

An Exploratory Study on the Success Factors of Corporate Foresight – Based on the Case of Korea Material Companies

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Abstract: This study noted that the importance of systematic foresight activities increases as preparation for the future becomes difficult due to the high volatility of the corporate environment. The concept and characteristics of corporate foresight were analyzed, and significant issues arising from corporate foresight were derived through case analysis. Corporate foresight, referred to here, can be defined as a series of activities that predict an uncertain future at the corporate level to secure the ability to respond by detecting changes early. The study found that factors such as management commitment, organizational capabilities, and organizational culture influence the practice of corporate foresight. Also, the study confirmed that corporate foresight could generate meaningful results only when actively promoted based on management's understanding of future predictions. Rather than the accuracy of foresight, forming consensus inside and outside the organization and securing the validity of the future prepared by the company through the process of recognition, prediction, and probing of change was meaningful. Corporate foresight is a practice to increase revenue and improve intangible capabilities such as organizational culture and research and development capabilities. Notably, this study analyzed the characteristics and significant considerations of corporate foresight through the case of domestic companies in an environment where corporate foresight is often carried out confidentially, internally, and rarely systematically.

Keywords: Case Study, Corporate Foresight, Corporate Strategy

1. Introduction

Along with COVID-19, the volatility of the business environment is increasing due to the diversification of the global value chain and trade environment, the promotion of digital transformation, and the spread of untextual culture [1]. At the same time, the social regulatory environment is strengthening, and the demand for ESG management is increasingly constraining corporate management. The economic downturn that followed in this environment is causing companies to maintain their financial stability [2]. However, major domestic groups have announced large-scale investment plans to secure new growth engines despite the deteriorating internal and external environment. Based on the top five disclosed corporate groups, their combined investment plans for the next five years exceed KRW 900

trillion, and they are focusing on areas that can become future growth engines [2]. This is an act of proactive risk management in the face of high volatility. In other words, it is an activity to secure differentiated technological competitiveness that can quickly overcome crises at minimal cost and enable sustainable growth.

Securing a company's technological competitiveness is essential in determining its growth potential and contributing to productivity and competitive advantage [3, 4]. Firms' R&D investment, one of the activities to secure technological competitiveness, is mainly pro-cyclical. Still, in some cases, it is also counter-cyclical, which only leads to uniform conclusions from an economic perspective [5]. Considering the opportunity cost effect, it is more efficient to increase

R&D investment during a recession than during a boom, as the opportunity cost of R&D decreases during a downturn due to less revenue being foregone due to reduced production [5, 6]. As such, a company's future preparation activities require decision-making in the presence of various variables. Therefore, corporate foresight is becoming increasingly crucial for systematic future preparation in a highly volatile internal and external environment. Corporate foresight can be defined as a series of activities to predict the uncertain future at the corporate level and secure the ability to detect and respond to changes early.

Just as foresight has gained attention from governments due to increasing competition, resource constraints, complexity, and the growing importance of science and technology capabilities [7], corporate foresight has evolved into an ability that enables companies to respond to external changes promptly to survive and remain successful [8]. As corporate foresight is a strategy for securing competitive advantage, it has been centered on large global corporations that can afford to invest in human resources and funds, so many case studies have been limited to obtaining direct information on corporate foresight [9, 10]. However, as domestic corporate groups have been actively announcing their future response strategies in recent years, it is time to consider the perceptions of corporate groups on related activities and how to utilize them effectively. Therefore, this study examines the concepts and characteristics of corporate foresight and points out what should be considered for effective and efficient corporate foresight based on the case of the corporate foresight of K Group, a Korean chemical company.

2. Literature Review

2.1. Definition of Corporate Foresight

Corporate foresight is the practice of foresight in the future by companies, distinct from foresight at the public level [11]. It is used interchangeably with strategic foresight, the strategic use of a view of the future. Foresight differs from general futurology or future research because it proposes strategies through foresight [12]. Since the Cold War in the 1950s, foresight has spread for military purposes, mainly in the United States, the United Kingdom, Japan, and Germany. Scenario planning, the Delphi technique, etc., were primarily utilized, and in the case of Korea, technology foresight was conducted centered on the Delphi technique in 1993 [13]. Future foresight is used without distinction from technology foresight because technology is widely applied to non-technical areas, and technology significantly impacts value creation [7].

