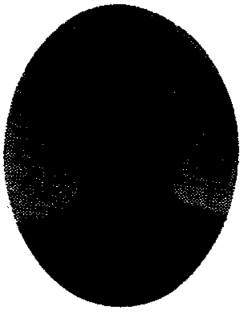
<Case>

HEAD OIL CORPORATION



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1. Introduction

In early 1976, Head Refining Company received a formal proposal from China Oil Corporation, a local partner to the joint venture of lube oil manufacturing in Taiwan. The proposal called for an expansion of lube oil plant facilities from the current capacity of 2,000 B/D to 4,000. Head Refining Company is one of the seven operating companies of the Head Oil Corporation, one of the major oil companies in the U.S. China Oil Corporation is a petroleum refining company, nationally owned by the Government of the Republic of China(in Taiwan). The joint venture was called China-Head Company, 51% owned by Head and 49% by China Oil. Lube oil manufacturing was its sole business.

The expansion plan was initiated by China Oil. If Head Oil decided to participate in the plan, it was entitled to maintain its current equity position according to the original joint venture contract. If Head Oil decided not to participate in the plan, China Oil had a right to bring in a third party to the joint venture. Therefore, if Head Oil decided not to participate, and if China Oil succeeded in finding a willing investor, Head Oil would face two alternatives: either to dilute its equity position, or to completely divest its interest in China-Head Company.

2. Organization and Management

Various suborganizations within Head Oil which were involved in the evaluation of the Lube Oil Plant Expansion (LOPE) Project are described in terms of the nature of their activities and responsibilities.

2.1. Head Oil Corporation

Head Oil Corporation is a vertically integrated oil company with its major businesses in oil and gas exploration, production, refining, and marketing, and chemical products. Among the major oil companies in the U.S., Head had traditionally been the least active in foreign operations with less than 40% of the total assets employed overseas, compared to around 60% of assets employed by the other major companies.

Until recently, Head Oil was organized into

This case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. This case was made possible by the cooperation of a business firm that remained anonymous. Certain names and numbers have been disguised, but the basic issues are unchanged.

six geographical groups. Each group was responsible for the entire operations within the region, from crude oil production, transportation, refining, down to marketing activities. Exhibit 1 illustrates the basic skeleton of the organization before 1975. This geographically oriented organization had been considered effective in maintaining the vertical integration of the oil business as a means to optimize its performance.

The oil crisis in 1973 changed the environment of the oil business and Head Oil in the following two respects. First, with the increase of power by the oil-producing countries and their nationalization of oil production, most oil companies in the U.S. steadily lost their bases for overseas crude oil production. Head Oil was no exception, losing most of its concession rights and properties in many foreign countries. Therefore, Head Oil which used to have surplus crude, was on the brink of being crude shy by the end of 1976. Second, the effort by the legislators toward the divestiture of big, vertically integrated oil companies increased along with the unfavorable publicity on these oil companies in connection with their alleged roles in the oil crisis. Such legislation might prohibit an oil company's involvment in other energy businesses such as coal and uranium, as well as vertical integration of petroleum manufacturing.

In early 1975, Head Oil was restructured into seven separate operating companies with the idea that each operating company could be examined and managed independently of each other. Under this new structure, vertically integrated activities by former geographical companies, with the exception of Canada, were divided functionally into a worldwide exploration company, a worldwide refining company, a worldwide transportation company, a worldwide petrochemical company, a research company, and a real estate company. The new structure was so designed so that each operating company could develop opportunities and strategies based on its own particular needs and strengths. In order to assist in the coordination and control of diverging strategies, the Corporate Planning Group was established at the headquarters. The new organizational structure is illustrated in Exhibit 2.

2.2. Head Refining Company

Among these seven operating companies, Head Refining handled all U.S. and overseas refining activities and inland marketing activit-

Exhibit 1. Organization of Head Oil Corporation (until 1975)

