

CHAPTER 6

SWOT ANALYSIS

SWOT is an acronym for an industry's Strengths and Weaknesses and its environmental Opportunities and Threats. It is a study of organisational resources and capabilities that assesses the industry's strengths and weaknesses and scans the external environment to identify both opportunities and threats. This analysis provides management with a critical view of the industry's internal and external environments. It is useful in evaluating the industry's fulfilment of its basic mission.

6.1 Strengths of Thai Jewelry Industry

❖ *Thailand is the production source of cutting gemstones*

Thailand is one of the biggest production sources of cutting gemstones. From the data of the Ministry of Industry, there are approximately 250 factories, with 1,000,000 labours in cutting coloured stone business plus 3,000 labours in cutting diamond business. Because of the cutting coloured stone industry is the original of Thai labour intensive for long time ago. There are a lot of high quality cut diamonds (loose diamonds) and cut gemstones (loose gemstones) in Thailand. Thailand is No.1 exporter gemstone and No.6 in exporting diamond of the world. Thus, it is one of the important strengths that support Thai jewelry industry in raw materials part.

Table 6.1: Number of factory and worker in gem and jewelry industry.

Number of factory	approximate	640 factories
□ Cutting gemstone (coloured stone and diamond)	approximate	250 factories
□ Producing jewelry	approximate	390 factories
Number of hiring labour	approximate	1,200,000 persons
□ Cutting coloured stone	approximate	1,000,000 persons
□ Cutting diamond	approximate	3,000 persons
□ Producing jewelry	approximate	200,000 persons

Source: Ministry of Industry

❖ *Thailand also has a huge amount of human resources in jewelry industry*

Not only, Thailand has a lot of labours in gemstone industry, but also there are a huge amount of workers in jewelry industry, too. From the Table 6.1 above, there are approximate 200,000 workers in jewelry industry according to data of the Ministry of Industry , however, at this time in year 2000, the volume of labours in jewelry industry should increase more. In conclusion, Thailand has a lot of human resource in this industry.

❖ *Thailand has good management system in searching raw material*

Because of the exhaustion of gemstone in Thailand, both Thai government and private sectors try hardly to outsource this important raw material in consistency and long term. They try to import gemstone from neighbours such as Myanmar, Cambodia and Vietnam; and any countries, which have rich minerals. One of the successful organisations is Thai Gem & Jewelry Traders Association (TGJTA), which has formed the outsourcing committee for ten years. Along that time, this committee could help to find and negotiate for gemstone a lot. It has the working outlines as follows:

1. To cooperate with the businessmen in this field to advise and exchange their thinking and help each other to solve the problems that occur in this industry.
2. To contact and cooperate with the related government sectors to inform the problems and determine the policies in giving gems importers more convenience and also save the international trade problems that may occur.
3. To inform and announce the essential information, and invite both government and private sectors to travel to the supply countries for starting the good relationship for the benefits of Thai businessmen.

For example, the outsourcing committee established the Thai-Madagascar Gems Club on October 25, 1999. This club helps Thai importers to solve the problems about import rough gemstone from Madagascar. At this time Madagascar is known as the biggest source of gemstone in the world. Not only there is a lot of gemstone in Madagascar, but also their gemstone is in a very good quality. With the long experience in this business and high skill of Thai labour, if Thailand has a very good source like Madagascar, it will support the development of this industry very well. Moreover, there are other clubs that

established for the cooperation with Thailand and supply country such as the Gueda Sapphire Trader Club (Thailand), which is the relation club with Sri Lanka.

Additionally, TGJTA's outsourcing committee also has contacted with other countries and arranged the meeting between Thai importers and the other countries such as the trader committee from the Philippines, Vietnam, South Africa, and China on May 14, 1999; May 28, 1999; November 9, 1999; and March 2, 2000 respectively.

❖ ***Thailand has strong vertical integration from gems industry through jewelry industry***

Jewelry and gems businesses are close related. They have a quite-long value chain, starting from the natural resources to the end-consumers. Firstly, the gems dug from mine are sold by passing through agents. Gemstone weight more than 0.5 Carat is sold each; in contrast, the smaller ones are sold in large amount. For the gemstones that are not beautiful enough, they are passed through heat-treating technique. The cooked (or heated) gemstones and the left will be sold to small agents who will cut and polish them later. Lastly, all the agents will sell gemstones to the jewelry manufacturer, or other retailers in country or export them to foreign countries.

❖ ***Thailand is also the centre of loose (already cut) gemstone***

Gemstones that passed all cutting processes are sent to jewelry industry to sell in the form of loose stones. Nowadays, loose stone trading is expanding drastically to support the increasing need of both Thais and foreigners. There are several big gemstone markets in Thailand. So, the plentiful supply of jewelry industry in Thailand is the advantage of this business. The important gemstone markets in Thailand are as follows:

1. The gemstone market at Chandaburi Province
2. The gemstone market at Mae Sod, Tak Province
3. The Hua Tung gemstone market, Trad Province
4. The gemstone market, Kanchanaburi Province

❖ ***Thailand has unique technique to added more value to gemstone***

We are the only countries that have the technique to “COOK” gems. With this technique, those damaged stones that need repair or poorly cut stones that need re-cutting can be added more value and have a higher quality and also can be sold in a higher price.

Table 6.2: Colour changed by COOK technique.

Type of gemstone	Original colour	After pass COOK technique
Ruby	violish Red, brownish Red	rich Red, rich Pink
Blue sapphire	Blue	darker Blue, blighter Blue
Zircon	Light Blown	Colourless, golden Yellow, Blue

Source: Department of Export Promotion, Ministry of Commerce

❖ ***Thai labours have high skill and elaboration, which acceptable worldwide***

Thai labour is acceptable worldwide in the quality of cutting stones both coloured stone, which is the original industry and diamond, which came later. High skill gem-cutters in Thailand can determine the characteristics of gemstone by long experience. They know the crystal type, symmetry, optic character, dispersion, transparent, and defects in the stone. So, they can cut in the right cutting style, right shape, and the most important, right facet for the appropriate phenomena, best dispersion, and best luster of each stone. With this skill, the after-cut loose stone will have its optimum value. And the new technology machine cannot instead of this skill, which, amass from long experience.

Moreover, Thai cutting industry has invented several cutting style that popular in the international market. For example, “Mixed Cut” cutting style in ruby and sapphires, and “Bangkok Cut” or “Princess Cut” cutting style in diamond cutting. Although, cutting diamond industry came later but the quality of Thai cutting in diamond is acceptable in the global market.

Not only the skillful in cutting gemstone is accepted worldwide, but also the high skill and elaboration in jewelry producing of Thai labours are recognized in the international market, too.

❖ ***Thai jewelry workers have the development in their “Labour Productivity”***

According to the research in labour productivity by Supinda Wasinrat (1996), the outcome shows that the labour productivity (LP) of Thai jewelry industry has rising trend. This rising trend represents the better production efficiency of industry. Especially, the

LP of jewelry industry has grown a lot from about 58,300 Carat/ person/ year in 1988 to 208,100 and 186,000 Carat/ person/ year in 1993 and 1994. The steps of producing jewelry in parts of making setting and fixing gemstone into setting have to used a lot of labours and also the skill and elaborate. In conclusion, the labour productivity of Thai jewelry industry is one of the most effective production factors and it is the essential strength of Thai jewelry industry to compete with other competitor in the world.

Table 6.3: Labour productivity in gem and jewelry industry.

Unit: 10,000 Carat/ Person/ Year

Type	1988	1989	1990	1991	1992	1993	1994
□ Cutting coloured stone	9.30	5.35	5.38	5.38	4.24	8.86	5.47
□ Cutting diamond	0.004	0.004	0.006	0.005	0.024	0.078	0.014
□ Producing jewelry	5.83	14.12	2.83	2.01	5.87	20.81	18.63

Source: Department of Export Promotion, Ministry of Commerce

❖ *Thai entrepreneurs have knowledge, capability and long experience*

Because of the jewelry industry and its related business such as gemstone trading business and gemstone cutting business have been operated in Thailand for a long time. Most of entrepreneurs have several knowledge and capability to running these businesses; especially they have a long time experience in these fields. For example, the survey of Sasin Research Center shows that most of Thai jewelry companies have operated more than 10 years both in small size and medium size company.

Table 6.4: Experience of Thai jewellers.

Operated time	Small size company	Medium and large size company
Less than 5 years	28.25%	10.14%
5-10 years	28.70%	36.49%
More than 10 years	43.05%	53.38%

Source: The survey of Sasin Research Center, Chulalongkorn University

Note: Department of Industrial Promotion defines the sizes of the company as follows:

- Small size company is the company that has asset, including land, less than 50 million baht.
- Medium size company is the company that has asset, including land, between 50-200 million baht.
- Large size company is the company that has asset, including land, more than 200 million baht.

❖ ***Labour cost is low compares the other countries especially those in the developed countries***

The minimum labour wages in Thailand are divided into three levels depend on the living expense in each province. Since January 1, 1998 until this time, the minimum wages rate is 169 baht per day in the Bangkok area and neighbour provinces as, Nakhomprathom, Nonthaburee, Prathumtanee, Samudprakarn, Samudsakhon and also developed city like Phuket. The second wages rate for big provinces is 140 baht per day. There are Chonburee, Chiangmai, Nakhonradchasisa, Phangvha, Ranong, and Saraburee. Finally, the others provinces are used minimum labour wages as 130 baht per day. (www.molsw.go.th, November 2000)

The survey of Institute of Human Resource, Thammasat University (Jira Hongladarom et al.,1995) found that the average salary of worker in jewelry industry is 7,670 baht per month plus average over time about 1,660 baht per month. However, the salary depends on the level of the labour's skill.