Corporate foresight is said to have originated in the United States and Europe since the 1950s, with companies utilizing methodologies such as scenario planning, Delphi techniques, and technology road mapping. Like corporate foresight, industry foresight emerged in 1994 to rewrite industry rules

and secure competitiveness based on insights into trends in technology, demographics, and lifestyles [14]. Related research has continued to evolve. A common thread in the literature is that foresight practices are intended to enhance capabilities and preemptive responses to secure competitive advantage [15-17].

Højland & Rohrbeck define corporate foresight as a set of practices that support the identification of drivers of change (recognizing), the interpretation of the consequences of drivers individually and organizationally (foresight), and the exploration of new businesses (probing) that enable value proposition and product/service design and market acceptance testing [18]. It is an overall strategic activity involving an enterprise-wide awareness of the need for foresight, activities using appropriate methods and organizations, and applying those results.

Corporate foresight differs from traditional business strategy in that it 1) has a longer time horizon than typical strategic planning and 2) addresses different perspectives and issues in the business environment rather than the company's current business. And 3) it presents issues that challenge existing business practices and values, which can be said to complement the functions of traditional strategy and innovation activities [19].

According to Rohrbeck, corporate foresight has been studied from innovation management, strategic management, and future research perspectives [8]. From the innovation management perspective, corporate futures research is an activity that is necessary to achieve radical or disruptive innovation. From the strategic management perspective, corporate foresight serves as a trigger for corporate change, environmental scanning, and a tool for decision-making. From the standpoint of future research, corporate foresight is a view of foresight activities at a micro level rather than a national level. In this study, corporate foresight is the aspect of corporate foresight from the strategic management perspective, which is securing validity and acting as a driving force in preparing for the future and responding to change.

2.2. Characteristics of Corporate Foresight

Corporate foresight is characterized by the entity performing the foresight activity being a corporation rather than a state. Compared to foresight in the public sector, corporate foresight has only recently gained traction. The development of the IT industry since the mid-1990s has led to rapid technological change, personalization of the consumer market, and the need to respond to diverse preferences and rapid changes in taste [10]. As shown in Table 1, public and corporate foresight have a common goal of detecting changes in future scientific, technological, economic, political, and social fields and enhancing future response capabilities. Still, they differ regarding the purpose of utilization, main participants, foresight period, and project implementation period [10].

Table 1. Difference Between Public and Corporate Foresight.

Factor	Public	Corporate
Key Purpose	Predicting and detecting future changes in science, technology, economics, politics, and society and enhancing our ability to respond in the future	
Detailed Purpose	1 Generate ideas and visions for technology and innovation 2 Propose relevant policies, identify priorities	1 Identify opportunities and risks in the market, technology, and business environment 2 Setting strategic direction
Key Player	Government organizations, professional groups, NGOs, etc.	Strategic planning organizations, research and technology organizations, internal think tanks, etc.
Foresight Period	5~20+ yrs.	2~15 yrs.
Practice Period	1~3 yrs.	3~12 month

The purpose, scope, and method of corporate foresight may vary depending on the company's internal and external environmental factors. Still, successful foresight requires the will of the top management. It is necessary to recognize that corporate foresight is an exploratory activity for the company's direction and vision, not simply to eliminate future uncertainties or establish long-term management strategies [10]. Once this perspective is realized, the activities can naturally expand to new business development and discovery.

Corporate foresight in Korea is known to be centered on a few companies and does not use systematic methods. This is because the organizations involved are more minor than overseas, and the activities are carried out mainly by internal personnel. In addition, since the importance of related activities has not emerged for a long time, the associated capabilities still need to be accumulated, and the methodology still needs to be advanced. While domestic corporate foresight is centered on trend and environmental analysis, overseas corporate foresight is conducted using brainstorming, internet and media analysis, and expert interview methodologies [10, 15].

