



State of the Sector Report on Philippine Fine Jewelry 2005

July 2006
Pearl2 Project

The State of the Sector Report - Philippine Fine Jewelry is one of a series of State of the Sector Reports published by the Pearl2 Project for 2005. This report also updates the one prepared in 2004.

Pearl2 is a project funded by the Canadian International Development Agency and managed by Agriteam Canada Consulting Ltd.

Pearl2 is a five-year initiative (2002-2007) designed to support the development of small and medium enterprises throughout the Philippines. It aims to help create meaningful jobs for both men and women through the strengthening of Business Support Organizations (BSOs) and Investment Promotion Centers (IPCs).

This report uses the definition provided by the Department of Trade and Industry (DTI) for micro, small and medium enterprises. Micro firms are companies with assets totaling below Php3 million. Small enterprises are those with total assets of over Php3 million to Php15 million, while medium enterprises have assets ranging from over Php15 million to Php100 million.

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**Pearl2 Project
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Philippine Fine Jewelry 2005"**

July 2006

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Contents

1. Background	1
Methodology	2
Limitations	3
Acknowledgments	3
2. Executive Summary	5
3. Industry Overview	9
Product Scope	10
Industry Background	10
Industry Coverage	11
Market Segments	12
4. Global Fine Jewelry Market	15
World Imports of Fine Jewelry	15
<i>Chart 1: World Imports of Fine Jewelry, by Country, 2002-2004</i>	
<i>Table 1: World Imports of Fine Jewelry, by Product Line, 2004</i>	
<i>Chart 2: Major Importers of Fine Jewelry, 2004</i>	
<i>Chart 3: Average Growth Rates of of Major Importers of Fine Jewelry, 2000-2004</i>	
World Exports of Fine Jewelry	19
<i>Chart 4: World Exports of Fine Jewelry, by country, 2004</i>	
U.S. Fine Jewelry Imports	20
<i>Chart 5: U.S. Imports of Fine Jewelry, 2000-2004</i>	
<i>Chart 6: U.S. Imports of Fine Jewelry, by Country, 2004</i>	
<i>Chart 7: Average Growth Rates of Major U.S. Suppliers of Fine Jewelry, 2000-2004</i>	
<i>Chart 8: U.S. Imports of Fine Jewelry from China and South Africa</i>	
European Union Fine Jewelry Imports	24
<i>Chart 9: EU25 Imports of Fine Jewelry, 2000-2004</i>	
<i>Chart 10: EU25 Imports of Fine Jewelry, by Country, 2004</i>	
<i>Chart 11: EU25 Fine Jewelry Imports, by Country of Origin, 2004</i>	
2000-2004	

Philippine Costume Jewelry Exports	27
<i>Chart 12: Philippine Fine Jewelry Exports, 2000-2005</i>	
<i>Chart 16: Philippine Fine Jewelry Exports, by Country, 2005</i>	
<i>Table 2: U.S. Imports of Fine Jewelry from Selected Asian Countries, 2004</i>	
<i>Table 3: EU25 Imports of Fine Jewelry from Selected Asian Countries, 2004</i>	
5. Sectoral Profile	33
<i>Date of Establishment, Company Set-up, Ownership and Management, Product Lines, Facilities, Employment, Subcontractors, Sources of Raw Materials, Mode of Production, Capacity Utilization, Quality Control, Product Development, Market Coverage, Export Market, Market Access, Competitors, Sales, Financing, Source of Assistance</i>	
6. Production Management	45
Overview of the Fine Jewelry Manufacturing Process	45
Inputs	45
<i>Figure 1: Fine Jewelry Manufacturing Process</i>	
Processes and Methods	48
Finished Products	50
Manufacturing System and Practices	50
<i>Production System, Capacity, Production Cycle Time, Seasonality of Production, Working Period, Scheduling, Deliveries, Production Monitoring, Manufacturing Cost, Raw Materials, Packaging Materials, Inventory Monitoring and Control, Organization and Personnel, Compensation, Subcontractors, Skills Training and Development, Rejects and Raw Materials Yield, Production Process Standards, Facility Lay-out and Design, Machines and Tools, Machines and Equipment Maintenance, Product Engineering and Development, Environmental Management, Worker Health and Safety</i>	
7. Value Chain Analysis	67
Structure of the Sector	67
The Fine Jewelry Process Flow	68
Key Findings From the Value Chain Analysis	71
The Fine Jewelry Sector Value Chain Diagram	73
The Fine Jewelry Sector Value Chain Table	74

8. Needs Assessment	87
Firm Infrastructure	87
Inbound Logistics.....	87
Operations.....	88
Outbound Logistics	89
Marketing and Sales	90
Services.....	91
9. Strategic Direction	93
Annexes	97
Annex 1: The Value Chain Analysis	99
Annex 2: Product Coverage of Fine Jewelry	101
Annex 3: Summary of Incentives Under the Jewelry Act (R.A. 8502)	102
Annex 4: World Fine Jewelry Imports by Country, 2002-2004	103
Annex 5: World Fine Jewelry Exports by Country, 2002-2004	104
Annex 6: U.S. Fine Jewelry Imports by Country, 2000-2004	105
Annex 7: EU25 Fine Jewelry Imports by Importing Country, 2000-2004	106
Annex 8: EU25 Fine Jewelry Imports by Supplying Country, 2000-2004	107
Annex 9: Philippine Fine Jewelry Exports by Country, 2000- 2005	108
Annex 10: Summary of Key Findings from 2005 Pearl2 Survey of Fine Jewelry Firms	118
Annex 11: Flow Chart of Fine Jewelry Industry Linkages	