From the data of two resources, the conclusion is Thai labour is still cheap compare with other developed countries, which produce same quality product as Thailand.

❖ ***Thai's products are developed in type and design frequently***

Nowadays, There are more competitions in jewelry industry in the international market. Not only the skill of labour that emphasise on the meticulous, and the technology that have to change to meet the customer's needs, but also design of product is one of the points in the customers' determining. Department of Export Promotion and Thai Gem and Jewelry Traders Association have arranged "Jewel Award" annually. Jewel award contest has the objectives to find the new designs that have modern type, which meet the market's requirements, and to promote Thai designers to be acceptable in the international. In year 2000, jewel award divided the contest into five groups as follows:

1. Gold Jewelry
2. Silver Jewelry
3. Diamond Jewelry
4. Invisible with Precious stone & Diamond
5. Gold Jewelry with Precious stone & Diamond

❖ ***Good image of gemstone from Thailand and Thai cutting style***

The good image of Thai gemstone is accepted globally, especially in “Siam Ruby or Tubtim Siam”. In the survey of Sasin Research Center (Narasri Waiwanijkul, Tanawan Sangsuwan, and Nattachet Phunchareon, 1999) found that 64 percent of interviewed entrepreneurs think that ruby can be supported to be the gemstone of Thai nation. Moreover, 81 percent think that ruby, which set in the jewelry, is the advantage point of Thai jewelry.

Thai cutting style with high skilled is also the advantage point of Thai exporting jewelry. Many foreign jewelry consumers appreciate in the elaborate and beauty of Thai cut gemstone a lot. The good image of Thai cut gemstone is the important strength in jewelry industry and it will help in marketing advertisement a lot.

❖ ***Thailand has the quality assurance institutes***

Because jewelry is the high value products and it is the rareness product, too. The reality of the product is very important. Thailand has two leading gem testing laboratories, which have the latest technology and sophisticated equipments for testing gemstone. There are AIGS¹ gem research and testing institute, and GIT² gem testing laboratory.

GIT gem testing laboratory is a part of Gem and Jewelry Institute of Thailand (GIT), which is the joint venture between governmental and private sectors. It opened to the public on the same day as GIT, which is on October 1st, 1999. This laboratory has the main objectives to provide gem identification services to industry and individuals and to provide reports and guarantees of the nature, enhancement and origins of precious stones. The laboratory provide the identification service as: Natural versus Synthetic, Treated and Enhanced Stones, Origin of Ruby, Sapphire and Emerald, Natural versus Cultured Pearls and Artificial Colouration, etc. On the other hand, AIGS gem research and testing institute has opened for 20 years. It provides testing functions as same as GIT gem testing laboratory.

¹ AIGS stands for Asian Institute of Gemmological Science.

² GIT stands for Gem and Jewelry Institute of Thailand

These two world-class laboratories could provide the scientifically accurate results within a short time frame for Thai jewelry producers and also the customers to guarantee the products for the highest satisfaction and trustfulness of customers.

❖ *Thailand has customers around the world*

Thailand has the good relationship with almost countries of the world, not only the political, but also the economic and trading. Now, Thailand has joined most of world trade organisations such as WTO, APEC, AFTA, etc. Thus, Thailand has a lot of sale transactions and connections to promote Thai jewelry into the new market.

6.2 Weaknesses of Thai Jewelry Industry

❖ *Lack of raw material in Thailand*

Although our country is known as one of the most important sources of colour gemstone, but a rapid and continuous expansion of jewelry industry in the past few years forces us to import most of the raw materials from abroad. This is because the domestic material, which is gemstone, in our country is not enough and it cannot serve the growing demand of the market. Moreover, we have to import rough diamonds as well as other precious metals as: gold, silver, and platinum since we do not have any these minerals.

The essential raw materials that used in production of jewelry industry could be divided into two groups:

1) *Gems or Precious Stone*

Nowadays, the important gems in jewelry industry are diamond, ruby, blue sapphire, and emerald. Diamond is used in jewelry production about 65-70 percent, where are ruby, blue sapphire, and emerald are used about 25 percent.

□ Diamond

Thailand doesn't have any diamond mineral. Total diamond has to import from foreign countries. Thailand imports diamond from India, Belgium, Israel, Ghana, and Congo.

□ Coloured stone

In the part, Thailand is the top five important sources of coloured stones of the world. The important coloured stone sources of Thailand are in Trad, Chantaburee, and Kanjanaburee province. These three provinces accounted for about 80-90 percent of mining area. The rest are in Prae, Srisaked, and Sukhothai province. Most of coloured stones that found in Thailand are ruby and blue sapphire. Moreover, the most famous stone of Thailand is ruby and called “Tubtim Siam”. Other stones that are found in Thailand are yellow sapphire, zircon, garnet, and black sapphire, etc.

However, with the very high expanding of gems and jewelry industry in the past 10 years, nowadays there are a few good quality stones in Thailand. So, Thailand has to import rough stones from foreign countries such as Burma, Sri Lanka, and Africa countries. But, there are more difficult to import because they try to make the value-added within their countries by trying to produce gems and jewelry by themselves. Thus, in last couple years, Thailand has to invest in mining by himself such as in Madagascar and Zambia.

□ Pearl

Thailand has some pearl farms in seaside provinces such as in Phuket. However, Thai's supply cannot afford the demand in jewelry industry. So, mostly pearl in jewelry industry have to be imported from abroad.

2) Precious Metal

The famous metals in jewelry setting are gold, silver, and platinum.

□ Gold

Pure gold is the soft metal, when it is made to jewelry; it is added some other metal to make it harder. The others metals that usually adulterate in pure gold are silver, copper, iron, and nickel, etc.

Thailand has some gold mines in Prachinburee and Naratiwad provinces, including other places but not much. So, gold bars are imported from Switzerland, UK, Russia, Australia Singapore, and USA. However, gold is the valuable product that the importer must have the permission from the government because of the financial stable of the country.

□ Silver

In Thailand, silver is found in Kanchanaburee province; however, this volume doesn't enough for the domestic demand. Silver is imported from Australia, Hong Kong, South Korea, UK and USA.

□ Platinum

Platinum is one of the many resources that cannot found in Thailand. We have imported platinum from Japan, Germany, Singapore, and Italy.

Not only gold, silver and platinum are used in jewelry industry, but also other metals are the secondary raw materials such as brass, copper, iron, and lead are used in jewelry industry, too. These secondary raw materials are utilized in the cheaper jewelry or jewelry with artificial stones or fashion jewelry.

❖ *The cost of capital is limited*

Jewelry is the expensive product because it composes of high value raw materials. As well, the manufacturers in jewelry industry have to invest excessively both in very high value raw materials and the expensive machines and equipment. Thus, the jewelry producers need to have a lot of investment fund as well as extremely working capital. Moreover, at this time the exchange rate from the devaluation of Thai baht affects to the cost of import raw material, which is the main cost of production, very much. The instable of Thai baht currency adds more loads to the importers and also the manufacturers a lot.

As shown in production cost structure of jewelry industry below, the total raw material costs account for 70 percent of total production cost. These 70 percent come from precious metal 35 percent, which have to import almost all of them from abroad. Other main raw material is loose stone, which account for 30 percent of total production cost. Although in the view of jewelry business, most of loose stones are bought from the domestic traders, which is gems cutters, but most of rough stones that is the main raw material of gems cutting business have to import, too. Consequently, the costs of loose stone are depending on import rough stone prices certainly.

Table 6.5: Cost structure in producing jewelry.

List	Percentage	Import (%)
Precious Metal	35	100
Loose Stone	30	
Other Raw Materials	5	
Labour	12	
Factory Overhead	8	
Depreciation	4	
Interest	3	
Other Cost	3	

Source: Entrepreneur survey in October 1997 and Paper "Export Avenue and effect from AFTA" of TDRI

According to the survey of Sasin Research Centre (Narasri Waiwanijkul et al., 1999), most of the entrepreneurs both in the small and medium size enterprises have to add the registered capitals double than in the first register time. Because of the very high cost of capital, almost small size enterprises have to have registered capital about 1-10 million baht. On the other hand, most of medium size companies have the registered capital as much as 5-20 million baht and there are five companies that have the registered capitals more than 100 million baht.

Table 6.6: Registered capital of Thai jewelry entrepreneurs.

Small Size Enterprises		Unit: Number of companies	
Registered Capitals	At First Register	At Present	
Less than 1 million baht	45	22	
1-5 million baht	64	62	
5-10 million baht	25	40	
More than 10 million baht	9	19	

Source: The survey of Sasin Research Center, Chulalongkorn University

Medium Size Enterprises		Unit: Number of companies	
Registered Capitals	At First Register	At Present	
Less than 5 million baht	94	-	
5-20 million baht	38	116	
20-50 million baht	11	19	
50-100 million baht	2	5	
More than 100 million baht	-	5	

Source: The survey of Sasin Research Center, Chulalongkorn University

Two figures above confirm that jewelry industry have to use a lot of investment capitals. Although some companies have the registered capitals in two digits millions baht, but these numbers of investment are not enough for the high cost in operating this business according to very high price raw materials and expensive equipment, especially in the small size enterprises. The limited cost of capital in Thai jewelry industry is also the fetal problem, it brings to other problems such as the jewelry manufacturers have the

orders but they cannot produce because they do not have money to buy the raw materials. Thus, government should take care this problem immediately.

❖ ***The specialists are not enough***

Shortage of meticulous worker

Nowadays, the number of meticulous worker is getting lower compared with the expanding of demand. Especially, the high skilled labours and the specialist human resources such as goldsmith, master craftsman in fixing gemstone, founder (metal), mold maker, etc. are not enough in Thailand.

From the survey of the Institute of Human Resource, Thammasat University (Jira Hongladarom et al.,1995), 40 percent of interview jewelry companies still have the lacking of meticulous worker problem both in high skilled and moderate skilled level.

