The Management of Logistics Project Risk --a Case Study of Hanjin Logistics

Dafeng Xu, Cunming Zhang
Economics and Management Shandong Jiaotong University, Jinan, Shandong, China

***Abstract*—Due to increasing competition in the market and economic globalization, logistic enterprises have gained an opportunity to make rapid development. Projects involve many risks and may not even be profitable. Therefore, the prevention of risks and control of logistics project management are of great significance to enterprise operation. This paper, based on an example of the bankruptcy of Hanjin shipping company, demonstrates the importance of risk prevention and control of logistics project management. In the last part of this paper, it makes some suggestions on how to establish risk prevention and a control mechanism, hoping to lay a foundation for the normal operation of logistics projects.**

***Index Terms*—the Hanjin shipping company; Logistics project risks; risk prevention and control mechanisms.**

I. Introduction

With the acceleration of economic globalization, the logistics industry has ushered in an opportunity for a brighter future. However, we should take into account the opportunities and risks side-by-side. The logistics industry is developing rapidly at the same time the risk is also increasing. The risk of logistics project management is that people have to bear a large burden when investing a lot of resources despite not knowing whether it can generate profits during the development of the logistics project. This kind of risk has become a bottleneck restricting the development of logistics industry. Risk prevention and control mechanisms are of vital importance to logistics enterprises. Only by perfecting the risk prevention and control mechanisms, can logistics enterprises develop steadily and rapidly. Otherwise the project will suffer great losses, the company might even collapse [1]. Therefore, taking the bankruptcy of Hanjin shipping company as a typical case, this paper discusses the importance and strategies used in logistics projects for risk prevention and control mechanisms, so as to provide a reference for the steady development of logistics enterprises.

II. The Analysis of the Hanjin Shipping Company Bankruptcy Case

A. The Introduction of the Hanjin Shipping Company

The Hanjin company is the largest shipping company in South Korea and the seventh largest in the world, with more than 100 container carriers and 10 well-equipped modern container terminals. The total transport capacity is up to 620,000 TEU. The company has more than 200 branches and third-party agents as well as more than 60 routes. The company operates 80 key ports in 35 countries, ships hundreds of millions of tons of goods to them each year and it also plays a leading role in logistics systems.

In August 2016, the Hanjin Shipping company did not receive sufficient financial support from its parent company, the Hanjin Group. Korea Development Bank, the parent company's biggest creditor, decided not to continue to support them. The company was taken over by a court in early September, beginning bankruptcy proceedings and halting stock trading. At present, the company was facing a liquidity gap of more than $1 billion. Although Hanjin Group has been required by creditors to inject capital into its subsidiary, Hanjin Marine, to solve the liquidity shortage, the Hanjin Group has refused to approve it. Previously, Hanjin Group had invested more than $700 million in Hanjin shipping through Hanjin Air. According to statistics, the losses amount of Hanjin Shipping reached 471.3 billion won in the first half of 2016, and Hanjin Group has been unable to fill its debt hole.

B. The Analysis of Hanjin Shipping Company Bankruptcy

2.2.1. The misjudgment of the company management

In the 1990s, when the global shipping industry was in turmoil, the market was chaotic and complex, with freight rates rising and falling. Entering the 21st century, the world shipping industry has ushered in the new era. Since 2003, shipping has become the world's most profitable industry, with freight rates soaring and investors pouring money into shipping. Hanjin shipping company was established in 1977 and became one of the representative enterprises in South Korea in 2000. In 2006, it had its own ship management company.

South Korea's exports rose from $10 billion in 1977 to $400 billion in 2008. The rapid growth of exports is conducive to the expansion of the South Korean shipping company, and also to its root cause. Global capacity was well above market demand in 2008. Hanjin shipping compant hit bottom in 2009 after a downturn in the shipping industry following the 2008 financial crisis and a sharp contraction in global trade demand. The senior managers of Hanjin shipping company misjudged the situation and blindly continued to expand and make large-scale shipbuilding regardless of the actual market situation (including container ships and dry bulk cargo fleets). And the largest vessel has a scale of 13,000 TE to

14,000 TEU [2]. In recent years, the proportion of new ships growth has also grown surprisingly. New ships account for more than 50% of the total capacity of the current operating fleet, resulting in excess cargo and overcapacity.

2.2.2. Falling freight and high charter

The main source of profit for Hanjin shipping company is freight. Along with the development of science and technology, the cost of shipping is gradually decreasing, and the freight rate is greatly reduced, which directly leads to the sharp decline of the company's profits. Before 2008, many shipping companies blindly expanded their own companies to seize market share. After the outbreak of the financial crisis, a large number of ships were idle and excess freight capacity. Most of Hanjin Shipping company's ships are chartered [2], many under contracts lasting more than a decade. High long-term chartering costs worsened Hanjin Shipping company's financial situation and eventually led to its bankruptcy.