Acronyms

BOI	Bureau of Internal Revenue
BOO	Build-Own-and-Operate
BSO	Business Support Organizations
BSP	Bangko Sentral ng Pilipinas
CIDA	Canadian International Development Agency
CITEM	Center for International Trade Expositions and Missions
DOF	Department of Foreign Affairs
DENR	Department of Environment and Natural Resources
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
FIDA	Fiber Industry Development Authority
FOB	Freight On Board
GPJ	Guild of Philippine Jewelers
ICT	Information and Communication Technologies
IPC	Investment Promotion Center
LC	Letters of Credit
LCL	Least Container Load
MGB	Mines and Geosciences Bureau
Philexport	Philippine Exporters Confederation, Inc.
PO	Purchase Orders
PTRI	Philippine Textile Research Institute
PTTC	Philippine Trade Training Center
QC	Quality Control
R&D	Research and Development
SBGFC	Small Business Guarantee Fund Corporation
SME	Small and Medium-sized Enterprises
SSS	Social Security System
TT	Telegraphic Transfers
UNSD	United Nations Statistics Division
VAT	Value-Added Tax

1 Background

The Pearl2 Project, in coordination with the Department of Trade and Industry, has been actively assisting the local fine jewelry industry for the past three years. Fine jewelry manufacture has good market potential abroad and the sector has only recently started to expand sales to foreign buyers. This study is a continuing effort by Pearl2 to provide updated information on the status of the fine jewelry sector. It is the third to be released since 2003.

The present report features a new section on Production Management in the fine jewelry industry. The section on areas for intervention has also been modified and replaced with a brief discussion on the strategic direction of the industry. The market section has also been expanded and the profile of fine jewelry firms updated. Other sections of the report remain essentially the same except for some updated data and changes in format and presentation.

Methodology

The information used in this report is based on three years of research and data from the various Pearl2 programs. The previous reports in 2003 and 2004 were prepared by external consultants. The present study builds on the work done by these advisors, updated with additional information from both primary and secondary sources. As before, the Project conducted a survey of the members of the fine jewelry Business Support Organization (BSO) covered under the Sectoral Enhancement component of Pearl2, namely, the Guild of Philippine Jewelers (GPJ).

Secondary sources of information include reports from government and the private sector, and online research on the fine jewelry industry. The value chain section of this report presents essentially the same findings as in the previous study. The findings in the present study are augmented by information pertaining to the production management concerns of the industry. The report uses the same value chain model developed by Dr. Michael Porter of the Harvard Business School that was presented in the previous two studies. (Please see Annex 1 for a background on the Value Chain Analysis.)

The new section on Production Management is derived from a study made by a team of industrial engineers engaged by the Project. The findings and data in this section were obtained from a survey of fine jewelry companies with particular focus on their production and manufacturing activities. In addition, the consultants also conducted plant visits, conferences and workshops with industry representatives. Work on the production management assessment of the sector was conducted from the last calendar quarter of 2004 up to early 2005.

Limitations

The respondents to the survey conducted for this report are limited to members of the GPJ. A total of 31 firms participated in the survey. This sample represents about 40% of the total membership of the GPJ. The major focus of this study is on the jewelry manufacturing firms, so there is very limited information on support industries such as raw material suppliers and traders.

The value chain used in this report is limited to the primary and support activities of manufacturers. It does not cover the value chains of external entities such as suppliers or buyers. The value chain analysis consolidates findings from different firms. It provides an overall view of the industry. However, it does not cover any financial or cost information on the firms since such data was difficult to obtain and will be hard to reconcile for an industry-level evaluation.

Data derived from secondary sources are noted as such and presented as these were obtained except for some editing and basic computations made to show trends in the data.

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- Mr. Dennis Beng Hui for working on the Production Management Assessment on fine Jewelry;
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- Ms. Ingrid Javallera of the Bureau of Export Trade Promotion, product manager for fine jewelry;
- Ms. Mercedes Llamas, immediate past President of the Guild of Philippine Jewelers;
- Ms. Ma. Lourdes Unson, President of the Guild of Philippine Jewelers;
- Ms. Grace del Rosario, Executive Director of GPJ; and
- the other officers and members of the Guild for their cooperation in providing data for this report.

2 Executive Summary

The manufacture of fine jewelry covers articles made from precious metals and precious or semi-precious stones, most of which are used for personal adornment. The market for fine jewelry covers the full spectrum from low-end, middle-range and high-end segments.

Most manufacturers in the industry are small to medium size enterprises with a few large firms. At present, most fine jewelry manufacturers are found in Metro Manila and in the nearby province of Bulacan; some are also located in Baguio City and Camarines Norte in Luzon, Cebu in the Visayas, and Davao in Mindanao. Firms sell locally with some also exporting their products. Estimates from the Department of Trade and Industry place fine jewelry producers at about 250 nationwide, employing some 100,000 workers.

The global market for fine jewelry was estimated at about US\$76 billion in 2004 (based on UNSD data). About two thirds of this figure is made up of unmounted or unset diamonds. The United States is the largest market for fine jewelry, accounting for 31% of jewelry imports in 2004. Other major buyers include Belgium, the United Kingdom and Hong Kong.

Among exporters of fine jewelry, Belgium is the largest, accounting for 22% of world exports of jewelry in 2004. Other major suppliers are the United States, the United Kingdom and Hong Kong.

Philippine exports of fine jewelry for 2005 amounted to US\$37 million, up by 55% from the previous year's level. Jewelry made from precious metals and cultured pearls comprise about 80% of industry exports for the year. In 2005, the United States was the largest market for Philippine fine jewelry, accounting for 39% of industry exports. Other important markets include Hong Kong, Italy, Japan and Australia. Overall growth of fine jewelry exports since the year 2000 to 2005 averaged about 14% annually, due mainly to the large increase experienced in 2005.

The main concern of fine jewelry manufacturers at present still pertain to the availability of good quality raw materials, particularly precious metals such as gold and silver. Recent developments in the global environment have also exerted upward pressure on the price of gold which further raises the cost of materials for the industry. The provisions of R.A. 8502 granting incentives to importation of materials and equipment for fine jewelry exporters has yielded limited benefits so far since this applies only to exporting companies.