Shortage of designer

There is a shortage in the number of designers. Those that we have now still have to be improved the capability to match with the demand of the market. Most of the modern designs are done by the joint venture. The others still try to imitate from the foreign companies or use the same old style.

Shortage of gemmologist

Not only the shortage of meticulous workers and designers is the fetal labour problem in Thai jewelry industry, but also the number of gemmologist is not enough. The gemmologist is the specialist in gemology science, who has response to analyse, test and check the quality and also the condition of gemstone to determine the natural and synthetic gemstone.

❖ ***Thai Designers aren't qualify***

Designing is the serious obstacle of Thai jewelry industry at this time. Not only Thailand is lack of designer but also several exist designers are disqualify. Some big factories have to hire the foreign designers from France and Italy for designing jewelry that meet the market's requirement.

Nowadays, the designing jewelry in Thailand is divided into two types:

- Designing that depend on the designers' creativity and their satisfaction, while, most of them don't know the market's need.
- Designing by forecasting market's trend

The disadvantages of Thai designers are: They aren't commercial artist. They only want to create the beautiful and strength design while don't consider to the market's needs. Most of set designing aren't in professional type. Sometime in each set may be not in same type. The most important disadvantage is Thai designers are familiar with copying from abroad. Therefore, they don't have the creativity and vision as should be.

❖ *Lack of development in production technology*

Thai jewelry industry didn't have much development in production technology in the past. The techniques in decorating for added value and helping jewelry process are essential. We still need to acquire the production technique from other countries to guarantee the standard and quality of the finished products. In the high quality products, jewelry's settings, which made of gold, silver, or platinum, are produced by the high technology from abroad. The large factories order the high-tech machines from Japan, USA, and Italy. Moreover, there are others high-tech such as vacuum system, electron-heating thermometer, etc. to help in the operation.

Several jewelries, for example, jewel pendant, earring will be made by mold-and-die stamping method, which mostly mold will be import from abroad such as USA, Italy. In 1992, there was import mould as much as US\$ 120 millions. Thus, we should develop our technology for reduce the import volume.

❖ *Most of machines and equipment are imported & expensive*

Although in present day, there are some joint ventures between Thai entrepreneurs and foreign jewelers for producing few high technology machines in Thailand, but most of machines and equipment that used in manufacturing jewelry still have to import as in Table 6.7.

About 23.1 percent of machines in jewelry industry have to import and the other 46.2 percent of them came from both import and domestic. In the other hand, the

equipment and tools that used in this industry have to import about 30.8 percent and other 46.2 percent both produced in Thailand and other foreign countries.

Most of import machines bought from USA, Italy, Germany, and Japan. As same as the import equipment and tool, that mostly came from Italy, Germany, USA, and Japan.

Table 6.7: Proportion of export/domestic machines, equipment and tools in jewelry production.

Origin	Percentage
Machine	
□ Domestic	30.8
□ Import	23.1
□ Domestic and Import	46.2
Equipment and Tool	
□ Domestic	23.1
□ Import	30.8
□ Domestic and Import	46.2

Source: Human Resource Institute, Thammasat University

Table 6.8: Source of export machines, equipment and tools in jewelry production.

Country	Machine	Equipment and Tool
USA	33.3	20.8
Italy	26.7	25.0
Germany	13.3	25.0
Japan	13.3	12.5
Switzerland	6.7	8.3
Belgium	6.7	4.2
Hong Kong	-	4.2

Source: Human Resource Institute, Thammasat University

The important equipment and tools that used in processing jewelry are as follows, (Investment Promotion Committee Office, 1994):

- Files;
- High Speed and Carbide Burs of all shapes;
- Mounted and Un-mounted Wheels and Points;
- Impregnated Wheels, Rods, Discs, Cords and Tapes;
- Coated Flap Wheels, Drum Sanders and Bands;
- Diamond Files, Scribes, Cutters, Wheels and Points;
- Coated, Sintered and Scepticilised Polishing Wheel for diamonds, coloured stones and emeralds;
- Rouges and Buffing and Polishing Compounds;
- Sand-Blaster and Blasting Media;
- Mandrel Mounted and Un-mounted wheel, Cup and End Brushes.

- Cloth, Fibre and Felt Buff Wheels, Felt Bobs and Laps.

Table 6.9: Demands of equipment in jewelry industry.

Equipment	Origin	1980	1985	1990	1993	1998
Wax ('000 Kg.)	Import	0.14	0.56	3.3	4.6	7.8
Plaster ('000 Kg.)	Import	5.6	23.0	135.7	186.8	289.2
Making Mould Rubber ('000 Kg.)	Import	0.8	3.3	20.0	27.0	45.0
Polishing Rubber ('000 pieces)	Domestic/Import	1.3	5.1	30.1	41.5	89.2
Metal Scrub ('000 pieces)	Domestic/Import	0.8	3.4	20.5	28.2	41.3
Files ('000 pieces)	Domestic/Import	0.9	3.9	23.0	31.7	61.0
Burs ('000 pieces)	Domestic/Import	4.0	16.3	97.3	134.0	252.1
Mould casting ('000 pieces)	Domestic/Import	0.3	1.0	6.1	8.5	14.2
Wheels ('000 pieces)	Domestic/Import	0.5	2.2	12.8	17.6	25.9
Mixed Metal ('000 pieces)	Domestic/Import	0.33	1.1	6.4	8.8	13.6

Source: Trade Statistic Centre, Department of Business Economic, Ministry of Commerce

In addition, there are other reasons that some jewelry accessories have to be imported from foreign country. Some accessories; such as earring and chain; are the trend design. They are obsolete very quickly. It is not worth to buy very expensive machine and produce in-house in a short period. So, Thai producers outsource them for foreign countries. And the other reason is these accessories can be produced by the machine very fast. It is not worth to produce them by labour intensive or labour hand-made.

In conclusion, many machines and equipment in jewelry industry have to be import from many reasons that described before. Then, the import of machines and equipment that used in jewelry industry has another problem that is the import tax rates of them are very high. Thus, there are many sneaking these equipment into the country.

❖ *Mostly Thai producers cannot produce as mass production*

Most of the jewelry businesses in Thailand are operated in a form of family business or small business. The equipment and machines that are used in their operations, therefore, are simple and inexpensive. So they cannot produce as mass production. The investment in a form of medium or large sized industry is few compared with small size industry. And the processes in exporting have to be done through the exporting firms and trading firms. Thus, the negotiate power with trading agent is low. There are just only a few companies that act as both producer and exporter. These separated functions of jewelry business make Thai jewelry cannot compete with the big producers in the international market.

❖ *There is no standard of product*

Most of Thai jewelry, especially products from the small factories and low-end market products don't have the standard. Jewelry is the high value product. Thus the image and credibility are very important. If our products don't have its own standard or don't meet the international standard, the sellers will have low negotiate power against customer.

❖ *The provision of information and data is limited*

The information collection and publication of Thai jewelry industry are not enough. The essential knowledge in term of marketing, modern technology, government measures, etc. is limited. It is the weaknesses in the marketing and other parts of Thai jewelry business.

❖ *Thai depends on only few main export markets*

The export of Thai jewelry depends on only few main export markets as follows: USA, Germany, UK, Japan, France, and Switzerland. The export to USA is the highest sector. It accounted for about 44.0 percent or US\$ 367.5 millions in 1999. And these six main export markets accounted for 78.2 percent of total export.

Table 6.10: Major export markets of Thai jewelry.

Main Export Market	Unit: US\$ Millions					
	1997		1998		1999	
USA	284.6	32.9%	289.0	37.6%	367.5	44.0%
Germany	83.2	9.6%	76.2	9.9%	79.0	9.5%
UK	40.0	4.6%	49.2	6.4%	53.6	6.4%
Japan	95.5	11.0%	65.5	8.5%	57.0	6.8%
France	41.0	4.7%	41.8	5.4%	42.4	5.1%
Switzerland	45.1	5.2%	47.7	6.2%	52.8	6.3%
Total 6 markets	589.4	68.1%	569.4	74.1%	652.3	78.2%

Source: Trade Statistic Centre, Department of Business Economic, Ministry of Commerce

As you seen in the Figure, USA is the most important market for Thai jewelry export; it has accounted more than 1/3 of total export. So, Thai jewelry depends on the situation of USA both in economic and political of US government. If the economic of USA declines, Thai jewelry business will be effect a lot. Or if there are more trade barriers, it will affect the export of Thai jewelry so much certainly.

❖ *Not enough promoting Thai brand name*

Thailand is known worldwide in the quality and cutting skilled of gemstone, especially ruby and blue sapphire. Moreover, the skill and elaboration in producing jewelry of Thai labours are acceptable in the world market. However, most of Thai jeweler did not take the advantage from these strengths. So, Thai exporters should develop Thai brand name to promote their product and also promote the country. Moreover, the government and other private organisations should help together to create Thai brand name to be famous in the international market forever.

❖ *Thai entrepreneurs lack of knowledge in management*

Some of Thai producers don't have enough knowledge in management and international marketing. Especially, the entrepreneur in small and medium enterprise (SMEs) mostly lack of skill in management such as financial, marketing, etc.

6.3 Opportunities of Thai Jewelry Industry

❖ *Thailand is the centre of raw materials in Indochina*

The topography of Thailand and neighbours in Southeast Asia is full of gemstones, especially colour precious stones. In the past, Thailand had a lot of high quality ruby as well known as "Tabtim Siam" and also blue and yellow sapphire. Although ruby and sapphire are rare in Thailand nowadays because of the rapid growth and huge demand of these in last 10 years; but our neighbours in Southeast Asia still have a lot of these resources. Moreover, Thailand locates between the two potential sources of gemstone as Myanmar and Cambodia. While Thailand has high quality ruby, Myanmar's ruby is beautiful not less than "Siam Ruby". Moreover, Myanmar also has sapphire, jadeite, amethyst, and diamond. Cambodia has ruby, high quality blue sapphire, gold, and silver. Vietnam has ruby, sapphire, garnet, peridot, and opal.