Although domestic corporate foresight is less sophisticated than overseas corporate foresight, the importance of foresight practices is increasing due to consumers' increased access to information and awareness of ESG compared to the past. In addition, there is a trend of value economy in which consumers evaluate and invest in companies based on their future value and potential based on the level of active response to future changes. Therefore, based on the case of K Group's future growth strategy, this study aims to identify internal constraints in corporate foresight and propose measures for successful corporate foresight.

3. Corporate Foresight Case Study

This case study was conducted by interviewing internal members of K Group who participated in corporate foresight practice, reviewing internal documents, and reviewing relevant press releases. Interviews were conducted in October-November 2022 with 10 people, including C-level executives, from the three manufacturing companies (A, B, and C) of K Group. We also reviewed internal security documents used in corporate foresight practice and press releases related to future strategies from January 2020 to November 2022. However, due to corporate security

regulations, we will describe the cases without specifying the names of the companies and their data.

From the perspective of analyzing the process of corporate foresight, this case study is divided into the background (recognizing), foresight practices (foresight), and results (probing) of corporate foresight identified through literature research. The background of corporate foresight (recognizing) mainly includes changes in the internal and external environment. The formation of managers' perceptions of foresight which can be said to have the most significant influence on corporate foresight activities falls within this scope [15, 20]. Corporate foresight practice (foresight) involves a series of processes in which companies set goals for their activities and utilize various methodologies to generate results. The outcome of corporate foresight (probing) includes specifying business areas and securing related capabilities and the outcomes derived from them.

3.1. Recognizing

The K group, a cluster of Korean conglomerates, specializes in textiles and chemicals and focuses more on intermediate goods than consumer goods. It has a history of financial and telecommunications businesses, but after the IMF, it has been declining and focusing on textiles, fabrics, materials, and fashion. It also operates business groups such as construction, IT, and bio, but its size and sales are insignificant. The K Group strongly tends to pursue new businesses with a fast-follower strategy. Due to the nature of intermediate goods manufacturing, it tends to be highly influenced by demand companies. In the late 2010s, the group faced issues like the need for future growth engines and owner risk. In addition, the group made large-scale investments in new materials and bio-new businesses. Still, the performance needed to be improved compared to the investment. The lack of business reorganization potential, genuine private companies and the constraints on performance creation by affiliates centered on internal transactions were widely evaluated.

Against this background, K Group established the Future Research Organization to discover innovation engines and develop high-value-added technologies. An external person was hired as the CTO to operate independently from the existing R&D organization, and the role of a think tank from the perspective of a group of companies rather than a single company was assigned. With the will of the CTO, who has experience working in a global conglomerate, the Future

Research Organization promoted the establishment of mid- to long-term technology strategies based on foresight. This is because the need for technology forecasting has been emphasized for a long time compared to corporate foresight. Properly managing the ratio between long-term and short-term research is essential in technology management. The Future Research Organization has set up a relevant dedicated organization to manage the organization's mid-to-long-term technology strategy and portfolio. It updates the technology strategy and portfolio annually in line with trends and market conditions.

In the past, when assessing the lack of future growth engines for the group, the management should have considered any special preparations. Still, with the COVID-19 pandemic, they recognized the need for systematic future preparation activities through the technology organization's mid-to-long-term technology strategy formulation activities. The changes in the industrial environment brought about by COVID-19 have instilled the recognition that securing innovation capabilities is essential for companies to overcome the crisis. Systematic corporate foresight practices are an easy tool to ensure the feasibility of new businesses. Accordingly, each affiliate in the group has been conducting foresight practices to discover new business items and establish strategies not limited to existing industrial areas for 10 years or more. In this study, we focus on the case of three manufacturing-related subsidiaries that conducted stakeholder interviews during K Group's foresight practices.

3.2. Foresight

The three manufacturing-related subsidiaries of K Group conducted foresight practices jointly and created a final product that reflected the internal status of each company. This was mainly due to the need for more organizational resources and the absence of relevant expert personnel. Still, it was also aimed at engaging members from various backgrounds to conduct analysis activities from multiple perspectives. Another purpose was to build consensus among affiliates to select strategic items considering group-wide scalability. Since the nature of a corporate group makes it relatively easy to create added value and achieve economies of scale by forming value chains among affiliates, we aimed to conduct foresight practices that reflect this perspective. Therefore, the TF was composed of practitioners, team leaders, and executives from the new business-related organizations of the three manufacturing companies, as well as those in charge of establishing mid- to long-term technology strategies from the future research organization.