Aside from issues in raw materials supply, firms in the industry also have to contend with a limited pool of personnel with the needed skills and experience. Companies have to invest in training and skills upgrading of workers. Good training facilities are limited in the industry so firms often have to do the training themselves. To keep good workers, companies have to maintain a relatively good level of compensation for their personnel.

A number of firms in the industry have a semi-mechanized setup in production and utilize manual means in their other activities such as materials handling, quality control and packaging. Most companies find it hard to upgrade machineries due to the heavy taxes on equipment importation. Other concerns in production include inadequate R&D, lack of testing facilities and need for proper waste management.

In marketing, the sector lacks a cohesive marketing program that could create a bigger impact on the global fine jewelry market. The cost of developing foreign markets is high and often takes time before significant sales are generated. This discourages more firms to get into fine jewelry exports. On the local front, firms generally rely on a traditional system of agents to sell their products although a few firms have their own retail stores. If more companies are to go into exports, they would have to review and upgrade their current marketing practices.

The challenge for the fine jewelry sector for the next few years is to sustain the growth in exports they have experienced in the past year. The sector would need to expand the base of firms that are presently exporting and continue to develop more buyers. Issues all along the fine jewelry value chain would need to be addressed to improve the competitiveness of local jewelry products in the global market.

3 Industry Overview

Product Scope

Fine jewelry products cover items made of precious or base metals clad with pearls and precious or semi-precious stones. Gold, silver and platinum are considered precious metals, while diamonds, sapphires, emeralds and rubies are examples of precious stones. The semi-precious stones, on the other hand, include quartz, opal, topaz, amethyst and coral.

Finished fine jewelry products include ornaments like rings, bracelets, necklaces, brooches, earrings, chains, tie-pins, cufflinks and other articles worn on the body or matched with clothes. The sector's most popular product category is gem-set jewelry, particularly diamonds set in 14K or 18K gold, pearl jewelry, and silver jewelry.

Ornaments or wares clad made from precious metals are considered part of the fine or precious jewelry product line. Examples are gold and silversmith's wares with precious metals such as tableware, toilet ware, smoker's accessories, and other household, office or religious articles. Other ornaments can be

worn in trouser pockets or with handbags such as cigarette cases, tobacco boxes and powder boxes. Ornaments that are only plated with precious metals are not considered fine or precious jewelry. Please see Annex 2 for the Product Coverage of Philippine Fine Jewelry.

Industry Background

The Philippines' abundant supply of gold, silver, pearls and various gemstones fostered the development of fine jewelry manufacture in the country. Based on data from the Mines and GeoSciences Bureau (MGB), production of gold in the Philippines in 2004 was estimated at 35,464 kgs. valued at almost US\$457 million. Silver production for the same year was placed at 9,315 kgs. worth some US\$2 million.

In addition to precious metals, the Philippines also has adequate sources of South Sea pearls in Palawan and parts of Mindanao. Deposits of major gemstones are also available in different areas of the country. Among the gemstones sourced locally are Zambales jade and mauve, Mindoro jade, jadeite, jasper, garnet, tektite, quartz, epidote, blue and green schist, and opal.

Fine jewelry production has been in existence in the country for quite a number of years. However, its trade was for a long time largely informal and underground. Fine jewelry products were often seen as luxury items and not given much government support until recently. Imports of raw materials and equipment for the production of fine jewelry, for that matter, were heavily taxed. Firms had difficulty bringing in materials and equipment for their operations.

The industry did not develop as an export industry until the upsurge of world demand for gold jewelry in the 1990s. Government noted the export potential of the sector and consequently included it in its 1992 Export Development Plan. From then on, the sector enjoyed relatively steady growth as an offshoot of the passage of various laws that aimed at boosting the industry's viability and competitiveness in the international market. Foremost is the Jewelry Act (R.A. 8502), which provides for incentive schemes to the jewelry industry. (Please see Annex 3 for a more detailed list of the incentives under R.A. 8502.)

Industry Coverage

Based on estimates by the Department of Trade and Industry (DTI), there are about 250 enterprises manufacturing and exporting fine jewelry nationwide. The industry employs about 100,000 workers. Most of the firms are concentrated in Metro Manila and the nearby province of Bulacan. Other producers are found in Baguio City and Camarines Norte in Luzon; Cebu in the Visayas; and Davao, Surigao and Zamboanga in Mindanao.

Small and medium-scale jewelry enterprises comprise about 50% of the industry, while the top 10 largest jewelry chains and manufacturers represent less than 25%. Only a few firms subcontract work. Most rely on in-house workers for production.

Almost all the manufacturers in the industry are organized into associations. Most groups are part of the Confederation of Philippine Jewelers Inc., which is composed of the following associations:

- Guild of Philippine Jewelers Inc.
- Meycauyan Jewelry Industry Association
- Philippine Association of Pearl Producers & Exporters

- Baguio Silver Gallery
- Bantay Goldsmith Association
- Mindanao United Jewelers Association

Aside from the Confederation, there are also regional/provincial associations from the other Philippine jewelry centers including those in Baguio City, Camarines Norte, Davao, Cebu, Surigao and Zamboanga City.

Market Segments

The market for fine jewelry may be divided into three segments: high-end, medium-range and low-end. Products for the high-end market are made of top quality materials and have excellent craftsmanship and designs. As such, consumers in the high-end market are not price sensitive. The middle and low-end markets are usually more price-conscious and treat items bought as investments. Women tend to be the bigger market for fine jewelry as such products are usually used for personal adornment. Although men also purchase jewelry items, these are usually intended as gifts.

On the whole, fine jewelry is considered a passion for high-income households. Most consumers buy only from trusted or well-known jewelers or retailers. The business of local jewelry retailing consists of independent jewelers and chain jewelry stores. The former also carry more fashion jewelry items and feature a wider range of non-jewelry gift products. The jewelry store chains focus on only a few product categories such as the diamond bridal market.