Figure 6.1: Gemstone and precious metal sources in South East Asia.



Source: Asian Institute of Gemmological Science

❖ *Thai government supports mining investment abroad*

Government has encouraged Thai investors to do joint venture in gem mine business with our neighbour countries and also other countries that have a lot of gemstones for example, Myanmar, Cambodia, South Africa, and Madagascar, etc. Moreover, the Ministry of Foreign Affair also negotiated with Sri Lanka to export Gueda sapphire to Thailand for reduce the shortage of gemstone problem, which is the important raw material in jewelry business.

❖ *There are some corrections in taxation, VAT exemption has been introduced*

In the past five years, Thai government has tried to improve tax law, especially import tax regulation, continuously for helping jewelry business to complete with other countries. Last ten years, import tax of raw materials in jewelry business was very high. Some goods had the import tax as high as 300 percent and the average was about 60 percent. Then with the help of Department of Export Promotion and Department of Custom, the import tax had been reduced continually one by one from exempt import tax of rough diamond and rough coloured stones. Until the announce at January 1, 1999, the import tax of raw material reduced as follows:

Table 6.11: Reduction of import duty rate of several raw materials.

Title	Unit: Percent	
	From	To
Pearl	25	20
Cut Diamond	20	0
Cut Ruby	20	0
Cut Sapphire	20	0
Cut Emerald	20	0

Source: Trade Statistic Centre, Department of Custom, Ministry of Commerce

Moreover the latest announce is about gold, the cabinet has announced new tax structure to improve tax collection on gold trading, making the tax structure more internationally acceptable, which is in line with its unique business practices. The new tax structure has taken effect since September 1, 2000. One of the interesting points is the government has decided to exempt VAT (Value Added Tax) collection on non-ornamental gold that imported from abroad and manufactured and sold in Thailand. This is the same system that practiced in Europe and in several countries in Asia, including Taiwan and Malaysia. The objectives behind VAT exemption for non-ornamental gold imported are:

1. To avoid creating an additional burden on ornamental gold traders since the tax rate will refer to the content of gold purity. Imposing such a tax collection on ornamental gold traders will cut out a double taxation system.
2. To lessen the problem of gold smuggling. This could ease the practice of gold smuggling since the tax burden, which is added to cost, is eradicated.

(Anyamanee Newsletter, September 2000)

❖ *Thai labours have the high potential in handicraft work*

Since in the part, Thais have high skill in handicraft work because Thais have elaborate and meticulous. When some of Thais change the life style from agricultural social to industrial social, they still have the special ability to work with graceful and do well with fine work.

❖ *Thai government supports the education in jewelry industry*

Thai government has supported the education programmes for producing the potential workers to the jewelry industry. There are education learning and skill-training programmes both organised by the government's departments and also the private sectors as follows:

1) Organised by government

There are many departments of the government that establish the education centres for the improvement in skill and knowledge that need in jewelry industry as follows:

□ *Ministry of Education*

The Ministry of Education by Vocational Education Department has formed the gems and jewelry education and training programme in three technique colleges, which locate near production base: Trad Technique Collage, Chantaburee Technique Collage, and Srisaket Technique Collage. There are three levels of learning programmes: short training course, profession certificate course, and highly profession certificate course. The short training course has operated since 1986 and it has the learning duration about three months to one year. Secondly, profession certificate course is the three-year period course. It has operated since 1995 in jewelry course, cutting gems technology course, and goldsmith course. Lastly, the highly profession certificate course, who would like to register in this course must pass the professional certificate course. This course contains two-year learning period. There are six different programmes in professional certificate course: designing jewelry course, analysing and quality control in gems and jewelry course, making prototype and casting course, jewelry course, and goldsmith course.

In addition, Ratchamongkhon Technology Institute also has highly profession certificate course in jewelry industry, too. There are making mould course, metal for jewelry course, and jewelry industry worker course.

Moreover, Department of Education Outside School has the short period training course about 30-600 hours. There are gems and diamond cutting course (30-600 hours), making jewelry-setting course (ring, bracelets, locket, earring, and brooch)(400 hours), and making jewelry from gemstone course (300 hours)

□ Ministry of Industry

The Ministry of Industry by gems and jewelry industry department has short period training course about one to two month and special seminar course within one week according to the training plan in each year. In year 2000, there are training courses in casting jewelry setting, forming jewelry by wax, forming jewelry by metal, and fixing gemstone into jewelry setting.

□ Ministry of University Affair

The Ministry of University Affair has arranged Bachelor's degree course in several universities. These courses have objective to produce the management persons and the researchers in gems and jewelry industry. The universities, which have arranged the Bachelor's degree in gems and jewelry industry are as follows:

1. Srinakarinwirot University (Prasanmit) has educated the Bachelor of Science in material science. This course aims in management and marketing in jewelry industry.
2. Burapha University has arranged the Bachelor of Science in material science. This course aims in develop technology in gems and jewelry industry.
3. Chiangmai University has instructed the Bachelor of Science in gemology. This course aims in mining gemstone, analysing and assessing quality of gemstone, and adding quality and adding value in gemstone technique.
4. Silpakorn University has taught the Bachelor of Fine Art in jewelry design. This course aims in designing jewelry.

2) Organised by private sectors

Not only the government education institute has arranged the professional courses and training programmes to add knowledge and capability in jewelry industry more systematic, but also the private sectors have established many institutes to support the requirement of human resource in this industry as follows:

□ Asian Institute of Gemmological Sciences

Asian Institute of Gemological Science (AIGS) is the institute that trains the human resource in gemological and art of design in jewelry. It has arranged several courses in gem and jewelry education as introduction to gemstones, gem identification I and II, diamond grading & appraisal, coloured stone grading & appraisal, synthetic & treated gem identification, jewelry design, and jewelry computer added design.

[Source: www.aigs.edu]

□ School of Gemological Science (Thailand)

School of Gemological Science (Thailand) (SGS) has arranged several courses in gem and jewelry education, which are similar to AIGS. There are introduction about pearl, jewelry design, jewelry producing I and II, introduction to gemstones, gem identification I and II, diamond grading & appraisal, coloured stone grading & appraisal, and synthetic & treated gem identification.

□ Bangkok Jewelry Institute

Bangkok Jewelry Institute aims to educate in produce human resource in jewelry design.

□ Gems International Training & Consultant

The aim of Gems International Training & Consultant is as same as Bangkok Jewelry Institute that is to educate in produce human resource in jewelry design.

3) Joint venture between governmental and private sectors

□ Gem and Jewelry Institute of Thailand

The latest education centre of jewelry industry is Gem and Jewelry Institute of Thailand. GIT is non-profit organisation by the joint efforts of governmental and private

sectors. The Faculty of Science, Chulalongkorn University has contributed its personnel and facilities. The Export Promotion Department, Ministry of Commerce has supported the initial funding for all necessary research, testing equipment, and a budget to run the institute. And also the it have the cooperation from private organizations such as Thai Gem and Jewelry Traders Association, Thai Diamond Manufacturers Association, Jeweler's Association, Gold Trader Association, etc.

GIT has official opened since October 1st, 1999. This institute has provides four centres as follows: gem testing laboratory, gem and jewelry research centre, information services centre, and gemmological training centre. About the gemmological training centre, it has main functions as to provide professional training for those already in the gem and jewelry industry and any new entry to the business and to organise both national and international conferences.

However, the education and training institutes that provided by government departments and private sectors do not have the enough relationship between each others both in developing and assessment the exist courses. Moreover, the educating and training of government departments aren't enough for the high demand from the rapid expanding of Thai jewelry industry, particularly in specialist workers and management persons.

❖ ***Establishment of Thailand Research Fund (TRF) for development of gem and jewelry industry***

TRF for development of gem and jewelry industry has established in 1996 by the co-operation of three main groups. First group consists of the scientists and specialists in this field. Second group are the representatives from Department of underground Resource, Department of Industrial Promotion and Department of Export Promotion. Finally, the last group is Thai Gem & Jewelry Industrial Association as the represent for the entrepreneurs, jewelers and traders in this field.

TRF supports money for the research that is benefit to the development of the country. About the gem and jewelry industry, it has supported several aspects as follows:

- ❑ Database and information distribution
- ❑ Policy and strategy to develop jewelry industry
- ❑ Marketing
- ❑ Human resource
- ❑ Designing jewelry

- Added quality in gemstone
- Determining the standard of gemstone
- Machine and equipment in gem and jewelry industry
- Material and metal in the jewelry industry

At this time TRF for developing gem and jewelry industry has approved and supported 20 projects. These are already finished seven projects and in-process 13 projects. TRF for developing gem and jewelry industry will help to research many essential in developing of jewelry industry and it will benefit to Thai jewelry industry a lot in the future.

❖ *Measures regarding customs duties for export promotion*

The Custom Department has created a new dimension in its system by improving and modifying existing procedures. These have been reduced and facilitated in order to expedite and modernize clearance systems, thus creating transparency and leading the department to meet the international standards required for the new decade. It has provided a “one-stop service” to expedite and facilitate duty refunds as well as to provide a variety of advantages aimed at reducing operating problems and burdens on importers and exporters. (Anyamane Newsletter, March 1999)

❖ *Measures to help the exporters to find new market*

The Ministry of Commerce has established a centre to facilitate and support the exporters to identify new markets and promote Thai products in Africa, South Asia, Middle East, China, Latin America, Western Europe and other neighbouring countries. The government has pledged to give support in three measures, viz.:

1. *Financial Measure*: The EXIM BANK will relax the conditions on export credit for the exporters to the specified market with the condition that the exporters will have to use the insurance service of the bank as a compensation for the interest burden on the exporter.
2. *Export Promotion Measure*: It includes marketing measures such as organizing high-level delegates to visit new markets, solo trade shows, building network to spread the goods, promotion of border trade, etc.