The scope of corporate foresight for the three manufacturing companies in K Group was for more than 10 years and was not limited to the existing business areas. Limiting the scope to the current business areas may limit scalability, and the foresight results may need more meaning as a future growth engine. In addition, the nature of the businesses and organizational culture of the companies is such that they seek stability. It was determined that good foresight for the future would only be made if the scope was

expanded. In addition, it was emphasized that it is necessary to present specific strategies for implementation rather than simply deriving scenarios for the future. It was noted that it is essential to show possibilities and implementation strategies through execution rather than merely predicting the future.

The corporate foresight activity utilized the trend and gap analysis methods. Trend analysis can be seen as a process of observing, analyzing, and recognizing change trends. The gap analysis method is a method for identifying the gap between the expected future situation and the current situation and exploring what is needed to overcome the gap, which aims to refine the strategy in terms of response to environmental changes [21]. Both methods were utilized to refine an actionable strategy, not just predict the future.

As a result of the trend analysis, end-market trends such as sustainability, quality of life changes, and urbanization were derived. A gap analysis was conducted to respond to these trends, and promising business lines were selected, such as hydrogen economy response and eco-friendly material business lines. Factors that actively reflect corporate characteristics, such as corporate vision and future direction, are prioritized evaluation indicators in identifying profitable business groups. Due to resource constraints, companies cannot pursue all profitable businesses, so they have to prioritize them, and setting specific indicators is essential to ensure objectivity.

The three manufacturing companies in K Group utilized a combination of quantitative and qualitative indicators. The quantitative indicators were mainly indicators of economic value, and one of them considered the growth rate of related industry ETF stock prices to confirm the market's evaluation of the industry. In other words, we analyzed the market potential of the entire sector through ETFs rather than the stock price of a single company. As a qualitative indicator, the potential for intra-group synergies was heavily weighted, and highly publicized industries were avoided. The trend of expanding the role of the government has been seen due to COVID-19, and the promise of related industries has emerged, but K Group has been conservative in entering the sector.

3.3. Probing

The three manufacturing companies of K Group operated a task force for corporate foresight for seven months, and the CEOs of each company shared the future growth strategy derived from this process. The future growth strategies included megatrends discovered through corporate foresight practices, corporate visions, business areas under consideration for new businesses, results of feasibility studies on those areas, and detailed business implementation plans.

In addition, each company is not just planning its future growth strategy but is engaged in various activities to implement it. Each company has established a dedicated organization for execution and is working to refine targeted businesses and secure relevant capabilities. The execution strategies of the three manufacturing companies differ depending on the size of each company, the will of

management, and the business environment. Company A is the most resource-rich of the three manufacturing companies and has established a CSO organization to implement its future growth strategy; and is operating business group-specific TFs within that organization to implement the selected business groups. In particular, it is said to be focusing on business opportunities in the hydrogen industry value chain. In the case of Company B, a future strategy team has been newly organized to target and review the UAM and aerospace industries from the perspective of expanding and developing the existing main business, the mobility market. In the case of Company C, future business items in terms of expansion of the current business were finally selected to establish each company's execution strategy, and the existing new business organization continues to carry out related work. As you can see, the results of corporate foresight can vary depending on the company's characteristics and the management's decision-making. Therefore, if this is not considered in corporate foresight, unexpected results may appear, and the purpose of corporate foresight may fade.

As companies proceed with strategic approaches to entirely new industries rather than existing ones, they promote acquiring related capabilities through open innovation rather than direct capability acquisition. Open innovation activities are considered much more efficient regarding cost considerations and securing relevant human resources, infrastructure, and networks [22]. The company has shared its activities to ensure capabilities in these future new business areas with shareholders through press releases increasing share price. It is challenging to see the results of foresight in sales in the short term. However, as consumers and shareholders are increasingly interested in a company's future vision and viewing companies from an ESG perspective, forward-looking performance is partially reflected in stock prices.