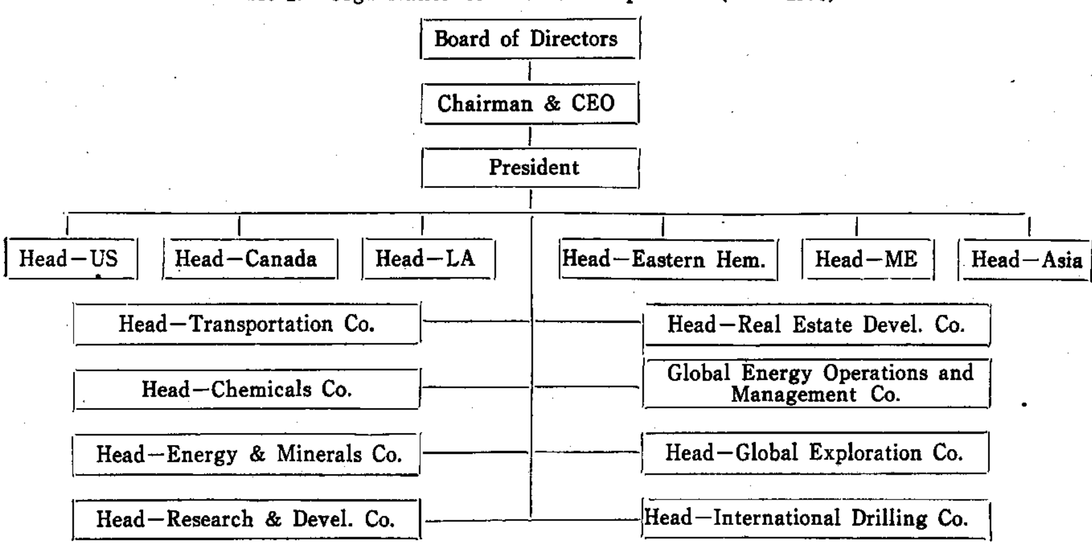
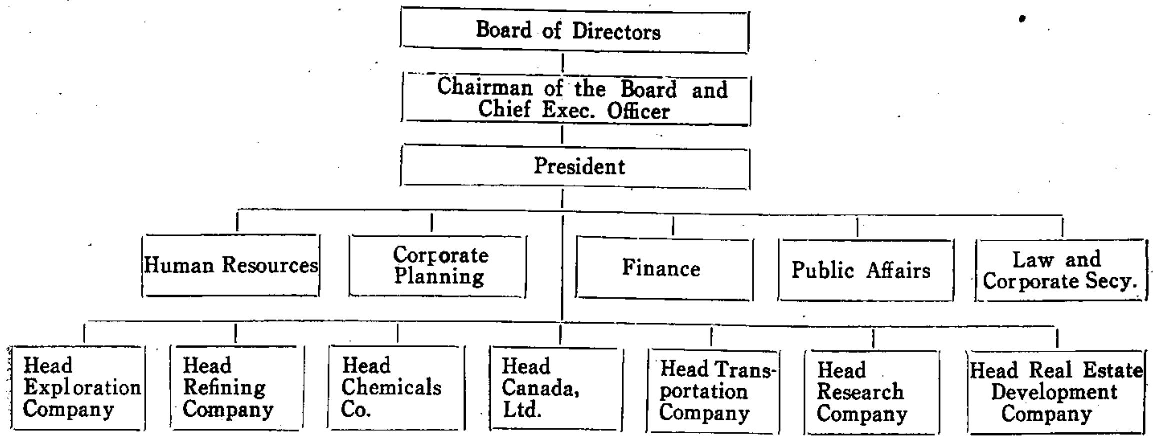


Exhibit 2. Organization of Head Oil Corporation (as of 1976)



ies, except in Canada, from its operating headquarters in Houston, Texas. Head Refining performed as an independent company, except when it needed Head Oil headquarters' approval for strategic decisions such as major investment decisions. Operations of Head Refining were geographically divided into four groups: Head US, Head-International (Europe), Head-Asia, and Latin American Divisions. Each of these geographic groups performed as a coordinator of operations in its region without any line responsibility. In addition to these geographic groups, Strategic Planning and Analysis Department reported to the president of Head Refining with the responsibility of evaluating the strategic directions of the four geographic groups.

2. 3. Head-Asia

Until 1975, Head-Asia had been one of six geographic companies directly reporting to the chief executive officer of Head Oil. After the restructure, it became one of the geographic divisions under Head Refining. Consequently, transportation and trading activities within Asia were taken care of by Head Transportation Company which was one of seven newly created operating companies. Head Oil had no involvement in crude oil production in Asia except a few exploratory drillings around the Yellow Sea of Korea and China.

Head Refining had partial ownership in one lube oil plant and two refineries under Head-Asia's coordination. First, China-Head Company was a joint venture of Head Oil (51%) and China Oil (49%). It was solely a manufacturer of lubricating oil base stocks and packaged oil products. The second and the third were oil refineries in Japan and Korea respectively, also as joint ventures with local partners.