3. *Tax Measure*: It is authorized for the exporter to double the expenses, in implementing the market expansion for tax deduction.

(Department of Export Promotion, cited in Anyamane Newsletter, September 1999)

❖ *World economic has expanded continuously after economic crisis in 1997*

The trading of jewelry (include gemstone) in the world market has margin about 0.86 percent of total world trade volume and it has raise or down trend depend on world economic. As seen that the total trading volume of jewelry in world market in 1996 was about US\$ 114,633 millions, increased 5.89 percent, while the world economic had growth about 4.3 percent. Then in 1997, the world economic expanded 4.2 percent, while jewelry trading had volume about US\$ 117,586 millions, raised only 2.57 percent because in 1997, the economic crisis in Thailand and Asian countries such as Indonesia, and South Korea affected to the world economic.

Next in 1998, the trading volume of jewelry in world market was about US\$ 97,242 millions, decreased 17.30 percent because of the effect from the Asia economic crisis. However, the economic in Asia has recovered slightly since 1999, and the trading jewelry has started to expand from the lowest point in 1998. As Thailand could increase export jewelry 8.6 percent in 1999 and likely to continue increase in 2000. Because of World economic has the recover trend. Thus, the demand in jewelry should rise.

From the forecasting of World Economic Outlook, trade volume of the world in 2000 will grow as much as 10.0 percent. The expanding of world economic will be 4.7 percent. They forecast that in year 2000, both world economic expanding and world trade volume would be the highest growth in past five years because of the raising trend of US economic. However, since third quarter of 2000, US economic seem likely to force with the landing economic (at this time, we do not know whether it is hard-landing or soft-landing). It will affect to the whole international market, including jewelry business.

Table 6.12: Important world economic indicators.

	Unit: Percent					
	1996	1997	1998	1999	2000(E)	2001(E)
World Trade Volume	6.7	9.8	4.3	5.1	10.0	7.8
World Economic Expanding	4.1	4.1	2.6	3.4	4.7	4.2
□ USA	3.6	4.4	4.4	4.2	5.2	3.2
□ EU	1.7	2.6	2.7	2.4	3.4	3.3
- Germany	0.8	1.4	2.1	1.6	2.9	3.3
- France	1.1	2.0	3.2	2.9	3.5	3.5
- Italy	1.1	1.8	1.5	1.4	3.1	3.0
- UK	2.6	3.5	2.6	2.1	3.1	2.8
□ ASIA	8.3	6.5	4.1	5.9	6.7	6.6
- Japan	5.0	1.6	-2.5	0.2	1.4	1.8
- Thailand	5.9	-1.7	-10.2	4.2	5.0	N.A.

Source: World Economic Outlook, October 2000

Note: E = Estimated Volume

❖ *Export process takes a shorter time to accomplish*

Nowadays, the export of jewelry to the customers' countries is easier and much more convenient than in the past. Moreover, export process takes a much shorter time to accomplish. These come from the better transportation around the world and faster custom process by government support. Many of international logistics express companies such as FedEx, Brinks, UPS, DHS provide the faster, more expedient, and safer transportation than in the past. On the other hand, Thai custom helps a lot to shorter the custom process of exporting that make the transportation time faster.

❖ *Internet*

The most interesting subject in the 21st century is the Internet. The Internet is the basic knowledge and essential infrastructure of electronic commerce or E-commerce. The E-commerce will be the most convenient and effective way to do business in this decade. As well as the jewelry business, it is the great opportunity of Thai exporters to use the Internet as the effective sale transaction to the consumers all over the world.

Executives and forecasting companies believe that E-commerce in the USA alone could reach US\$ one trillion, which account for 10 percent of USA's GDP, by 2002. (Pruwer, Feb 2000)

Intel now sells around \$US 17 billions a year of its products on the Net and everything including art, antiques, and jewelry can be sold through the wondrous Web. (www.intel.com, 2000)

From the survey of MVI Marketing (2000), the surveys are divided into two sections: the general persons and the persons who regular use the Internet. From the general persons survey, only one percent of jewelry purchased was bought on the Internet in 1999 in the United States. The other sources of purchasing jewelry in USA are shown in Table 6.13.

Table 6.13: Sources of jewelry purchased for the *General Persons* in USA in 1999.

Source	Percentage	Source	Percentage
Jewelry Store	49	TV home Shopping	3
Department Store	21	Internet	1
Discount Store	7	Mail Order	1
Catalog	6	Others	12

Source: MVI Marketing

Note: Total more than 100 percent

However, among regular Internet users, 27 percent of them bought some jewelry on-line in 1999.

Table 6.14: Sources of jewelry purchased for the *Regular Internet Users* in USA in 1999.

Source	Percentage	Source	Percentage
Jewelry Store	49	TV home Shopping	14
Department Store	28	Internet	27
Discount Store	15	Others	14
Catalog/ Mail Order	20		

Source: MVI Marketing

Note: Total more than 100 percent

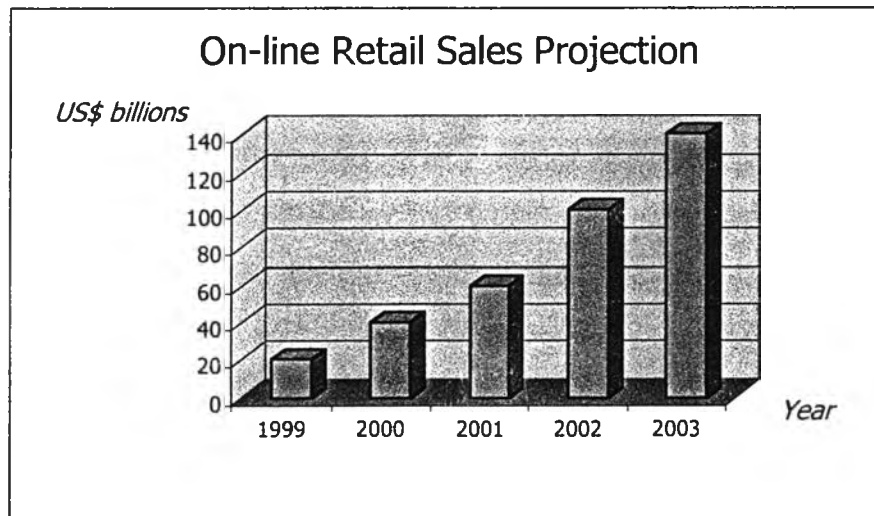
As seen in Table 6.13 and 6.14, there is only one percent of jewelry purchasing on-line the Internet for the general persons. But there is 27 percent of regular Internet users bought jewelry through the Internet in USA in 1999. Thus, there are wide opportunities for Thai jewelers to expand their business through this powerful sales transaction.

Additionally, as described earlier the Internet will be the most effective sales transaction in this decade. From the estimated of Professional Jeweler fax news (July 2000), there are:

- 68 percent of US Internet users will shop on-line by the end year 2000.
- 34 million US households are actively using the Internet.
- Average Internet purchase is now US\$ 627, up from US\$ 500 in 1999. And expected to rise above US\$ 1,000 by 2003.

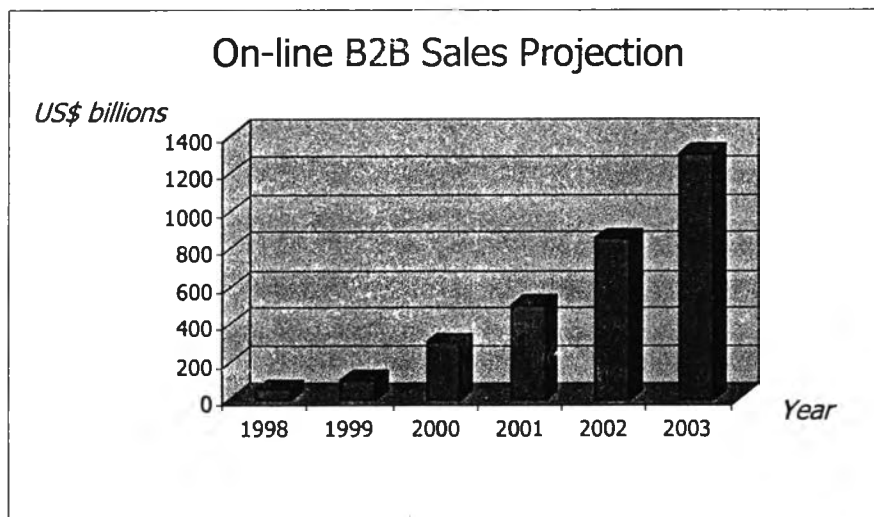
Forrester Research forecasts the rapid growth of retail sales projection through the Internet (B2C) and also Boston Consulting Group estimates the B2B sales transaction on-line the net as follows:

Figure 6.2: Forecast of Growth of On-line Retail Sales Projection (B2C).



Source: Forrester Research

Figure 6.3: Forecast of Growth of On-line Business-to-Business Sales Projection (B2B).



Source: Boston Consulting Group

Moreover, now Thai government has supported Thai export product to sell through the Internet by establish Web Site of Thai product at “www.thaitrade.com”.