2.2.3. The disorder of company management

Enterprise management plays an important role in the implementation of enterprise decision-making and the sustainable and healthy development of enterprises. In recent years, Hanjin Shipping has changed the company's President many times [3]. Hanjin Group founder died in 2002 and the company's President, Zhao Xiugao, took over. In 2006, the company's President was replaced by his wife. After 2008, the company's performance plummeted, and the management was forced to transfer to Zhao Lianggao. In 2014, Cui Enying took over the company as the president. The frequent change of the company's president and disordered cohesion were not conducive to the formation of positive feedback for the company's leadership decisions, nor to the long-term development of company and the implementation of leadership decision-making.

C. The Enlightenment of Hanjin Shipping Company Bankruptcy Case

Hanjin shipping company entered the stage of bankruptcy reorganization, the failure of the logistics project management was the main reason. If the company failed to prevent and control the risk of logistics project management, it would lead to the rupture of capital chain, management problems and even bankruptcy. Here mainly from the company's internal environment, goal setting, event identification, risk assessment and response, control activities and monitoring the aspects such as bankruptcy events bring us enlightenment [4]. We should fully realize the importance of logistics project management risk prevention and control.

2.3.1. Internal environment

From the internal environment, family conflicts frequently occured in companies, and shareholders were confused and inactive. The company paid little attention to the risk prevention and control of logistics project management and lacked the ability to effectively deal with problems. As the parent company of Hanjin Shipping company, Hanjin Group did not provide enough support, which was inseparable from the family dispute. The death of the group's founder was followed by a succession of family disputes that eventually led to its break-up in 2006. Hanjin Shipping company also split from the Hanjin Group in 2009, Cui Enying handed control of the company to Korean Air in exchange for financial support. It was not until 2014 that Cui took control of the company again. However, the company's performance did not improved greatly, and the update of service and ship did not followed up in time. The gradual accumulation of project management problems eventually led to excessive debt and the rupture of the company's capital chain.

2.3.2. Goal setting

Goal setting refers to the risk preference of an organization. Whether the goal setting deviates from the maximization of enterprise value determines the success or failure of the enterprise. The goal should be set in line with the company's own development requirements. In other words, the company should take the maximization of enterprise value and the maximization of return to risk ratio as the goal, and make corresponding adjustments according to the situation. However, in the market downturn, Hanjin Shipping blindly increased its market position by expanding capacity and increasing the number of ships. The company constantly pursued scale and development speed, blindly pursued market share, but failed to consider the consumption capacity of the market, resulting in excess capacity and losses year after year. According to relevant data show that the Hanjin Shipping company, established in 1977, began to emerge in the international market after acquiring Yuyang Shipping company in 1995, Texas-shengli Shipping company in 1997 and other shipping companies.

2.3.3. Event identification

Enterprises should identify internal and external matters that have an impact on the realization of goals, and distinguish between the risks and opportunities. Only through the identification of items, can ensure that the management strategy and objectives are always consistent. In the Hanjin Shipping company, there was no perfect risk prevention and control mechanism, especially financial risk prevention and control mechanism. After 2008, the company's financial situation began to decline. The increase in the amount of long-term borrowing and the large amount of external borrowing led to the continuous decline of bank loan balance after repayment. The company's management became increasingly dependent on bank lending, capital structure was severely distorted, and problems were accumulating. In 2010, the company's bank lending accounted for only 50% of the total liabilities. By 2011, however, this proportion had reached 89% and lasted until the company went bankrupt. The company did not identify the risk of high debt ratio, nor did it make the right risk prevention strategies and improvement measures.

2.3.4. Risk assessment and coping

After effectively identifying the company's objectives and relevant events, the company shall timely carry out risk assessment and propose countermeasures. Risk assessment mainly consider two aspects, that is the possibility of risk and the scope of impact. For Hanjin Shipping company, it is necessary to estimate the possibility of debt repayment and rapid decline of revenue and profit caused by the rupture of capital flow, according to the company's internal operation, financial risk and external market demand. Companies also need to predict outcomes in a variety of situations based on factors such as the total amount of debt owed and the degree to which net income is dependent on market demand. However, according to the company's financial reports and other publicly available information, no corresponding risk assessment strategy has been found.