Head-Asia did not have any line responsibility of its own. Instead, it functioned as an intermediary between Head Refining and the three subsidiaries in Taiwan, Japan,and Korea, respectively. While the operating headquarters of Head Refining was located in Houston, Texas, Head-Asia was located in New York City, right next to the headquarters of Head Oil. This geographic distance between the two organizations was due to the restructure of the organization in 1975. Until then, Head-Asia was in New York, while in Houston, was Head-US which became the main body of Head Refining.(In June 1976, Head-Asia was officially dissolved, and a coordinator was appointed in its behalf.)

2. 4. China-Head Company

China-Head was formed in 1963 as a joint venture to produce lube oil between Head Oil and China Oil Corporation. The China-Head plant had a capacity of 2,000 B/D of lube oil, and was the sole manufacturer of lube oil in Taiwan. The feedstocks to the plant were supplied by China Oil Corporation. China-Head did not have the right to make third-party sales of its products within Taiwan. Instead, China Oil Corporation purchased from China-Head as much product as was needed. After China Oil's takeoff, China-Head was then responsible for exporting the remaining products. However, Head Refining, of which China-Head was a subsidiary, was not engaged in any transportation activities overseas. Therefore, China-Head, or Head Refining in this respect, passed these surplus products to Head Transportation Company, which marketed them through its agents in various countries. The only exception to this division of responsibility in Asian lube oil markets was in Korea where Korea-Head Company, Head Oil's joint venture, was responsible for the sales of products as one of Head Refining's subsidiaries.

Since Head Oil owned 51% of the equity interest in China-Head, the expatriate president appointed by Head Oil was in charge of its whole operations. The financial reporting of China-Head was also consolidated into that of Head Oil.

2.5. Head Transportation Company

Head Transportation was responsible for moving crude oil and oil products over the sea. In the past, Head Oil produced more crude oil than it needed for its own refineries and built up a profitable business selling surplus crude to third parties. With much of its traditional concessions nationalized and excess crude no longer available, Head Transportation has broadened its trading activities to include two other areas: the purchase of crude, and the sale of oil products in markets where Head Refining did not have its representation.

In Asia, Head Transportation transported about 400 of B/D of lube oil from Taiwan to Korea where Korea-Head Company took care of marketing the products, and about 100 B/D to various other Asian countries such as Indonesia, Singapore, Philippines, and Thailand and where Head Transportation was engaged in marketing products through local agents.

Head Refining and Head Transportation had independent profit responsibilities respectively and, therefore, transfer pricing between the two organizations had been a critical issue. Until recently, there had been an argument that Head Transportation should be structured as a service center instead of a profit center. This argument was rejected by top management of Head Oil.

2.6. Corporate Planning Group (CPG)

As mentioned previously, CPG was created to coordinate and control the strategic directions set by each operating company. Initially, CPG was divided into three basic departments: Planning Research Department, Planning Operations Department, and Strategy Development Department.

The Planning Research Department functioned as the reservoir of environmental knowledge and expertise in planning methodology. Therefore, this department had little to do with the field managers. The primary interface between the operating companies and the Head Oil headquarters was taken by the Planning Operations Department. The business plans by each operating company had to be filtered through this department before they were submitted to the top management for the final decision. Finally, the Strategy Development Department assisted top management in the evaluation and selection of strategic alternatives for the entire Head Oil

Corporation.

Besides these three basic departments, CPG had created the fourth department called Corporate Development in an effort to focus on the projects of mergers and acquistions which were recently given much of top management's attention.

3. Lube Oil Business

3.1. Supply and Demand

By the end of 1975, worldwide lubricant refining capacity was 561,085 B/D. The breakdown of the volume by area is shown in Exhibit 3. Because of the easy access to feedstocks, major oil companies had dominated the worldwide lube oil supply. As shown in Exhibit 4, seven oil companies had combined totals of 56% of the supply, while 44% was shared by smaller companies. The lube oil market was mature, and the growth rate was about 2% per year in the United States, and 3.5% per year worldwide(Exhibit 5). Even this modest growth rate was threatened by two recent developments in technology. One was the introduction of synthetic lubricant which was supposed to have a higher quality and longevity at the expense of a higher cost of manufacturing which was 3 to 6 times as expensive as that of petroleum lubricant. The other was the development of techniques to recycle and to repurify used lube oils. With the ecological movement, it was believed this new technique to attract more attention in the future.

In Asia, the breakdown of lube oil capacity by producer is in Exhibit 6. Head Oil had the refining capacity of 2,000 B/D in Taiwan. Head Oil's total refinery share in Asia was 2.7%, slightly less than its worldwide share of 3.6%.