Retail prices of fine jewelry vary depending on the value of the items. Prices can start from US\$50 to US\$125 for basic jewelry such as silver and gold necklaces, bracelets, rings, earrings, pendants and brooches; US\$125 to US\$600 for pearl and gemstone jewelry, 18 karat gold jewelry and natural pearl jewelry; US\$600- US\$1,250 for the finer silver, gold or platinum jewelry; and above US\$1,250 for diamond jewelry with the finest diamonds.

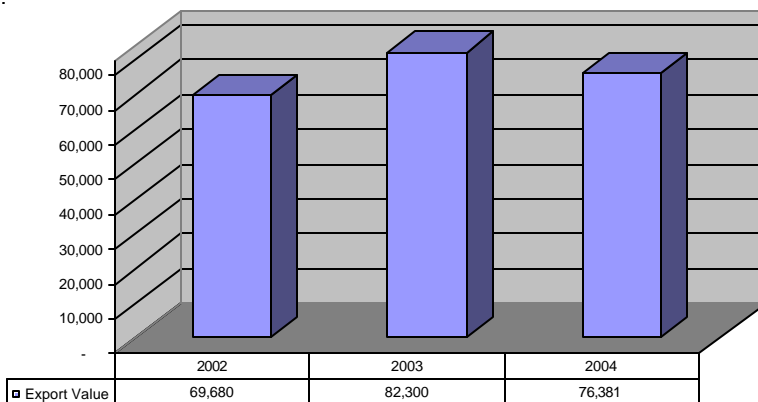
4 Global Fine Jewelry Market

World Imports of Fine Jewelry

Fine jewelry imports worldwide totalled US\$76 billion in 2004 based on data from the United Nations Statistics Division (UNSD). During the period 2002 to 2004, the global demand for fine jewelry products has been erratic, alternately rising and declining as shown in Chart 1 on the next page. Overall growth for the period averaged around 5% yearly.

Please note that the fine jewelry items covered in this section are those falling under HS codes 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. The first four HS codes refer to pearls, precious stones, diamonds and similar items which have not been set, mounted or strung. HS codes 7113 to 7116 refer to articles of precious metal and/or precious stones while HS code 9113 are watch straps, bands and bracelets. Please see Annex 2 for further details on these codes.

Chart 1
World Imports of Fine Jewelry 2002-2004
(in US\$ million)



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: UNSD Comtrade Database

A large proportion of the value of global fine jewelry imports is comprised of unmounted or unset diamonds (HS 7102). This product category accounted for two thirds of world fine jewelry imports in 2004. Articles of jewelry made from precious metals (HS 7113) account for about a fourth of imports for the same year while the rest is made up of pearls, precious stones and metals in various categories. Please see Table 1 on the next page for details.

Only four countries accounted for three fourths of the world fine jewelry market in 2004. These are the United States, Belgium, the United Kingdom and Hong Kong. Of these countries, the U.S. is the biggest buyer, absorbing about 31% of global fine jewelry imports in 2004. Please see Chart 2 on page 18.

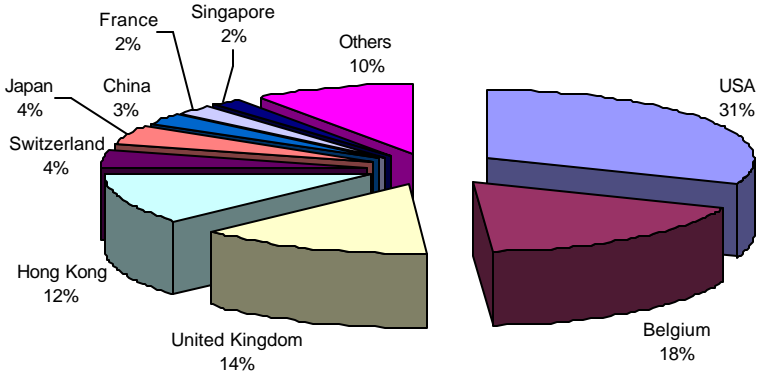
Table 1
World Imports of Fine Jewelry, by Product Line, 2004
(in US\$ '000)

HS Code/Product	Value	% Share
7102 - Diamonds, not strung or mounted	50,086,661	65.58%
7113 - Articles of jewellery or parts of precious metal	19,874,404	26.02%
7103 - Precious, semi-precious stones, not strung or mounted	2,117,820	2.77%
7101 - Pearls, not strung or mounted	1,196,433	1.57%
7115 - Articles of precious metal	912,850	1.20%
9113 - Watch strap, bands, bracelets	875,347	1.15%
7116 - Articles of pearls, precious or semi-precious stones	595,376	0.78%
7104 - Precious, semi-precious stones, synthetic or reconstructed	400,613	0.52%
7114 - Articles of goldsmiths' or silversmiths' wares or parts	321,210	0.42%
Total	76,380,712	100.00%

Note: Please see Annex 2 for the full description of the HS codes and products indicated above.