Risk response is inseparable from event identification and risk assessment, and sometimes exists in event identification. Hanjin Shipping company is in the face of financial crisis and increased chartering cost. Companies should transfer risk by selling ships, selling shares and outsourcing some economic operations. But with billions of dollars in debt, the company has not stopped expanding and cutting its debt in the face of a shrinking market, oversupply and more ships than cargo. It took until 2016 to begin selling off some the docks, old ships and so on, but it was too late.

2.3.5. Control activities and monitoring

Control activities are the process of ensuring the implementation of risk prevention mechanism. It covers all levels and institutions, including a series of activities, such as approval, authorization, verification, adjustment, operating performance evaluation, asset security and separation of duties. Regarding Hanjin Shipping company's operation, we have not found the process of adjustment and business performance evaluation. The company expanded shipbuilding blindly without considering that the financial crisis reduced the market demand; borrowing continued when debt radio were too high. Undoubtedly, these measures put the company at great risk.

Whether the risk response is appropriate requires continuous monitoring of the risk and objective evaluation of the response measures. After the previous stage risk respouse, csome risk residuals may be left, or risks that have not been identified before may be found. For these new risks, it is necessary to evaluate and consider further countermeasures in the monitoring stage.

III. The Strategy of Logistics Project Risk Prevention and Control

At present, opportunities and risks coexist. The risk prevention and control of logistics project management largely determines the success of the project. In the process of the project, the management needs to identify and evaluate the risks reasonably and scientifically, monitor and develop effective risk prevention and response strategies in time, so as to control the risks and minimize the losses to the greatest extent, and ultimately achieve the project objectives.

A. Logistics Project Risks

In a general sense, logistics project refers to the activities of the third-party logistics enterprises, based on providing service, carry out infrastructure construction and software and hardware equipment. Logistics projects often consists of a team toward a common goal. It is often vulnerable to the impact of various factors. Under certain conditions, these factors will become the logistics project risks, mainly including economic risks, technology risks, management risks.

3.1.1. The economic risk

Changes in economic policies, laws, environment and other factors may change the price, scale, demand and development speed of the market instantaneously, and increase the uncertainty of competition subjects to adapt to the market and obtain market competitive advantages. Modern logistics project is a capital-intensive projects, which has the characteristics of high capital, human resources and material cost with large initial investment. Changes such as rising and falling prices of materials and equipment, volatility of RMB exchange rate and disjointed supply chains will lead to a shortage of funds for enterprises and increase risks faced by logistics projects.

3.1.2. The technical risk

The further development of society makes people tend to pursuit the efficiency and quality of service. For logistics project, fast and convenient logistics network and logistics information query services have become the focus of people's attention. In the face of increasingly diverse customer needs and market demands, logistics projects must keep pace with times and update the existing technology, equipment, process. It is inevitable that logistics enterprises will have immature technology, inappropriate equipment and unskilled operation, and the cost and risk will also increase.

3.1.3. To manage risk

Risk management is prevalent because of the unique characteristics of logistics projects. People's ability and quality largely affect their behavior. Factors, such as senior project managers' control and judgment of the current market, their own experience level, management preference, purpose and motivation, may increase the risk of logistics projects. In addition, the structure of the project itself, operational process arrangement and other factors cannot be ignored. This risk is often underappreciated and harder to avoid [5].

According to the classification of logistics project risks (Figure 1), after 2003, Hanjin Shipping has definitely suffered from the risk of change of management personnel in both internal risks, such as management turnover risk and decision-making risk, and external risks, such as economic situation fluctuation risk, competitor strength risk, supply and demand change risk and customer satisfaction risk. The subject of bearing these

risks, which run through the whole life cycle of all logistics projects, is Haijin Shipping.

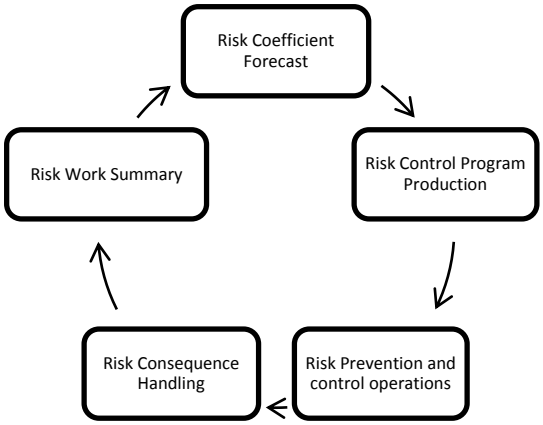

Figure 1. Full Life Cycle of Risk Management.