In 1969, Head-Asia proposed a plan to build a lube oil plant in Korea, but was postponed indefinitely. Recently, the Korean Government announced that Ssangyong Refining Company which was one of Head Oil's competitors in Korea would build a lube oil plant as a joint venture with National Iranian Oil Company. The product from the plant was expected to come on-stream by 1979 with 3,000 B/D. In addition, the Saudi Arabian Government was planning to construct very large lube oil plant in its country by forming a joint venture with Mobil and another with Texaco in the near future.

Exhibit 3. Worldwide Lube Oil Refining Capacity (December 1975)

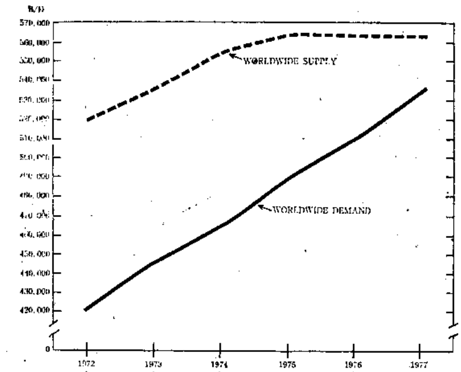
United States	223,155 bpcd	39.8%
Canada	13,110	2.3
South America	64,370	11.5
Europe	158,080	28.2
Africa	11,000	1.9
Mid East	16,440	2.9
Asia	74,930	13.4
Total	561,085	100.0

Exhibit 4. Majors' Share of Lube Oil Refining Capacity (December 1975)

Company A	90,466 bpcd	16.1%
Company B	75,630	13.5
Company C	36,955	6.6
Company D	34,200	6.1
Company E	29,100	5.2
Company F	24,675	4.4
Head Oil	20,010	3.6
Other	249,594	44.5
Total	561,085	100.0

Head Oil divided the Asian area into two distinct lube oil markets. Geographically, the area could be split into the East Asia area (Japan, Korea, and Taiwan) and the South Asia area (Indonesia, Philippines, Singapore, Thailand, etc.). In the East Asia area, Head Oil had a definite pattern of supply and demand for lube oil products. Head Oil was

Exhibit 5. Worldwide Lube Oil Supply and Demand Forecast



	1972	1973	1974	1975	1976	1977
WORLDWIDE SUPPLY	519,595	536,895	555,225	564,125	564,125	564,625
WORLDWIDE DEMAND	420,505	443,865	466,145	489,085	510,885	535,985
SURPLUS/(SHORTAGE)	99,090	93,030	89,080	75,040	53,240	28,640

Exhibit 6. Majors' Share of Lube Oil Refining Capacity in Asia (December 1975)

Company B	10,130 bpcd	13.5%
Company A	4,460	6.0
Company C	2,930	2.9
Head Oil	2,000	2.7
Company F	1,700	2.3
Company E	605	.9
Other	53,060	70.7
Total	74,930	100.0

committed to move export lube oil from China-Head in Taiwan, committed to supply base lube oil to Korea-Head in Korea, and had the licensing agreement of compounding and blending with a local partner through Japan-Head a joint venture in Japan (no material flow). It was in the South Asia area, therefore, that Head Oil had a new potential for lube oil sales. There were no Head Oil subsidiaries in any of these South Asian countries. In the past, one of Head's principal sales activities in this area had been the sale of lube oil manufactured from China-Head. From 1963 through 1975, Head Oil's annual availability of China-Head production averaged 930 B/D (in 1975, it was 800 B/D or 2,000 minus 1200 used by China Oil). During this period, however, Head Oil's annual sales of lube oil products from China-Head averaged 66 B/D (in 1975, 100 B/D). This poor performance was due to the fact that Head Oil did not possess a full line marketing network in South Asia, and correspondingly, never had the manpower commitment to develop a marketing network for the sale of lube oil product. At the time of the restructure of Head Oil into seven operating companies, it was agreed between Head Refining and Head Transportation that Head Refining was to be in charge of the markets where Head Oil representation existed, and that Head Transportation was in charge of the markets where Head Oil did not have any representation. Since there was no representation in any of the South Asian countries, Head Transportation was solely responsible for the market development of lube oil products. Head Transportation had been using local sales agents in South Asian countries. Therefore, the sales performance of Head Transportation depended on the ability of these local agents in respective countries. Head Transportation was considering an aggressive marketing program in South Asia. Four countries were considered as prime candidates for such a program. These were, Indonesia, the Philippines, Singapore, and Thailand. These countries had sizable markets, but did not have lube oil manufacturing facilities, with an exception of Indonesia where Petromina was expected to complete a plant by 1976. Therefore, even a small market share in one of these countries would boost total sales of lube oil in the South Asian area substantially. With an aggressive marketing program, Head Transportation expected its market to grow by 29% per year, reaching 600 B/D in 1983. The market information in these countries is shown Exhibit 7.