Source: UNSD Comtrade Database

Chart 2
Major Importers of Fine Jewelry, 2004
(in percentage to total global imports of fine jewelry)

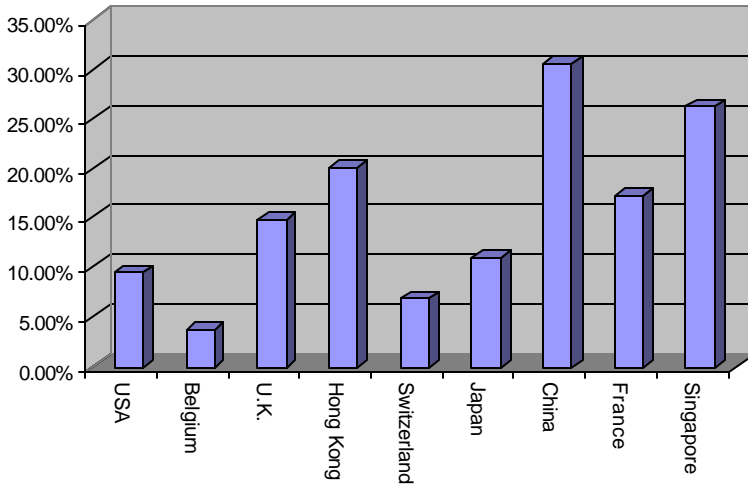


Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: UNSD Comtrade Database

Growth in the imports of the major fine jewelry buying countries has generally been positive from the year 2002 to 2004. Large increases in demand were noted in China, Singapore and Hong Kong. Fine jewelry imports in these countries averaged growth rates of 20% or more annually during the period. Please see Chart 3 on the next page for more information. Also see Annex 4 for more details on the global imports of fine jewelry by country.

Chart 3
Average Growth Rates of Major Importers of Fine Jewelry,
2000-2004



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes. Average growth rate refer to the annual average growth for the period.

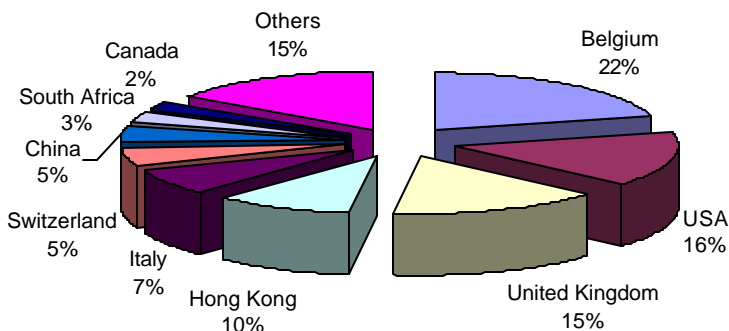
Source: UNSD Comtrade Database

World Exports of Fine Jewelry

Global exports of fine jewelry were valued at US\$69 million in 2004. During the three year period from 2002 to 2004, export levels were highest in 2003 when it reached almost US\$83 million. Overall, growth during the period averaged about 5% yearly.

More than 60% of fine jewelry exports worldwide originate from only four countries, namely; Belgium, the United States, the United Kingdom and Hong Kong. Note that these are the same countries with the biggest importation of fine jewelry in 2004. Belgium is the largest exporter of fine jewelry accounting for about 22% of total world exports in 2004. Chart 4 on the next page shows the major fine jewelry exporters for the year.

Chart 4
World Exports of Fine Jewelry, by Country, 2004
 (in percentage to total global exports of fine jewelry)



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

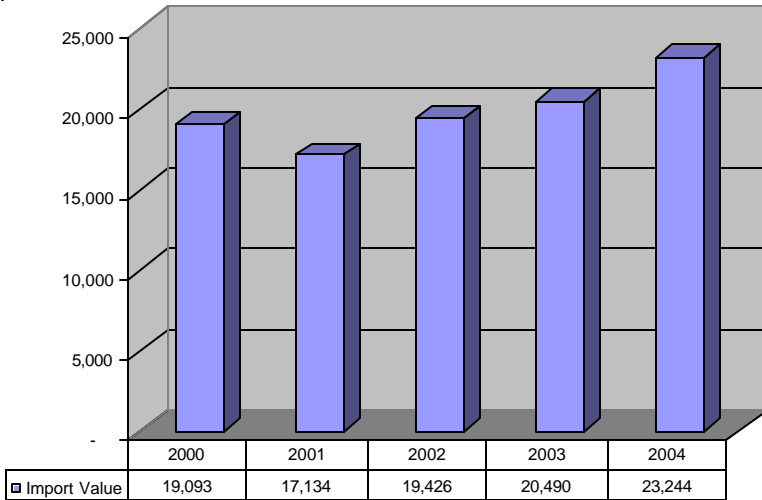
Source: UNSD Comtrade Database

Annex 5 provides more details on the global exports of fine jewelry for the years 2002 to 2004.

U.S. Fine Jewelry Imports

Imports of fine jewelry by the United States showed a continued rising trend in recent years. A decline of 10% was noted in 2001 relative to the previous year but growth recovered and was sustained in the succeeding years. From 2000 to 2004, U.S. fine jewelry imports averaged an increase of almost 6% annually. By 2004, import levels reached US\$23 billion. Please see Chart 5 on the next page for details.

Chart 5
U.S. Imports of Fine Jewelry, 2000-2004
(in US\$ million)



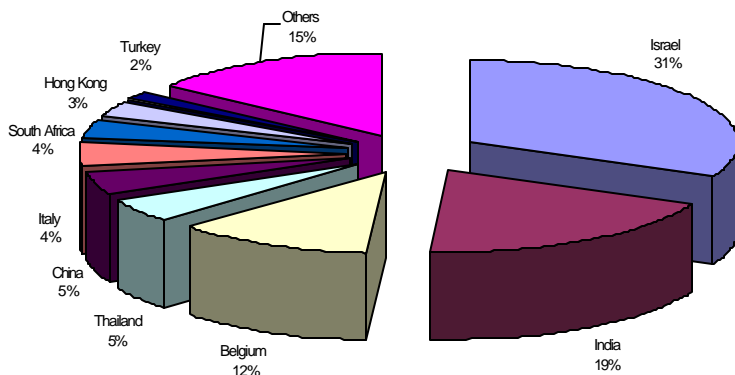
Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Trade Stats Express, OTII, U.S. Department of Commerce

Close to a third (31%) of U.S. fine jewelry imports in 2004 originated from the state of Israel. Other major suppliers for the year include India, with a 19% share of U.S. market, and Belgium with a 12% share. Please see Chart 6 on the next page.

