally aging compared to the agencies, and by industry, the age of the engineers was generally older, and CS was relatively young. It can be seen that all industry workers responded that they did not have the right to decide on price and delivery date, which is the core authority of sales activities, and that there was a marketing officer or a separate decision maker at the headquarters, and that the Korea Fair Trade Commission is demanding a new type of business model by investigating the transaction process of branches and agencies in the non-memory industry. Industry workers are not very active in presenting and communicating new ideas for developing, growing, and developing the company within the company, and the company's interest is also 'average', so improvement is needed. It was investigated that branches and agencies are not particularly interested in employee training and the development of personnel, which has no special support for education. In addition, it was found that employees' work satisfaction and compensation system should be improved at agencies compared to branches. The company's respect for the employee's personal life differed greatly by agency. Within the company, no major problems have been identified with communication with Generation MZ, and the position of the necessity of the company dinner culture, which has sometimes been an issue in society, has been identified in various ways. Various problems that occurred during the pandemic mentioned in the previous survey were also confirmed in the survey, and it was found that workers working at agencies had more problems.

Ⅳ. Strategic Management Alternatives for Problem Solving

This project investigated the existing business characteristics and problems through prior research regarding reality of the industry, including a survey of industry workers about the distribution stages and roles of branches and agencies of global semiconductor companies in the non-memory industry that have entered Korea. Among the various problems, the important factors and strategic management alternatives are presented as follows.

First, it is a structural problem of the non-memory industry. The highly asymmetric industrial structure, in which Samsung Electronics and SK Hynix related to semiconductors have a global memory share of 60.5%, while Korean companies' non-memory market share is only 3%, resulted in a process of solidifying the distribution structure of branches and agencies in the non-memory market in Korea. This is a positive phenomenon of strengthening and maintaining business leadership from the perspective of foreign non-memory industries, but it is negative for domestic consumers such as Samsung Electronics, LG Electronics, and Hyundai Kia Motors. To solve this problem, the growth and development of

domestic companies in the non-memory industry are required. This means that the support at the national level should be further expanded as the achievement of individual companies is limited.

In addition to direct support from domestic companies, the increase in research manpower through domestic research investment by overseas semiconductor companies should be further strengthened. Among global semiconductors, Renesas, which recorded sales of about $10 billion in 2023, has about 100 researchers in Korea. This is a strategic choice due to the importance of the market for Hyundai Kia Motors in Korea and the increasing semiconductor market in the global automobile market. Korean government should refer to the fact that Intel, TI (Texas Instruments), and Marvell have and invest researchers in European automobile powerhouses such as Magdeburg, Freising, and Ettlingen in Germany. In addition, in the case of Onsemi semiconductor, which has production and investment facilities in Korea, the semiconductor company expanded its investment in Korea by acquiring a former Fairchild semiconductor plant located in Bucheon. As a result, strategies to make the business and investment environment in Korea more positive, such as increasing the number of semiconductor workers, are needed. However, the fact that Intel, NVIDIA, Qualcomm, and Broadcom, the world's top companies in the non-memory industry as a whole, do not have significant development and research organizations in Korea requires improvement.

Second, the influence of Korean branches and agencies is not significant in terms of price and delivery date, which is a key authority in the product distribution process, as shown in the non-memory market share. This is also a positive factor for non-memory companies, but a negative factor for domestic consumers. Like domestic companies, the culture of foreign companies basically follows top and bottom structure. In this situation, it is not easy for domestic branches to secure authority of decision on price and delivery date from their headquarters. As an alternative to solving this problem, a more active role of Samsung Electronics, LG Electronics, and Hyundai Kia Motors, which are in the position of A in the relationship between A and B in the semiconductor market, can be suggested. Senior managers of large domestic companies can meet key decision-makers of global semiconductor companies in person to discuss various business issues, and have a lot of influence. Therefore, senior executives of large domestic companies are required to have a more in-depth understanding of the role and status of the Korean branch, and they can solve the problem of price and delivery date by more aggressively demanding that the top decision-makers of global semiconductor companies to expand the authority and role of the Korean branch.

Another alternative to the delivery date is the growth of domestic semiconductor back end process companies. As we have seen earlier, semiconductor production is divided into pre-processing for wafer production and post-processing for packaging and inspection. When a Korean back end process company produces wafers produced by a foundry company, the final shipment destination of the product is transferred from Taiwan or Singapore to Korea, resulting in a plan to shorten the delivery date through cooperation with Korean back end process companies.

Third, company-level efforts are needed to inspire individual efforts to improve the work commitment and work performance of industry workers. The response to the survey on workers' work satisfaction

and the company's compensation system cannot be evaluated positively overall, and this will be a negative factor in improving productivity and securing overall competitiveness in the electronics industry in the long run. As an alternative to solving this problem, it can be suggested to increase work commitment by increasing the work satisfaction of Korean agency workers. To increase work satisfaction, as shown in the previous survey results, the overall company management, such as enhancing the close communication within the company, enhancing the relationship between supervisors and subordinates, investing in employee education, and ensuring privacy, should be improved in a positive direction. To this end, it is necessary to further develop the Korean-style leadership mentioned in the preceding study to improve the leader's ability to manage employees.