❖ ***Thai baht devaluation makes Thailand's export products cheaper***

Thai baht devaluation makes the jewelry from Thailand cheaper than before. Thus, the other countries that don't against the devaluation of their currency will have more purchasing power and Thailand's jewelry is more interesting in pricing. Especially, the United States market is the most interesting one. It is a promising market because of the large pool of consumers with high purchasing power. U.S. buyers can reap the benefit from the devaluation in many countries in Southeast Asia that results in more attractive prices. As a result, increased sales were reported at the four major jewelry fairs in the United States in the first quarter of 1998. These four major fairs are the JCK Show in Orlando, the JA International Jewelry Show in New York, the AGTA (American Gem Trade Association) Gem Fair and the Tucson Wholesale Gem & Jewelry Show 98 in Tucson, Arizona. Most suppliers from Thailand offered jewelry at prices up to 40 percent lower than previous years as a result of the Thai baht devaluation. The ongoing Asian economic crisis is another reason for the lower prices. These can hopefully boost dramatic demand in the U.S. market and help increasing the overall jewelry export of Thailand. After all, the increase in gem and jewelry export will promote the economic recovery in our country.

❖ ***The free trade in World Trade Organisation (WTO)***

General Agreement on Tariff and Trade (GATT) has arranged the trading negotiation around Uruguay in 1986 and finished on December 15, 1993. Then WTO has official establish on January 1, 1995 for supervisory the operation upon to the GATT and negotiation around Uruguay agreement. WTO has the essential objective to make the world trade market to have more freedom by reducing trading obstacle both tariff barrier and non-tariff barrier, and include to open free trade area, too.

Jewelry is organised in the industrial product, HS code number 71. It must be reduced the import duty rate equal each year for five years (1995-1999). The reduced tax that each country implement depends on the negotiation and its proposal that offer to WTO.

Thailand has committed the import duty at 1-30 percent. Thus, Thailand had to reduce import duty from 0-60 percent to 1-30 percent within year 1999.

Whereas, USA has committed the import duty at 0-13.5 percent. Thus USA had to reduce import duty from 0-27.5 percent to 0-13.5 percent.

Japan had to decrease import duty from 0-12.5 percent to 0-10 percent. EU countries have to cut import duty from 0-8.5 percent to 0-4.0 percent. While, Hong Kong doesn't commit the tax duty with WTO.

The free trade opening of WTO will help Thailand to export more jewelry products because the important markets of Thai jewelry product (USA, EU, Japan) had reduced import duty for jewelry. However, the competitors that are in WTO will have this benefit, too.

Table 6.15: Import tax of jewelry industry of WTO members.

Unit: Percent

<i>Title</i>	<i>WTO Country</i>					
	<i>Thailand</i>	<i>USA</i>	<i>EU</i>	<i>Japan</i>	<i>Australia</i>	<i>Canada</i>
Diamond	1.0	0.0	0.0	0.0	0.0	0.0-6.7
Precious stone	1.0-5.0	0.0-10.5	0.0	0.0	0.0	0.0
Pearl	1.0-5.0	0.0	0.0	0.0	1.0	-
Syn. Precious stone	5.0	0.0-6.4	0.0	0.0	0.0	0.0
Jewelry	30.0	5.0-13.5	2.5-4.0	5.2-5.4	10.0-18.0	6.7-8.7
Imitative jewelry	30.0	0.0-11.0	4.0	2.7-10.0	15.0-45.0	0.0-8.7

Source: Trade Statistic Centre, Department of Business Economic, Ministry of Commerce

❖ *ASEAN Free Trade Area will help Thai jewelry export to ASEAN countries*

Thailand is advantageous over any other ASEAN countries in jewelry industry in many aspects, which are the abundant raw materials, skilled labour, manufacture of setting, and the competency in the export market. Moreover, in the upstream industry of jewelry industry aspect, Thailand also has the competitive advantages in both gemstone cutting industry, and diamond cutting industry. In gemstone cutting industry, we have the competitive advantages in terms of raw materials, elaborate cutting skills, and the unique cooking technique. In diamond cutting industry, we have advantage because of the skill in cutting, which is developed from the gemstone cutting.

In addition, the tax and tariff of ASEAN countries is quite high (about 5-40 percent) and the product is classified to be in Fast Track. So it is expected that the opening market resulted from AFTA will boost Thai exporting in ASEAN, especially in Indonesia, which has 40 percent, tax and tariff. However, Thailand cannot get any advantages from opening market in the Philippines because this product is in the Exclusion List.

Table 6.16: Import Duty of Jewelries* in ASEAN

Country	Import Duty (%)	Track
Thailand**	30	Fast Track
Indonesia	40	Fast Track
Malaysia	5	Fast Track
Philippines	29.25	Exclusion List
Singapore	0	Fast Track
Brunei	10	Fast Track

Source: ASEAN Secretariat

Note: * refers to the jewelries in harmonize code 71.13.19, 71.14.11, 71.14.19

** gold jewelry and silver jewelry have import duty = 60 percent

However, the proof of setting local content requirement of jewelry industry is the important part that identifies whether Thailand will get advantages from entering ASEAN Free Trade Area (AFTA). This is because most of the invested capital (more than 60 percent) is used up in raw materials, which imported from non-ASEAN countries. If there is not any rule about substantial transformation, this industry cannot get the advantages from the exporting expansion to ASEAN countries.

❖ *De Beer's excessive advertisements arouse higher demand*

In the past few years jewelry that is more famous in Thailand is diamond jewelry. This is because of the market support from 'De Beers'. Moreover, the size and price of the diamond jewelry has changed from the past. The product has several price levels for the consumers and it can be used in several occasions.

6.4 Threats of Thai Jewelry Industry

❖ *Most of raw materials are depend on import*

In the past, Thailand was rich in colour gemstone, especially ruby and blue sapphire. However, with the rapid growth of jewelry business in last decade, this raw material in Thailand has reduced and not enough for the higher demand anymore. Thus, the most raw materials of jewelry industry are depending on import both in gemstone as diamond and precious stone; and precious metal as gold, silver, and platinum. The volumes of import raw material are shown in Figure 6.17. The highest value import product is diamond, then gold and precious stone. The countries from which Thailand

imported these resources were India, Hong Kong, Belgium, the United States, and Switzerland.

Table 6.17: Import volume of raw materials in jewelry industry.

Unit: US\$ Millions

	1996	1997	1998	1999	2000 (Jan-Sep)
Diamond	900.5	577.4	429.0	603.1	587.9
Precious stone	130.6	85.1	74.0	92.9	78.5
Semi-precious stone	47.1	32.4	27.7	39.9	54.5
Pearl	25.2	9.3	6.1	10.6	11.7
Syn. Precious stone	28.0	31.2	20.9	25.0	19.3
Gold	484.4	400.2	260.1	349.9	335.8
Silver	71.0	65.0	73.0	77.2	69.0
Platinum	19.1	12.2	12.4	13.0	16.3
Other jewelry	16.6	12.3	6.8	6.2	10.0
Total import	1,722.3	1,225.1	910.0	1,217.7	1,183.0

Source: Trade Statistic Centre, Department of Business Economic, Ministry of Commerce

The importing of gems

Although Thailand is famous for being an important source for colored gemstones, we still have to import gemstones because of drastic increase in demand. The gemstones from Thai sources only are not enough for production and/or export. Moreover, Thailand has to import diamond because we do not have diamond source in our country.

Thai importing of diamond had a tendency to decrease gradually in term of US\$ currency with the rate of -35.9 and -25.7 percent in year 1997 to 1998 because of the economic down turn and the devalue of Thai baht. However, there is the recover trend with increase the import rate up to 40.6 and 52.0 percent in year 1999 and 2000. In 1996, the value of imported diamond was about 52.3 percent of all imported gems and rose to 54.0 percent in 2000. At the same time, the amount of imported gems decreased from 7.6 percent in 1996 to 6.4 percent in 2000.

The imported gemstones include both uncut and cut. The purpose is to re-cut, or do the heat treatment to make them more valuable, then they are used to make jewelry. Most of imported rubies came from India, USA, Sri Lanka, Hong Kong, Brazil, Switzerland, and Australia. Most imported sapphires came from India, Sri Lanka, USA, Hong Kong, and Australia. However, the sapphire import in the last five years tended to decrease.

The expansion of diamond cutting industry in Thailand results in higher import of uncut diamond. Most uncut diamonds were imported from Belgium. Besides Belgium, they were imported from Hong Kong, Israel, Switzerland, and China. For the import of cut diamond, there was a trend to increase in the similar growth rate as the uncut diamond. Most the import of cut diamond is the big one, which are not cut in Thailand. It is imported from several famous sources such as Belgium, Israel, and Hong Kong. For the import of small one, which is smaller than that cut in Thailand, it is imported from cheap production sources such as India. Then, it is re-cut to be more valuable when used in jewelry production.

To summarize, the reasons of gems importing are that

1. In Thailand, there are only few important sources. Some sources such as Chandaburi and Trad have been used for a long time so they have fewer resources than the past. Now, Thailand must depend on imported raw materials, especially from Myanmar and Sri Lanka.
2. Some needed resources cannot be found in Thailand. Such items are diamond.
3. Because of high cutting skills and low labor cost, foreign countries prefer sending raw diamond to be cut in Thailand.

❖ *Our suppliers change to be our competitors*

As described before, now Thailand is lack of gemstone, which is the important raw material in jewelry industry. Most of gemstones are export from the supplier countries, as well as other raw materials such as gold and platinum. However, the number of sources of raw material is decreased because several supplier countries have the policy to keep their gemstones to use in their countries. As they want to change their position from the exporter of rough stone to be the producer of gems cutting industry and jewelry industry. They change their tasks because they want to add more value to their products. These countries have reduced the volume of export rough stone by issue the law that obstruct the export rough stone to Thailand. Thailand, therefore, is more difficult to outsource these raw materials.