Chart 7, also on the next page, plots the yearly average growth in U.S. fine jewelry imports from its major supplying countries. Most countries except for Italy and Hong Kong posted positive growth patterns. Imports from China and South Africa showed the highest average annual increases of 28% and 23% respectively.

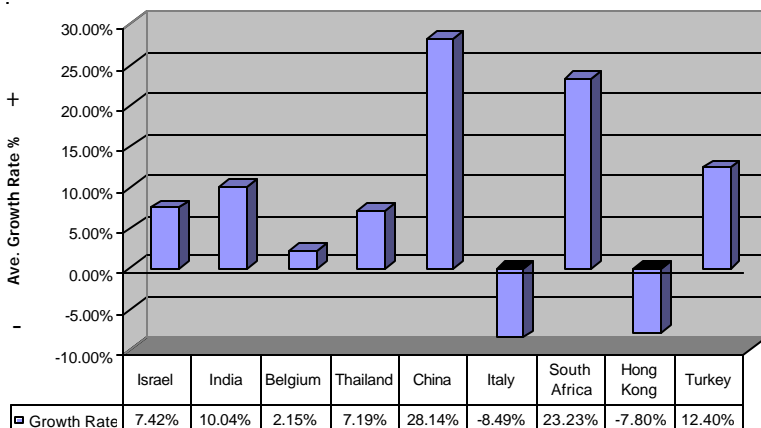
Chart 6
U.S. Imports of Fine Jewelry, by Country, 2004
 (in percentage to total U.S. fine jewelry imports)



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Trade Stats Express, OTII, U.S. Department of Commerce

Chart 7
Average Growth Rates of Major U.S. Suppliers of Fine Jewelry, 2000-2004

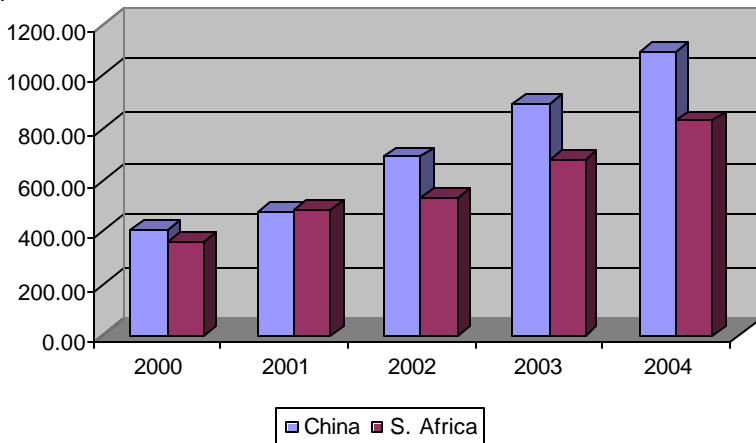


Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes. Average growth rate refer to the annual average growth for the period.

Source: Trade Stats Express, OTII, U.S. Department of Commerce

A closer look at the growth of fine jewelry imports from China and South Africa into the U.S. show substantial year to year increases, particularly for China. In a period of about four years, from 2000 to 2004, imports of fine jewelry from China grew by more than two and a half times. Imports from South Africa increased by 2.28 times during the same period. Please see Chart 8 below.

Chart 8
U.S. Imports of Fine Jewelry from China and South Africa,
2000-2004
(in US\$ million)



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes. Average growth rate refer to the annual average growth for the period.

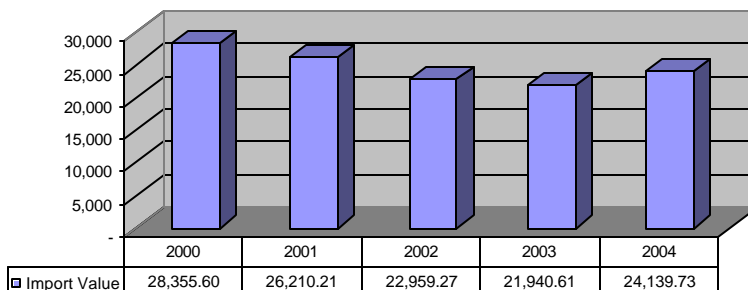
Source: Trade Stats Express, OTII, U.S. Department of Commerce

Please see also Annex 6 for details of fine jewelry imports by the United States.

European Union Fine Jewelry Imports

Fine jewelry imports of the 25 nation European Union totaled Euro 24 billion in 2004. For most of the five year period from 2000 to 2004, fine jewelry importation of the EU25 has been declining, with an increase noted only in 2004. Overall growth for the period averaged a negative 4% annually. Chart 9 below shows the trend in EU25 fine jewelry imports.

Chart 9
EU25 Imports of Fine Jewelry, 2000-2004
(in Euro million)

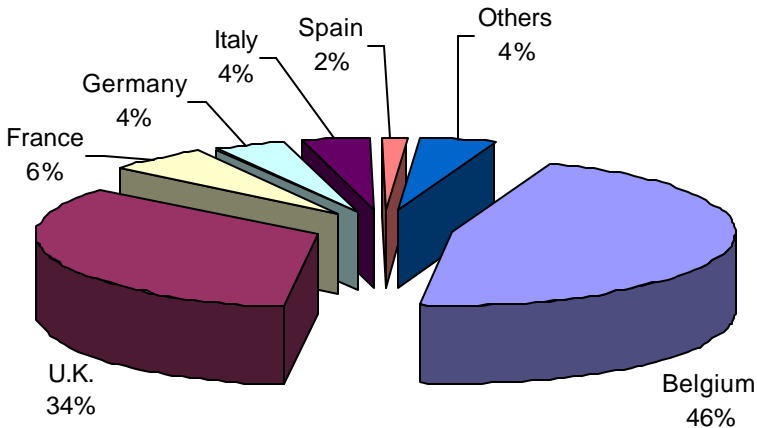


Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Export Help Desk, External Trade, European Commission

Two countries, Belgium and the United Kingdom, account for 80% of the EU25 imports of fine jewelry in 2004. Belgium is the biggest importer, comprising 46% of total EU25 fine jewelry imports for the year while the U.K. accounted for a third. Please see Chart 10 on the next page for more details.