From the perspective of occurrence probability and loss (refer to Tables 1 and 2), since 2008, due to the frequent changes of the highest controllers, the probability of management risk suffered by Hanjin Logistics is P5 (nearly inevitable); due to the impact of the financial crisis, the probability of environmental risk is P4 (common); due to the intensification of industry competition, the probability of market risk is P4 (common). Three kinds of risks occur at the same time, resulting in consequences: property loss (loss of income and assets), market loss (loss of market value and customer) and social loss (loss of reputation and legal consequences), and then the final loss level reaches L5 level (disaster level), exceeding the acceptable level of the enterprise.

According to different division bases, management risks can be divided as indicated in Table 2.

The risk response measures taken by Hanjin Shipping included: risk reduction (seeking loan support), risk transfer (selling equity) and risk retention (returning assets to cover loopholes). These measures were mostly remedial measures, which meant Hanjin Shipping often started risk management measures after the occurrence of risks. This violated the principle of early risk management. In effect, selling equity and selling assets were not enough to cover losses, and seeking loan support also failed. Therefore, these measures did not play a substantive role in helping enterprises to achieve the project objectives.

In summary, there are both external and internal reasons for the bankruptcy of Hanjin Shipping. According to the analysis of project management theory, the main mistakes of the company in the project risk prevention and control work include: failing to complete the risk coefficient prediction work in time; failing to take appropriate risk response measures; failing to address the risk consequences properly; failing to complete and utilize risk control work summary effectively; failing to establish a full-cycle model of the risk management work life cycle; failing to match and combine the project lifecycle and risk management processes properly. In short, Hanjin Logistics failed to establish a sound project risk control mechanism, so it could not effectively avoid or cope with the occurrence of risks, resulting in disastrous consequences.

B. The Strategy of Risk Prevention and Control

In order to draw lessons from Hanjin Shipping company bankruptcy cases and avoid similar incidents, the following will try to put forward countermeasures for the risk prevention and control of logistics project management from the perspective of the enterprise itself.

3.2.1. Identify logistics project risks in timely

To carry out risk prevention and control of logistics project management, first of all, the risk points faced by the project should be timely and comprehensively identified. Identify the risk in order to carry out risk assessment and develop scientific and reasonable risk prevention and control countermeasures. Risks are usually hidden. When identifying risk points, enterprises should look at the essence through the phenomenon [6]. According to the risk classification table of the logistics project in Table 1 and Table 3 risks should be discovered as early as possible, carefully identified in time, and the severity of risks and possible losses should be determined through analysis and research. It is necessary to gradually narrow the scope, check risks, and comprehensively identify risks, so as to effectively control, transfer and avoid risks. Only in this way can we take timely and effective preventive measures according to the risk response measures in Table 2 and Table 4 so as to reduce the cost of coping with problems and improve project benefits from another perspective.

Table 1. Project risk probability classification.

Level	P1	P2	P3	P4	P5
Probability	Almost no	rarely	Common	Frequently	Almost inevitable

Table 2. Management risk classification.

Division Basis	Classification	Description
Source of risk	Natural risk	Natural changes or geological disasters, such as rain and snow weather, geological disasters.
	Human risk	Social or personal factors, such as policy changes, operational errors and so on.
Risk pattern	Static risk	Due to irregular changes in natural forces or human behavior errors
	Dynamic risk	Due to changes in the market environment or social environment risks
Risk opportunity	Pure risk	Cannot bring any profit, the consequences include two aspects: the loss or did not cause any damages.

	Speculative risk	Both potentially harmful consequences and the existence of possible risks of interest, there are three consequences: lead to profit, resulting in loss and no loss.
Influence level	Acceptable risk	The consequences and the impact of the risk within the acceptable range, such as individual employee resignation, damage to less valued goods.
	Non-Acceptable risk	Serious consequences beyond the enterprises' ability to bear. Such as the disbandment of the core group, the transport system out of control.

3.2.2. Establish management system and decision-making mechanism

Strengthening management's risk prevention and control awareness is the premise of logistics project management. The management should have high professional quality, strengthen their own ability to find and identify risks, and take timely measures to avoid risks, so as to ensure the interests of the enterprise to the maximum extent. At the same time, foster effective risk prevention and control of enterprise culture. Perfect system and structure, on the other hand, can avoid project risk to a great extent. Enterprises shall establish a scientific and efficient management system, and establish risk prevention and control teams. In addition, the enterprise management should also timely attention to market dynamics. Finally, enterprises should establish a scientific decision-making mechanism and formulate the corresponding supervision and review system. Collective consultation mechanism should be implemented in major decision-making to reduce the losses caused by decision-making mistakes.