Exhibit 7. Lube Oil Demand and Potential Sales by Head Oil in Four Selected Countries in South Asia

	1976	1977	1978	1979
DEMAND				
Indonesia	1600	1700	1800	1900
Philippines	3000	3150	3400	3550
Singapore	1450	1550	1700	1850
Thailand	3800	4000	4200	4400
Total	9850	10400	11100	11700
SUPPLY BY Head Oil	100	130	170	220
(Market Share)	1%	1.3%	1.5%	1.9%

3.2. Lube Oil Market in Taiwan

The total demand for lube oil in Taiwan was about 2,000 B/D in 1975. It was expected to grow at 8% per year, and to reach 3,200 B/D by 1981. As mentioned before, China-Head was the sole manufacturer of lube oil in Taiwan, the total capacity of 2,000 B/D. China-Head, however, did not have the right to sell lube oil products in Taiwan. Instead, it could only sell them to China Oil Corprporation which marketed those products. In order to protect the market for China Oil Corporation, the Taiwan Government set a duty of 36% of CIF price for imported lube oil. Nevertheless, partly because of the diversity of products which could not be met by China-Head production, and partly because of consumer's preference for brand name lube oils, 800 B/D, or 40% of the total demand in Taiwan was imported. Therefore, China Oil had only 60% of the market share, and the rest was equally divided between Japanese suppliers and other brand name companies such as Exon, Shell, Mobil, and Caltex. Historically, China Oil had been improving its lube oil market share for the past ten years at an average annual rate of 4.5% from its inception in 1965, when it supplied 38% of the total demand in Taiwan (Exhibit 8).

Head Oil managers were considering two alternative methods of demand forecasting for lube oil. First, if China Oil maintained its market share of 60%, its 1981 sales could be 1,900 B/D. On the other hand, if it continued to grow its market share at the historic rate of 4.5%, it would sell as much as 2,500 B/D, or 77% of the total demands in 1981. Because of the existing regulations by the Taiwan Government prohibiting imported lube oil, China Oil was believed to have a mechanism to increase its market share, but probably somewhat less than 4.5% per year as it headed toward 100%. If the Chinese Government imposed more stringent regulations against the imported lube oil, more optimistic forecasting was certainly possible.

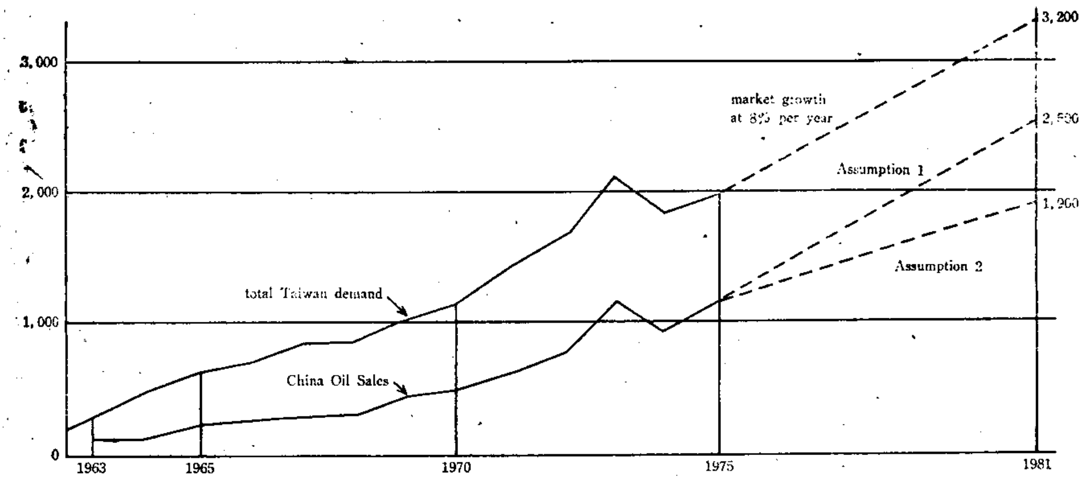
The transfer price between China-Head and China Oil had been adjusted so that China-Head could make a 16% return on investment. Currently, it was fixed at $30.66 per barrel of lube oil. The Japanese manufacturers had been known to undercut the price of lube oil products due to their excess capacities. This dumping practice by Japanese manufacturers had been known to undercut the price of lube oil products due to their excess capacities. This dumping practice by Japanese manufacturers had recently caught the attention of the Government of Taiwan, which issued a warning against such activities in the future.