Chart 10
EU25 Imports of Fine Jewelry, by Country, 2004
 (in percentage to total EU25 fine jewelry imports)



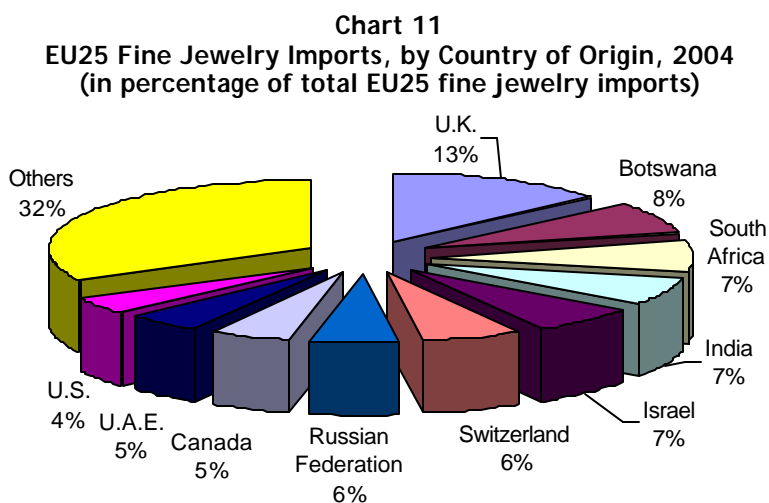
Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Export Help Desk, External Trade, European Commission

Growth in fine jewelry imports among the major EU25 buying countries from 2000 to 2004 showed mixed patterns. Most countries either declined or stagnated. Only two countries, the United Kingdom and Spain, showed positive growth trends but their yearly average increases during the period were modest, 6% for the U.K. and 4% for Spain.

More substantial growth were noted in the fine jewelry importation of two smaller EU25 member nations. Luxembourg exhibited an average increase of 57% yearly in fine jewelry imports from 2000 to 2004 while Latvia had a growth of 21% annually for the same period. The level of imports from these two countries, however, are still relatively low ranging from Euro 12 million for Latvia to Euro 47 million for Luxembourg in 2004. Annex 7 provides details on the fine jewelry imports of some of the EU25 nations.

Major sources of fine jewelry for the EU25 are a mix of countries from various regions including nations within the European Union. The United Kingdom is the biggest supplier with a 13% share of the market in 2004. Other major supplying countries include Botswana, South Africa, India, Israel, Russia, Canada, the United Arab Emirates and the United States. Please see Chart 11 below.



Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

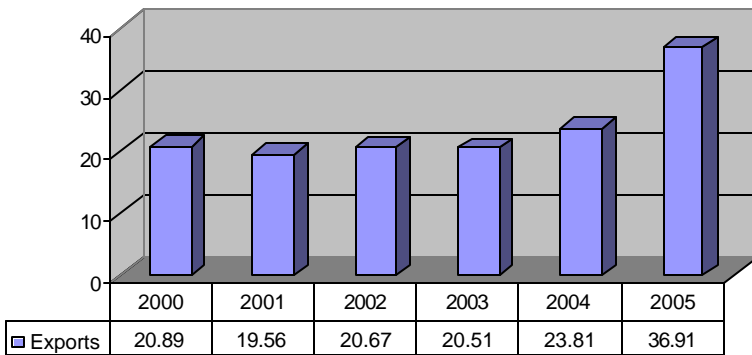
Source: Export Help Desk, External Trade, European Commission

Among the suppliers of fine jewelry to the EU25, a few countries showed substantial growth in the value of their exports to the region. Purchases of fine jewelry by the EU25 from Botswana increased by an average of 147% annually from 2000 to 2004. Canada and the United Arab Emirates also had significant yearly growth rates in fine jewelry sales to the EU25, averaging 60% and 47% respectively for the same period. Annex 8 provides details on the performance of major suppliers of fine jewelry to the EU25 nations for the period.

Philippine Fine Jewelry Exports

Fine jewelry exports of the Philippines amounted to almost US\$37 million in 2005, an increase of 55% from the previous year's level. Since 2003, the industry has managed to sustain export growth and break the pattern of erratic performance of the prior years. The export level attained in 2005 is the highest so far for the industry since the year 2000. Overall growth for the period 2000 to 2005 averaged about 14% yearly. Please see Chart 12 below.

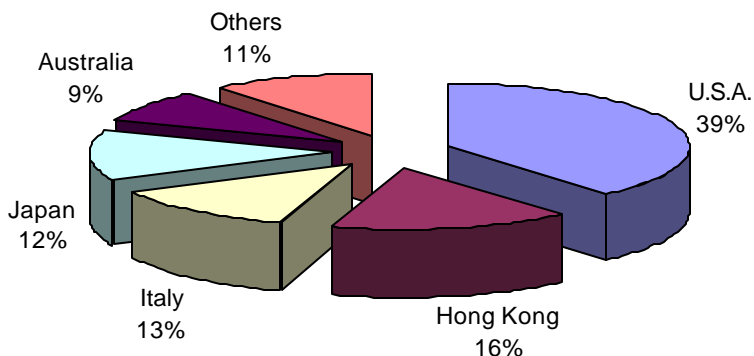
Chart 12
Philippine Fine Jewelry Exports, 2000-2005
(in US\$ million)



Source: Department of Trade and Industry

In 2005, the United States was the largest market for the Philippine fine jewelry sector, absorbing 39% of industry exports for the year. Other major markets include Hong Kong, Italy and Japan. Collectively, these countries and the U.S. account for 81% of the foreign market for local fine jewelry in 2005. Please see Chart 13 on the next page for details.