For example, Sri Lanka, which is one the major sources of raw materials, especially in blue sapphire (Gueda sapphire) and yellow sapphire, for Thailand gems and jewelry manufacturing industry, issue the law that make Thai importer much more difficult to buy gemstones such as Thai importers have to bring at least US\$ 10,000 to

deposit in a Sri Lanka bank and must withdrawn money in Rupee currency to buy gemstones. Moreover, after trading, traders must notify to the Sri Lanka's export centre and pay five percent service fees. (Anyamanee Newsletter, December 1998)

Myanmar government, as well, has controlled the mining strictly. Every gemstone that found has to send to MGE, which is a department of the government. Then Myanmar government will arrange the bid competition twice a year. In conclusion the government controls everything of mining jewelry in Myanmar. So, Myanmar government can set the barrier to not export gemstones to Thailand easily. (Thai Rhat Newspaper, August 9, 2000)

As well as Vietnam, Vietnam is also rich of gemstone materials. Although gems from Vietnam aren't popular in Thailand, but there are several Thai traders to have the gems business in Vietnam. Nowadays, Vietnam has changed from the exporter of rough stone to be the jewelry manufacturer. Thus, Vietnam is one of the countries that will change from our suppliers to be our competitors in the near future.

❖ *Unstableness of political status of our frontier countries*

There is some border trade conflict because the cheap sources of raw material are lined along the frontier countries, which are Myanmar, Laos, Cambodia and Vietnam. The political issue can have an effect in production cost.

❖ *Import tax in raw material is quite high*

Import tax in raw material in jewelry industry is quite high, especially, the accessories for assembly jewelry. The average import rate of Thailand is about 0-30 percent, while our competitors as USA collects tax only 0-13.2 percent, Korea only eight percent and Taiwan about 0-15 percent. However, China has the import tax of these raw material more than us, it collects about 17-130 percent.

The high import rate of raw material affects to the high cost of production. Thus, Thailand has disadvantage in this point compare with our competitors like USA, Korea, and Taiwan. This misappropriate import tax doesn't support the competition in the market.

Table 6.18: Import tax rate of jewelry accessories of important import markets.

Unit: Percent

Title	Custom Code	Country					
		Thailand	China	USA	Korea	Taiwan	
						Gen(I)	Gen(II)
Artificial Gems	HS.70.18	10	100	2.2-15	8	2.5-5	2.5
Jewelry Accessories	HS.71.17.90	20	130	0-11	8	0	0
Copper Chain	HS.74.19	20	40-80	4-8.6	8	7.5-12.5	10
Brass Chain	HS.73.26	20	40-90	0-8.6	8	0-15	0-12.5
Art. Pearl made from Glass	HS.70.18	10	100	2.2-15	8	2.5-5	2.5
Art. Pearl made from Plastic	HS.39.26	0-30	35-100	0-13.2	8	5-7.5	5
Earring Plate made from Glass	HS.39.26	0-30	35-100	0-13.2	8	5-7.5	5
Polish Solution	HS.34.05	0-30	80	2	8	10	7.5
Brass Media	HS.68.04	20-5	17-40	0-3.9	8	3-5	3
Mould Rubber	HS.40.16	10-30	30-80	3-7.7	8	10-12.5	10
Resin	HS.39.07.30	20	45	6.1	8	0	0

Source: Trade Statistic Centre, Department of Business Economic, Ministry of Commerce

❖ *New requirement to collect an extra tax*

There is a new requirement to collect an extra tax that is Value Added Tax (VAT) and this cause a higher cost in production and small businesses cannot afford the expense in operation. Although VAT could refund when sold to the customer or export, but it is very complicated and taking a long time.

❖ *Gemstone and precious metal are non-renewable resources*

Raw materials of jewelry industry almost are produced by the nature, human cannot make these same raw material. Although, scientist can make the synthetic material such as Syn. Cubic Zirconia (Syn.CZ), Syn. Strontium Titanate, Syn. Rutite, GGG and YAG for imitative diamond; and Syn. Ruby, Syn. Sapphire, Syn. Emerald, Syn. Spinel, etc. But, the customers still prefer the real gemstones because of the rarity. However, some imitative gemstones are in the same quality as the real one, but the consumers still want the real if they can support its price. Because of the gemstone is un-rebuilt able resource; this material is more rare day by day. The jewelry producers have more difficulty to find the good quality gemstone. Moreover the rareness of precious metal is also the weakness factor of the industry.

❖ *Economic crisis in Asia reduces demand in jewelry industry*

Initially, Thai jewelry industry experienced only a slight effect from the recession. However, since more and more countries have been facing the economic downturn, the demand for jewelry has eventually been affected. Asia market has been affected dramatically since consumers prefer to spend less following the economic downturn. Japan as one major export market of Thailand also faces heavy economic downturn, and this results in significant decrease in demand for jewelry from this country. Therefore, we need to expand our market to somewhere else to compensate this reduction.

❖ *Thailand was cut Generalized System of Preferences (GSP) off*

Generalized System of Preferences (GSP) is the system that bestow the special preferences in custom duty generally, which the developed countries give to the products that have origin in the developing countries by reduce or exempt the import tax to the products that are in each country's list. Now there are 28 developed countries that give GSP to developing countries. There are USA, Canada, EU³, Eastern Europe (Hungary, Bulgaria, Czech, Slovakia, Poland, Russia), Japan, Australia, and New Zealand. (Source: www.dft.moc.go.th)

About jewelry products of Thailand, there are three important GSP rates in three important markets as USA, EU, and Japan.

USA has collect import tax for jewelry product; however, USA has GSP to the developing countries, including Thailand. Import tax rate of USA imported jewelry product and GSP rate for Thailand are as follows:

Table 6.19: Difference between normal tax rate and GSP tax rate in jewelry of USA.

Unit: Percent

Products	Normal Tax Rate	GSP Tax Rate
1. Diamond	0-2	0
2. Precious Stone	0-14.7	0
3. Pearl	0-0.8	0
4. Jewelry	5.6-19.1	0
5. Imitative Jewelry	0-9.2	0-1.1
6. Synthetic Precious Stone	1.2-9	0

Source: Department of Export Promotion, Ministry of Commerce

³ European Union (EU) has 15 members as Austria, Belgium, Denmark, Finland, France, Germany, Greek, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden, and United Kingdom.

However, USA has cut off the GSP of Thailand in the silver jewelry product in 1996 and Thailand's other products are likely to be cut the GSP off in the near future. As you see the different between the normal import tax rate and GSP tax rate is quite high. For example jewelry product has to pay normal tax rate about 5.6-19.1 percent, while GSP tax rate is zero. Thus, if Thailand is cut GSP off, Jewelry from Thailand will be higher price and the competitive advantage will be reduced comparing with jewelry from other competitors and also from USA producers, too.

Secondly, EU also has GSP in jewelry product, that normal import tax rates are about 0.7-7.6 percent and some products the import tax are exempt. However, in year 1997, EU has cut off GSP of Thai jewelry product 50 percent that is exporter of Thai's jewelry products have to pay import tax increasing 50 percent of GSP tax. Moreover, EU likely cut off all GSP of Thai jewelry in the near future.

Thirdly, Japan has the free trade system both import and export. It has import tax rate for jewelry about 0-6.6 percent. Moreover, Japan gives GSP to Thai jewelry products. However, Japan determines the GSP volume at 4,300 million yen per year. The products that outside this volume have to pay tax in normal rate.

❖ *The problems from the unity of economic groups*

The effects from the unite of economic group in several regions of the world such as North America Free Trade Area (NAFTA), and European Union (EU) bring to the trading disadvantage to send the products to sell in the country that is in the trading area. Because of there is the free trade for the member countries and there is exempt the custom tax and duty for several products within the trading area.

NAFTA affects Thai products include jewelry products a lot because USA, which is a member of NAFTA is the biggest and most important market of Thai products. The effect from NAFTA that could seen clearly is Thailand loose the market margin in USA to Mexico. From the special preferences in custom tax and the short transportation of Mexico, make import products from Mexico have the lower import cost than products that import from Thailand. Put together with Thai products, such as silver jewelry, were cut GSP off by USA in 1996. Moreover, the free trade opening in Mexico makes Mexico has more advantage and interested from USA and other countries to invest in Mexico for producing products to sell in USA.

The grouping of European Union or EU unites to be the single market as “Single European Market”. It makes the high import rate for the products from countries outside its trading area, except those products are in GSP list. However, many of Thai products, include jewelry products was cut GSP off 50 percent in 1997 and likely to cut off all in the near future. Thus, Thai products have to pay tax in normal rate, which much higher than GSP rate and member rate.

Moreover, the Single European Market brings more trading within the region or the members. It causes the drop in the trading outside the region. Thailand’s jewelry products also affected a lot. In addition, there is the plan to expand the members of EU to the others countries in Europe and also there is the association agreements with Turkey, Zibus, and Morta. Thus, it is the important trading threat of exporting Thai jewelry industry to the countries in EU and it might be more violent in the future.

❖ *Policies and measures of competitors affect Thai jewelry industry’s competitive potential*

Polices and Measures that are announced and implemented by any countries for promoting and supporting their own jewelry industries. But the polices and measures of each country have effects to it own jewelry industry in the different levels. And it also affect to the other countries, particularly the export jewelry countries as Thailand. The measures and polices in jewelry industry of each country are as follows:

□ *Republic of China*

China is a production centre of gems and jewelry industry in Asia and it is the important competitor of Thailand in the world market. China has growth rapidly in last few years because it has huge advantage in labour include high amount of labour, low labour cost and its labour could develop their potential. Especially, China has much advantage in cutting diamond industry in small size diamond (0.02-0.05 carat) with the original cutting method. Nowadays, China has 80 cutting diamond factories with labour about 10,500 people in cutting diamond industry that could produce about 0.15 million carat per year. There are three main locations of their factories as: in Guangdong, Shanghai, and Shangdong.