3.2.3. Strengthening logistics project investment management

Nowadays, with the rapid development of the world economy and the shortening of the life cycle of the industry, good decisions need reasonable follow-up investment management. Enterprises should seriously consider stages of the life cycle, take reasonable operation policies and financial policies, enhance the ability to resist operation risks, and avoid the coexistence of high operating risks and financial risks. Enterprises should rationally judge the development trend of the market and industry, timely adjust of the market layout, and rationally set strategic goals based on their own advantages and core competitiveness, instead of blindly pursuing the speed and scale. It is necessary to optimize the return capacity of project investment, consolidate the risk prevention and control mechanism, so as to enhance the ability to resist operational risks.

Table 3. Logistics project risk classification.

I. Classification	II. Classification	III. Classification	Details
Internal risk	Management risk	Personnel risk	mechanism personnel ability changes in management personnel
		Decision risk	Reasonable degree feasibility execution
	Operational risks	Facility risk	Advance degree operation operation status
		Human risk	Operator ability Operator change Operator safety
Extraneous risks	Surroundings risk	Society risk	Policies and regulations Economic situation Social Personnel behavior changes
		Market risk	temperature bad weather disaster
	Market risk	Competition risk	Competitor Supply and demand Enterprises' adaptability
		Customer risk	Degree of morality Satisfaction degree Affordability

Table 4. Risk responsive measures.

Measures	Details
Risk avoidance	Canceling an undeveloped project, terminates an ongoing project
Risk prevention	Establish regulations and mechanisms to strengthen management and control Carry out thought and experience to improve quality and skill Interpreting policy and normative research forms and contexts Improve the technology and methods to carry out public relations and publicity
Reduced risk	Ask for help to reduce risks
Risk transfer	Project outsourced or sold for security or insurance

Risk acceptance	Self-incurring losses and the responsibility of internal digestion and apportionment
Emergency plan	Start the Risk Control Release Process to restart the risk management process

3.2.4. Stable and positive interaction with the partners

Logistics projects have the characteristics of high cost and high risk. Enterprises can join hands with experienced large-scale logistics and related enterprises. Establish a close partnership to learn the advanced technology and management experience through cooperation. The initial stage of the project is generally simple logistics warehousing or transportation services. Enterprises can try to integrate and form a organic whole, based on the original business to develop new business, find target corporate customers, and have in-depth discussions with customers. Combined with the actual design service process and standards, finally signed a long-term service contract and develop into a stable partner [7].

3.2.5. Strengthening the construction of logistics management information system

Information is an important content and effective form of logistics industry. Only relying on the information management system, can the company enhance the timeliness and effectiveness of information exchange and improve the efficiency of communication with customers. Timely listening to customer feedback can effectively control and avoid errors in service links caused by hardware failures. For the uncertain factors existing in the actual operation of the project, we can timely weigh the advantages and disadvantages, according to the data statistics to reduce the risks caused by inaccurate prediction and decision-making. Enterprise managers should also build a good internal information communication platform and external information communication channels to provide information support for operation and management.

IV. THE CONCLUSION

With the rapid development of social economy, logistics projects have broad market prospects and are full of opportunities and challenges. In order to seize the opportunity in the ups and downs of the market, logistics companies must improve their ability of market control and risk management. In addition, logistics projects involve a wide range of operations and complex operations, and have high requirements for cost, time and security, which are high investment and high-risk projects. Therefore, in the process of project management, logistics enterprises should be more aware of the diversity, concealment and necessity of risk prevention and control. In order to ensure the sustainable development of enterprises, logistics enterprises had better to carry out long-term stable and effective dynamic risk management, develop reasonable and effective risk prevention and control strategies, and improve the stability and efficiency of projects.

REFERENCES

[1] Xuepeng Zhang. Xi'an new jie logistics company operational risk management research. Northwest university, 2008.
[2] Jinghui Ren. Hanjin shipping filed for bankruptcy protection in the revelation of (on). China transportation report, 2006 (006).
[3] Cao Rong, Yale. Hanjin shipping bankruptcy reflection record. Transportation research, 2016, (S2): 82-86.
[4] Zhiheng Luo. Suntech bankruptcy of the enterprise risk management issues and the revelation. Finance science institute, 2013.
[5] Xiao-jiao Zeng and zhong-wei wang. Based on the theory of modern project management, logistics, project risk management research. Journal of logistics engineering and management, 2011, (2): 27-29.
[6] Gao Wei. Logistics management in the project and the countermeasures for the problems of. Journal of logistics engineering and management, 2011, (8): 83-84.
[7] Weiwei Fang. Party logistics project risk comprehensive assessment method study. Journal of logistics engineering and management, 2013, (10): 154-155.