Fourth, it is the principal-agent problem, which became a more obvious problem during the pandemic. One-sided inventory allocation, unfair pricing, and one-sided work coercion occurred at the agency by the branch, and the problems were identified through a survey. In such an abnormal situation, cases in which the agency did not accurately share the relevant business information with the branch and the fact that the agency thoroughly prioritized its own interests mean that the principal-agent problem is a potential problem in the memory distribution process and can surface at any time depending on the business environment. As a fundamental way to solve this problem, the role and status of the Korean branch office must eventually increase, and if the current branch office in Korea does not have the right to decide on its own price and delivery date, the solution will be a long way off. Among global semiconductor companies, STMicro's pricing policy is an example of a strategic alternative to the prices of branches and agencies. In other words, STMicro delegates the authority to determine the final consumer price to the agency, and the Korean branch only controls and manages the price sold to the agency. Accordingly, agencies are responding more actively and quickly to meet the price requirements of end consumers, and agencies are also producing better profit margins than other companies as a result. Through this, the survey confirmed that employees' work satisfaction was also higher than that of other agencies. The results of the employee survey and the establishment of the relationship between the branch and the agency are positive examples showing that the non-memory industry that has entered Korea should actively review and apply in the future.

Ⅴ. Conclusion

1. Summary and Implications

The conclusion and implications of this study are summarized as follows.

First, global non-memory companies that have entered Korea operate organizations primarily for branch-type operations in Korea, and there are limitations in their roles and status accordingly. The fact that branches and agencies in Korea are managed under the control of the headquarters for

pricing and delivery date decisions leads to several problems and is contrary to the interests of end-users. One such example is the Korea Fair Trade Commission's investigation into whether there is an unfair transaction between branches and agencies for the selling price. Another example is that during the last pandemic (COVID19), there was an extreme problem in the semiconductor supply chain. However, although these problems are very dangerous potential unstable factors, branches in Korea could not actively working to solve the problems due to the current authority and organizational status. This means that more efforts of industry workers are needed. The case of STMicro in this industry's overall practice is significant. In other words, it is an example of positive management to maintain and manage the market's distribution order soundly by entrusting the final consumer price to the agency.

Second, due to the distribution organizational structure in Korea, the work satisfaction of industry workers cannot be said to be very high. This will lead to a decrease in the productivity of workers in related industries and act as a factor to resist the influx of new generations, delaying natural generation change and making it difficult. As revealed in the survey, employees are willing to improve and develop their personal abilities, but the company's interest and investment are insignificant, so it is necessary to improve this. To fundamentally solve these problems, related industries need to research and develop new forms of leadership that fit the Korean cultural background. This requires investment in education for industry workers.

Third, it is necessary to improve the fact that Korean non-memory semiconductor companies have a very low share of the global market. Non-memory semiconductors are currently dominated by global companies such as NVIDIA, Broadcom, AMD, Intel, Texas Instruments, and Qualcomm, and the reality is that there are many difficulties that Korean semiconductor companies must overcome, such as difficulty in designing semiconductors, patents for semiconductor technology, and lack of technology development personnel for related software. In this situation, the government's interest and investment focused on memory semiconductors should be expanded to non-memory companies to solve the problem.

2. Limitations of the Study and Further Research

In this project, the specificity of the industry and problems in management were identified through research on the organizational operation of the Korean branch of global non-memory semiconductor companies entering Korea and working environment interviews and surveys with related industry workers. An effective strategic management alternative for management leaders was presented based on this. However, by revealing that this project has the following limitations, it is intended to suggest a useful direction for future research.

First, the scope of this project's research was limited. It was not possible to conduct a survey on companies such as Broadcom, AMD, and Texas Instruments. Although conducted on global companies such as Onsemi Semiconductor and Marvell, it is required to expand the entire scope of the survey. In addition, if we expand to other industries that have entered Korea, such as software industries

including Microsoft or finance, construction, and manufacturing industries that are not related to the semiconductor industry at all, and verify more management cases for Korea's organizational structure and distribution structure, we will be able to increase the validity of the conclusion of this project and present more desirable strategic management alternatives by confirming real-world examples of new alternative proposals.

Second, in this project, a research model for organizational structure was not presented, and the process of verifying it was not carried out. The lack of prior research to present research models is behind that. Further research will be able to present a leadership model necessary for senior executives in the Korean semiconductor industry based on this study, and a desirable management model will be presented through investigation and verification of more cases.

Third, in this project, there is a limitation in that it was not possible to investigate the strategies and positions of executives of the headquarters of global companies in the Korean market. The location of the headquarters was physically limited, being outside the country, and there is a regret that it could not be covered in this project due to difficulties in investigating sensitive security matters such as strategies for Korean organizations. If these investigations and studies were combined, a more advanced and positive strategic management alternative would have been suggested.

References

인베스트코리아, 반도체 산업 정보(2024). https://www.investkorea.org/ik-kr/, 검색일 2024. 4. 29

매일신문, 2023년 9월 11일자. 정우태, 반도체 시장 80%가 '시스템'…한국은 점유율 3% 바닥

서울경제, 2022년 3월 13일자. 공급망 붕괴에… 현대차 울산 공장 생산 차질 연장

양재용, 이형석, 박근완 (2020). "코로나19와 공급사슬관리 전략의 혁신 요구에 관한 고찰: 글로벌 컨설팅 기업들의 제안을 중심으로", 한국경영컨설팅학회, 20(3), 225-236.

백기복, 2016, 리더십 리뷰, 서울: 창민사

머니투데이, 2023년 11월 28일자. 카카오 또 잡음.. "X신들" 직원에 폭언 쏟아낸 임원 논란

최인영 (2023). MZ세대 직장인이 선호하는 CEO의 이미지와 리더십 유형이 조직몰입에 미치는 효과, 석사 학위논문, 명지대학교.

Willy C. Shih (2020), Global supply chain in the post Pandemic Era, Harvard Business Review.

Lincoln J. R. (1989), Employee work attitudes and management practice in the US and Japan, *California Management Review*, 32(1), 89-106.

Jensen, Michael C. & William H. Meckling (1976), Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.

〈Websites〉

Invest Korea (http://www.investkorea.org)