3.4. Corporate Foresight Critical Issues

From the case studies, we can synthesize the critical issues in each stage of corporate foresight as follows. In the Recognizing setting, the need to foresight a company's future tends to be readily recognized by the internal and external environment, e.g., changes in the industry and the will of the owners, management, shareholders, etc. However, there are many cases where there are limitations in establishing such foresight practices as a concrete corporate activity. It can be challenging to define the purpose, goals, etc., for foresight practices and share them with those who perform corporate foresight practices. In the corporate foresight phase, we found that the organization's attitude toward innovation influences results. After all, companies conduct corporate foresight to run their businesses efficiently and effectively, and their expectations from foresight vary accordingly. In the probing phase, the use and dissemination of results can be an issue for corporate activities. To become a meaningful activity, it seems necessary to think about how to use the results of corporate foresight, spread it within the organization, and perform it continuously rather than just

predicting and doing it once.

The results of the case studies showed that the purpose of foresight varies depending on the size of the company, the environment, and the will of the management and the form of the outputs varies. In addition, although recognizing the need for foresight was similar, the attitude toward foresight depended on the management philosophy and will. This shows that foresight can vary depending on various characteristics of the company. Therefore, it is necessary to consider which corporate factors affect corporate foresight and how they should be regarded for efficient and effective corporate foresight activities.

In addition, in corporate foresight, strategy formulation, and action plan refinement are essential concomitant activities for meaningful corporate foresight. This can directly impact a company's innovation activities, especially R&D, external cooperation, and investment activities. It is worth checking how the company's innovation activities affect its foresight activities. The case study found that companies actively considering investments could use foresight to justify those investments more specifically and strategically. In contrast, companies less likely to invest in new businesses were less likely to engage in foresight activities. This suggests that an organization's innovation behavior and receptivity to change may impact business foresight.

In corporate foresight, the dissemination of foresight results and the implementation of strategies based on them have a significant impact on the effectiveness of corporate management activities and foresight. Previous studies have shown that companies that actively share and disseminate the results of corporate foresight perform much better. However, due to the characteristics of Korean companies, not only are investments in the mid-to-long-term future relatively modest, but many companies also do not invest in corporate R&D. This can also be seen in corporate foresight practices, which tend to favor foresight for short to medium term over a long time or believe that it is the role of a few strategic planners. To secure the effectiveness of corporate foresight, it is necessary to consider how to disseminate and implement the foresight results successfully.

4. Conclusion

This study focuses on the importance of systematic corporate foresight practices, as the high volatility of the corporate environment makes it challenging to prepare for the future. The concept and characteristics of corporate foresight are analyzed, and the main issues arising in corporate foresight are derived through case analysis. Corporate foresight refers to processes in which companies predict the future through various activities, detect changes, explore related business opportunities, and securely associate capabilities. Unlike foresight, which was conducted for policy decision-making at the national level, it is a practice to facilitate corporate competitiveness and profit generation. It has limited resources and, similar to R&D, can be

deemphasized in times of corporate crisis. However, just as innovation activities such as R&D are recognized as essential for strengthening corporate competitiveness, corporate foresight is expected to become an important part of corporate activities.

Corporate foresight can only produce meaningful results if it is actively promoted based on management's understanding of the future. In this case, the accuracy of the foresight should not be considered, but rather the process of building consensus and securing validity within and outside the organization on the future that the company is preparing for through various activities to foresight the future. In addition, as corporate foresight is an activity to refine ideas and explore business opportunities through recognizing, foresight, and probing changes, it is essential to precisely establish the purpose and scope of the practice in this process. This is because the process is as necessary as the result, and proceeding with the same idea and direction is needed.

This study is limited because it is based on a single case, and the results have yet to be translated into meaningful business outcomes. However, it is significant that it analyzes a point where internal members have formed a consensus on preparing for the future. The market has recognized its significance through stock price increases. This case study can be used as a basis for an in-depth analysis of the interview results. It can be used as a basis for defining the elements of corporate foresight and presenting a successful corporate foresight model in the future.

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