Head Oil had invested $6 million in China-Head. Head Oil did not repatriate any profit until three years ago, when China-Head began to pay $1 million of dividends to Head Oil each year.

4. Lube Oil Plant Expansion (LOPE) Project

China-Head presented its proposal for the

Exhibit 8. Total Lube Oil Demand in Taiwan vs. China Oil's Market Share



Assumption 1: China Oil grows its market share at 1965~1975 level (4.5% per year).
Assumption 2: China Oil maintains its market share at 1975 level (60% of the total market).

LOPE Project to Head Refining in May 1976. China-Head chose "the expansion" as its preferred option. The excerpt of the proposal, Head Refining's analysis, and discussions with the managers are described below.

4.1. Major Strategic Objective

As in most other international operations, Head Oil used "maximization of present value of cash generation from the business" as the single most important objective of the LOPE Project. In addition to this, however, such criteria as payback period and return on investment were frequently used by the managers.

4.2. Strategy Options(Alternatives)

4.2.1. Perspectives of China-Head

Managers of China-Head believed that China Oil could either finance the expansion itself or find another investor for it. Based on the assumption that China-Head facilities would eventually expand, expatriate managers at China-Head presented two options: either to participate or not to participate in the expansion plan. If Head Oil decided to participate, the ratio of equity interest between Head Oil and China Oil would be maintained at 51% and 49% respectively, and Head Oil would be responsible for 51% of the total investment for expansion. On the other hand, if Head Oil decided no to participate, and if China Oil could finance the expansion in one way or another, Head Oil would face one of the two events.The first possibility was that the equity holding by Head Oil would be reduced from 51% to less than 15%. Second, Head Oil might face strong antagonism from both Taiwan Government and the public in general and, therefore, would have to withdraw its business from Taiwan completely.

Particularly, recent international relations around Asia were worth noting with respect to LOPE Project. Recently, U.S. military involvement in Vietnam and its sudden withdrawal brought disaster to several Indochina countries. As a result, the rest of the world and especially Taiwan, Korea, and the Philippines began to be aware of the possibility that U.S. military force would eventually leave their regions and that their bilateral defense treaties with the

United States would not be observed any more. Believing that U.S. major corporations had close communications with the U.S. Government or or CIA in one way or another, governments of these countries were very sensitive to decisions and moves of those U.S. corporations which had business interests within their countries. If Head Oil decided not to participate in the expansion plan, it would very likely face very fierce criticism and antagonism from politicians and the people of Taiwan. Therefore, it was conceivable that Head Oil would have to give up its partnership in China-Head, whether or not the government forced it to do so.

Then, the next question was the likely amount Head Oil could receive from the sale of its equity in the joint venture. The answer was not only unknown but also very difficult for Head Oil managers to probe, until Head Oil decided in either direction. In any event, they were quite sure that Head Oil would not receive more than 6 million dollars which was about 51% of the current book value of China-Head assets, estimated at 12 million dollars.

4. 2. 2. Perspectives of Head Refining

According to Mr. Tom Thompson, Planning Director of Head Refining, China-Head managers had limited the alternatives with the above two, because China-Head was only responsible for manufacuring of lube oil in Taiwan. In addition to these alternatives suggested by China-Head, he was considering other alternatives, namely a plant construction in either Korea or Japan. He summarized these two alternatives in the following way.

i). Construction of a lube oil plant in Korea: This alternative deserves a careful analysis because Head Oil has been successful in all of its business in Korea. In addition, management skills and the favorable governmental relations are all readily available. More important, Head Oil does not have any bottleneck in securing feedstocks for lube oil manufacturing, contrary to its situation in Taiwan where China-Head is dependent on China Oil for the supply of feedstocks. If built, the Korean plant can utilize naphthenic crudes, from which a higher quality product can be produced. In the past, a proposal has been initiated by Korea-Head to build a lube oil plant in Korea. The problem in that instance was that the Korean Government was too anxious to build a complete facility including a hydrogen plant and other peripheral facilities which were estimated to cost in the vicinity of 52 million dollars. Since Head Oil already has invested more than 100 million dollars in Korea in the refinery and the petrochemical and fertilizer plants, top management killed the project. Until now, all of the lube oil products used in Korea are imported, and the Korean Government has been anxious to find investors to build a facility. In 1975, one of the competitors in Korea proposed a joint venture with the Iranian Government to build a plant that will refine 3,000 B/D of lube oil by 1979. Therefore, there is a question whether Head Oil can still propose another project to build a plant in Korea, and win the approval of the Korean Government.