Chinese government has developed jewelry industry from the advantage basic in the cheap labour cost that much lower than competitors. Moreover, China government has

tried to determine policies and measures to promote the investment for foreign jewelers. By the way, the local governments have also supported the foreign investors to invest in their local.

The measures and policies of Chinese government to promote jewelry industry are as follows:

1. Chinese government give special preference in tax to the investors by exempt income tax (normally 33 percent) for five years and in sixth year, the investors will pay income tax only a half which is 16.5 percent.
2. The investors will receive the reduction value added tax (VAT) that in general the entrepreneurs have to pay at rate 17 percent of the value of import machines and sale volume in domestic. But the foreign investors will pay VAT only 75 percent (which is the part the Chinese government should receive, and the 25 percent Vat that exempt is the receive tax of local government)
3. There are reduction in methods and time in custom protocol for the convenient in exporting.
4. Chinese government has implemented the law that protects the movement of labour in jewelry industry for protection the increasing labour cost in the industry. This law determines that worker, who want to change his job must have the register document from the External Trade Department (ETD) of Chinese government and have to identify his old factory's name. Then, the recruitment of the factory has to check the worker name in the list and report to ETD.

□ India

India is the country that has been recognized from De Beers to be the third cutting diamond centre of the world behind Belgium and Israel. At this time, there are about 30,000-40,000 diamond-cutting factories with 800,000 skilled workers in India. India can produce small size cut diamond about 12.3 carat per year, which account for 70 percent of the total production volume of small size diamond (0.02-0.05 carat) of the world. The centres of gems and jewelry industry of India are in Surat, Bombay, and Mumbai.

About the jewelry industry, it is the second important industry of India. India import gold for the jewelry production about 1,465 tons per years, which account for 33 percent of total trade volume of gold in the world market. 70 percent of import gold is used in jewelry production, especially gold jewelry.

The jewelry industry include diamond industry makes income to India from export approximate US\$ 5,000 per year. Thus, Indian government has determined the measures and policies to support and protect its jewelry industry as follows:

1. To establish the Gem & Jewelry Export Promotion Council to support and promote Indian jewelry and diamond industry to accepted in the world market.
2. To establish the special industrial areas for jewelry industry in the important ports as in Madaras, Cochin, Noida (near Delhi), and Felta (near Calcutta). This special industrial area acts like the free trade city, which the mostly preferences are about exempt and reduction tax.
3. Indian government announced the Export-Import Policy that used between 1997-2002 as summarised follows:

- 3.1) It is the free trade for jewelry industry by import for the benefits of export promotion. The exports can import gemstones that are the material in the production process within the Replenishment (REP) Licence. Whereas, diamond is imported within DTC Imprested Licence (DTC refers to Diamond Trading Company, which located in London, England)
- 3.2) The exporters can import raw materials with no tax but they have to export finish good products from these materials within five months since the received date from custom.
- 3.3) Indian government permits three government departments and eight banks to be the import agencies for gold, silver, platinum, rough precious stone, pearl, etc. With the new rule, the importers don't have to pay any duty and don't use the import permission document.

□ *Hong Kong*

Jewelry industry is one of few industries that left the manufacturing base in Hong Kong. At this time, there are about 953 jewelry factories with approximate 9,040 labours in Hong Kong. 70 percent of export jewelry from Hong Kong is produced in Hong Kong and other 30 percent is Re-export. That about 54 percent of Re-export jewelry comes from Main Land China. Jewelry that produced and exported from Hong Kong is for the medium to high-level market. Hong Kong is famous and acceptable in designing and

setting jewelry as same as the producers from Europe. However, there are starting to move the manufacturing base to Republic of China for the second-grade products.

Hong Kong is the free trade city. So there isn't any trade barrier in the jewelry industry of Hong Kong. There isn't any limited part in the import and export. And the import tax and export tax is exempt.

□ South Korea

In the past five years, before the economic crisis in Asia in 1997, the export of jewelry from South Korea has expanded rapidly. In 1996, Korea exported jewelry products about US\$ 5,806 millions, which is double volume from the year before. The most export products are gold jewelry, platinum jewelry, jewelry with artificial gemstone. The export products are mostly in type of necklace, earring, jewel pendent, bracelet, and watch belt. South Korea has the important markets in Singapore, Hong Kong, and Switzerland.

The measures in the production, export and import of jewelry industry in South Korea are as follows:

1. South Korean government established jewelry export area at the industrial real estate in Eiri. This jewelry export area is the centre in the production and export of jewelry industry of South Korea since 1996.
2. Import tax: five percent of import price for gemstone and eight percent of import price of jewelry and accessories.
3. Value added tax (VAT): 10 percent of prices that already plus import tax.
4. Luxurious tax: If the import jewelry has the value more than one million Korean von, it will be charged luxurious tax in rate 20 percent in the value that exceed one million Korean von.

□ Vietnam

Nowadays Vietnam is Thailand's supplier in rough gemstone. However, Vietnam would develop and change to be Thai's competitors in jewelry industry in the future. Vietnam has the advantage in raw materials and cheap labour. Thus, there are a lot of foreign jewelers invest in gem and jewelry in Vietnam such as France, Belgium, and Japan. Thailand and Indonesia also invest in silver jewelry industry in Hochimin City.

However, the jewelry industry in Vietnam is the small and undeveloped industry because the domestic market is limited. Moreover, the policies and measures of Vietnamese government are the problems and threats for the investment and development of Vietnam jewelry industry as:

1. The Ministry of Industry of Vietnam determine that the jewelry entrepreneurs must have licence and must have at least \$US 500,000 working capital. In the same time, the import and export of jewelry must have the permission from the Ministry of Commerce. The entrepreneurs who have the import-export less than \$US 500,000 within two years may not have permission to continue the business operation.
2. Since in 1997, Vietnamese government has the measure to reduce importing of gold and other raw materials for protecting the loss of foreign currency.

Moreover, many Vietnamese have the illegal trading rough gemstone around the frontier barrier and sneak to transport to Thailand.

In conclusion, the comparison of the government policies and measures for supporting jewelry industry of each countries compared with Thai government are as follows:

Table 6.20: Comparison of the government policies and measures for supporting jewelry industry.

Factors	<i>India</i>	<i>Hong Kong</i>	<i>China</i>	<i>USA</i>	<i>EU</i>	<i>Indonesia</i>	<i>South Korea</i>	<i>Vietnam</i>
Import Tax of raw Material	-	-	+	-	-	+	+	+
Import Tax of Finish Good Product	-	-	=	-	-	-	-	+
Export Promotion Measure	+	+	+	+	+	+	+	-
Trade Barrier Measure	+	-	+	-	-	+	+	+

Note: - refers to less than Thailand
 = refers to equal to Thailand
 + refers to more than Thailand

❖ *Trade barrier*

The industrial products of Thailand have has some problems from the trade barrier both are the tariff barrier and non-tariff barrier such as:

- Cutting Generalized System of Performance (GDP) off in several products that export to EU and USA market

- Anti-Dumping measure of EU
- Standard regulation in product quality such as ISO 9000, QS 9000
- Standard regulation about environment as ISO 14000
- Labour standard regulation and tyrannous problem of employers
- Standard regulation about the re-useable packaging (Green Dot), EU approach all packaging recyclable
- Etc.

These trade barriers make Thai jewelry products are more expensive because of the higher cost of import, especially come from higher import tax and more difficult to import.

❖ ***There is a slow economic growth rate in the main market***

At this time, there is a slow economic growth rate in the main market for example in Japan. Since the economic crisis in Asia in 1997, not only Thailand, Malaysia, Indonesia, and South Korea those be affected from this down tern of economic. But also Japan affects a lot, too. The economic expanding rate of Japan in 1997 was only 1.4 percent and it was -2.8 percent in 1998. Moreover, the specialists forecast Japan cannot recover much. The estimated economic expanding rate of Japan in 1999 and 2000 will be only 1.0 and 1.5 percent only. The slow growth rate if economic in Japan affects Thai jewelry industry a lot because Japan is one of the important market of Thai jewelry. (See Table 6.12)

❖ ***There is a fierce competition within the region***

As we can see that, Singapore has a free trade market structure, Indonesia and China have lots of cheap labour and Vietnam has plenty of raw materials and cheap labour. Thus, the competition of jewelry business in this region, including AFTA and China, will be very strong. Especially, China will be the great country in the 21st century and it will be Thai's competitor in the low-end market. Moreover, if China can be the member of WTO, it will be very strong and can export to all over the world freely without so many trade barriers as today.

❖ ***The competitors such as India, China, and Vietnam have higher competitiveness***

Not only china that will be our important competitor, but also India and Vietnam are. These countries have much higher competitiveness and ability to improve their products in the international market. In jewelry business, India has advantage in diamond cutting business and also it has several minerals and its important factor is very low labour cost. Whereas, Vietnam also has its own minerals, such as, ruby, sapphire, garnet, peridot, and opal.

❖ ***Thailand cannot be trading base of jewelry industry***

Thailand is only the manufacturing base of jewelry production. Now we aren't trading base. Many of Thailand's infrastructures don't support Thailand to be trading country such as the custom process, tax structure, etc. In jewelry business, Thailand one of the important manufacturer of the world, but we cannot be the trading base, now. Although there are many government departments and private sectors try to make Thailand to be the trading base of jewelry such as "the development Thai jewelry industry to be trading base" project of Thai Gem and Jewelry Traders Association (TGJTA). This project proposed nine essential measures to the government departments that respond to each problem. However, this project has to take quite a long time to accomplish.

❖ ***Bad image of Thai seller***

Some of Thai jewelry sellers, particular small jewelry stores, sell the jewelry to the foreign tourists in the price that not appropriate with the quality of the jewelries. The image of Thai jewelry is destroyed by the few selfish jewelers. That is not worth for the damage of the image and also the trading of the country.