ii). Construction of a lube oil plant in Japan: Head Oil has a crude refinery in Okinawa. Therefore it can build a lube oil plant without any difficulty in sourcing feedstocks. However, there is a surplus of capacity in Japan, and Japanese manufacturers are vigorously undercutting the price of lube oil in foreign markets. Because of these pressures, the Japanese alternative is much less attractive than the first (plant construction in Korea).

4. 2. 3. Perspectives of Head Transportation

Mr. Ron Greenberg. General Manager of Lube Oil Business, Head Transportation introduced an alternative in addition to those suggested by China-Head and Head Refining. His alternative was to export lube oil from the existing facilities in the United States to Asia. He acknowledged that he was interested in this alternative because he, representing Head Transportation in the lube oil business, was not particularly concerned about where the products came from, as long as long as he could obtain sufficient supply of products to sell. The to following is the description of the alternative export from U.S. to Asia.

iii). To export from U.S.: Head Oil is one of the five largest manufacturer of lube oil in the United States and one of the ten largest in the world market. The sales prospect of lube oil market in the U.S. is grim, because of general inclination of customers toward big chain and discount stores. Also, more effective engines produced by auto manufacturers and stagnating auto markets make prospects even more unfavorable. Therefore, the managers consider that Head Refining can easily export at least 1000 B/D of lube oil to Asia without sacrificing the U.S. market. The serious problem with this alternative is transportation. Due to the diversity of lube oil products, only small-sized tankers can be used to ship the products across the ocean. Therefore, the cost of transportation is prohibitively high for transpacific shipment of lube oil. Under the current market price, it would cost at least 12.6 dollars per barrel to ship from the U.S. to any place in Asia.

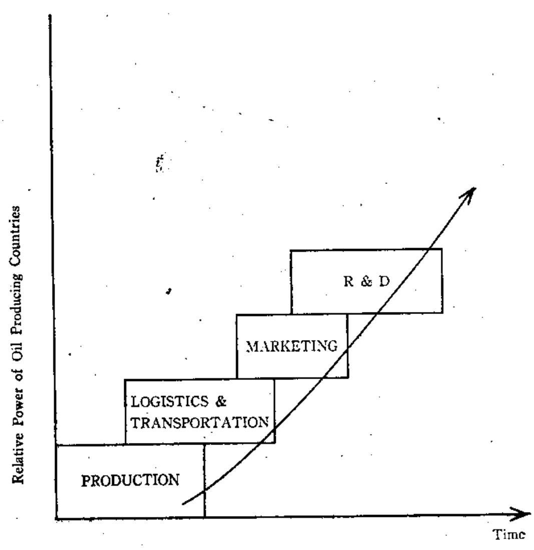
4.2.4. Perspectives of the Corporate Planning Group

Mr. Bill Berry, Manager of Strategy Development, Corporate Planning Group, suggested yet another alternative which he had been involved in: to participate in Ssangyong joint venture in Korea as a third minor partner.

"I don't have much hope for getting an approval from the Korean Government even if we decided to build a new lube oil plant in Korea as suggested by Head Refining managers. But, there is a possibility for us to participate in the Ssangyong joint venture project in Korea as a minority partner in return for the feedstock supply to the plant, or more likely, with the commitment to purchase certain amounts of lube products from the plant. The local partner in the joint venture is a new entrant to the oil business, and does not have a marketing outlet as we have. I talked with the managers several months ago,and they were quite interested in the proposal that we buy as much as 1,500 B/D out of their planned capacity of 3,000, as far as 15% return on investment is guaranteed.

"I have been thinking of strategic direction of major oil companies like ours in the future. Here is my idea(see Exhibit 9). I believe that we have passed the first stage of production, soon to pass the seccond stage of transportation and logistics. Probably the only business we can safely deal with right now without facing strong competition from oil producing countries might be marketing in the short run, and eventually R&D. What I am suggesting seems to fit the short run business strategy perfectly. Certainly,

Exhibit 9. Strategic direction of multinational oil companies as suggested by a manager of Head Oil



my short run means more than a decade, I guess."

He suggested several likely arrangements between Head Oil and the two partners in the joint venture, in case the trilateral agreement was made. These were basically a combination of varying degrees of equity participation and offtake commitment. First, a combination of 20% equity interest and 50% offtake commitment had been considered. Under this arrangement, Head Oil would be responsible for 20% of all costs, outputs, and profits from the operations. In addition, Head Oil would purchase 30% of the total outputs on a cost plus basis. Alternatively,a token participation in the equity interest and 50% offtake commitment was proposed, In this case, 50% of all output from the plant would be purchased by Head Oil on a predetermined basis. Head Oil considered 15% return on investment as an adequate criterion to determine the transfer price in such circumstances. Since both partners in the Ssangyong plant had only limited access to the lube oil market, this alternative was considered to be not only feasible but also desirable from the point of view of international cooperation.

4.3. Major Risks

Head-Asia listed the following four items along with the qualitative evaluations of the probability that they would occur.

Risk	Probability
1. Lack of Taiwan market growth	low
2. Lack of export market growth (excluding Korea)	medium
3. Constructionof lube plant in Korea	medium
4. People's Republic of China takeover	low

However, the experts in the field indicated that some of their probability assignments were not plausible. For example, the construction of lube plants in Korea was considered a fact rather than a speculation. They also suggested that the present lube oil market share of Head Oil in Korea might be lost in 1981 when the new plant reaches a level of full capacity operation.

Being highly skeptical about the above list of risks, managers at Corporate Planning Group considered the following specific risks:

i). Political risk: Mr. James Earl Carter was just nominated as the Presidential candidate by the Democratic Party. It was widely speculated among the experts in international relations that, if elected, Mr. Carter would recognize the people's Republic of China. Since Mr. Carter had been a Presidential favorite for the 1976 November election, the people in Taiwan began to fear the eventual withdrawal of U.S.military forces stationed in Taiwan, and the forced annexation of Taiwan by the Mainland. Therefore, it had been a common practice among leading financial institutions in the U.S. not to loan a substantial amount of money on a more than 7 year term basis even with a risk-premium-added interest, to any investors in Taiwan. Even if the annexation did not occur, political uncertainty in Taiwan would undercut many investment potentials.

ii). Expropriation risk: Because of such pressure, managers of the companies which had substantial investment in Taiwan became extremely concerned about the attitudes of the Taiwan Government. However, it was generally accepted that the risk of nationalization by the Taiwan Government would be minimal because of the dependence of the Taiwan Government on the U.S. military blanket.

iii). Competition: Initially, China-Head was designed to meet the demand of Taiwan and to become the sole manufacturer of lube oil in Taiwan. Nevertheless, approximately 40% of the current market demand in Taiwan was shared by foreign manufacturers, in spite of tariffs and taxes imposed by the government. Since China-Head could not produce all lines of lubricants, there would always be a market niche for foreign producers. Whether the current market share would be maintained at 60%, or it would grow as it had been in the past ten years from 38% to 60% was yet to be seen.

iv). Worldwide surplus in production capacity: Contrary to other petroleum products, lube oil is a worldwide commodity in nature. It is due to the fact that there is a certain economy of scale in lube oil refining which precludes from building one small lube oil plant in each market country, and that the price of lube oil is relatively high so that a high markup can easily absorb transportation cost to a certain extent. Worldwide market price for lube oil had been fairy steady for the past years, and was expected to remain stable. The market in the United States, however, was experiencing a very slow growth rate of 2% annually,and it was expected that the surplus in U.S. capacity would have to be absorbed somewhere else. Moreover, Saudi Arabia was planning to construct a large-scale lube oil plant as part of her effort for the development of downstream petrochemical business. One of Head Oil's competitors was also planning to construct a lube oil plant in Korea. Under the condition of overcapacity within and around Asia, the competition was expected to become even more fierce.

v). Technology: Mobil introduced synthetic lubricant for automotive use recently. It was claimed to have a distinct advantage over petroleum lube oil with respect to durability and adaptability to cold weather, but it was approximately three to six times as expensive as petroleum lube oil under the current technology. If one of the following two events would occur, the petroleum lube oil business might be in serious trouble: the first event was that Mobil persuade major automotive or equipment manufacturers to specify and use synthetic lubricant for their products; the second was that the learning cycle of synthetic lubricant production would be shortened so that it could effectively compete against petroleum lube oil even in the area of pricing.