Chart 13
Philippine Fine Jewelry Exports, by Country, 2005
(in percentage to total Philippine fine jewelry exports)



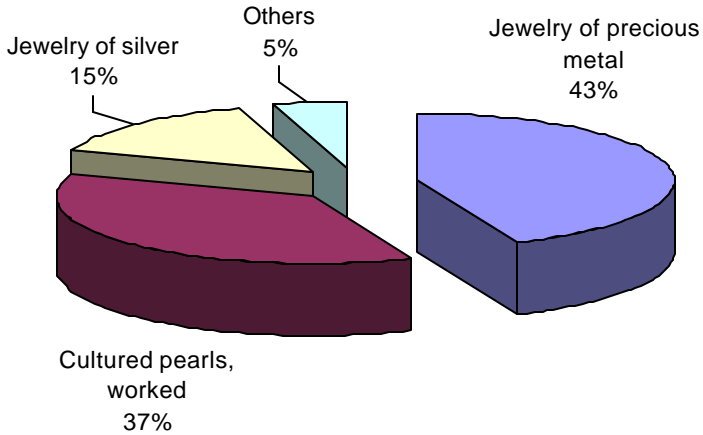
Source: Department of Trade and Industry

It should be noted that over the past years, there has been some slight variations on the countries that top the list of destinations for Philippine fine jewelry exports. For the years 2002 to 2004, Hong Kong was the largest market. In the year 2000 and 2001, it was Japan. Please see Annex 9 for details on Philippine fine jewelry exports from 2000 to 2005.

By product type, jewelry exports are concentrated in only a few product lines. For 2005, about 80% of total fine jewelry exports were accounted for by jewelry of precious metal and worked cultured pearls. Jewelry made of silver comprised about 15% of industry exports for the same year. Please see Chart 14 on the next page.

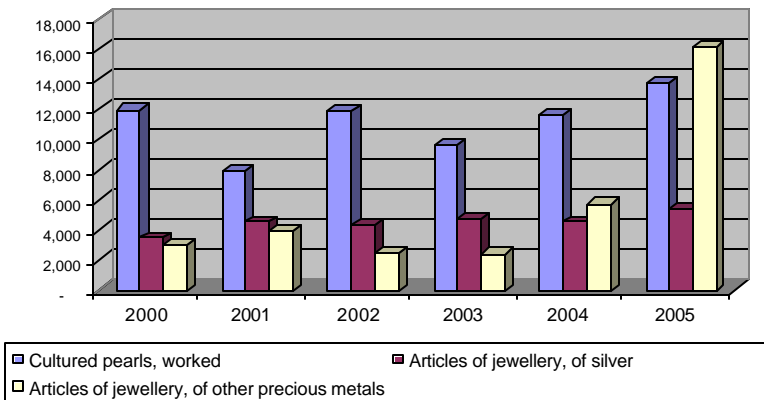
Among the major jewelry product lines exported, articles made of other precious metals exhibited the fastest growth rate from 2000 to 2005, averaging an annual increase of 62% for the period. Much of the growth of industry exports in 2005 can be attributed to the steep rise of 181% of sales for this product category during the year. Please see Chart 15 on the next page.

Chart 14
Philippine Fine Jewelry Exports, by Product Line, 2005
(in percentage to total Philippine fine jewelry exports)



Source: Department of Trade and Industry

Chart 15
Exports of Major Philippine Fine Jewelry Products
2000 to 2005
(in US\$ '000)



Source: Department of Trade and Industry

Compared to other Asian countries, the Philippines still lags behind in terms of fine jewelry exports to the United States and the European countries. In the U.S. market, the country accounts for only .05% of fine jewelry imports in 2004 as shown in the table below. India has a large 19% share of the U.S. fine jewelry market. Thailand and China also have significant export levels.

Table 2
U.S. Imports of Fine Jewelry from Selected Asian Countries,
2004
(in US\$ '000)

Country	Value of U.S. Fine Jewelry Imports	% Share to Total U.S. Fine Jewelry Imports
India	4,494,824	19.34%
Thailand	1,124,099	4.84%
China	1,092,411	4.70%
Hong Kong	726,471	3.13%
South Korea	78,491	0.34%
Singapore	16,723	0.07%
Vietnam	12,486	0.05%
Philippines	10,829	0.05%
Malaysia	10,128	0.04%
Taiwan	9,800	0.04%

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Trade Stats Express, OTII, U.S. Department of Commerce

In the European market, the Philippines accounts for only 0.03% of fine jewelry imports by the EU countries in 2004. India is the the leading Asian supplier of fine jewelry to the region, followed by China, Thailand and Hong Kong. Please see Table 3 below.

Table 3
EU25 Imports of Fine Jewelry from Selected Asian Countries,
2004
(in Euro '000)

Country	Value of EU25 Fine Jewelry Imports	% Share to Total EU25 Fine Jewelry Imports
India	1,617,272	6.70%
China	1,010,603	4.19%
Thailand	749,642	3.11%
Hong Kong	689,466	2.86%
Japan	96,785	0.40%
Vietnam	58,005	0.24%
Indonesia	26,713	0.11%
Singapore	18,464	0.08%
Taiwan	15,997	0.07%
South Korea	14,188	0.06%
Malaysia	12,780	0.05%
Philippines	6,795	0.03%
Myanmar	3,352	0.01%

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: Export Help Desk, External Trade, European Commission

5 Sectoral Profile

As in previous reports, the Pearl2 Project conducted a survey of members of the Guild of Philippine Jewelers to gather and update the profile of the industry. A total of 31 members responded to the survey questionnaire which was conducted around the third quarter of 2005. The number of respondents represent about 40% of the Guild's membership.

The key findings of the survey are presented in this section. Please note that some survey questions have elicited multiple responses from respondents so that in these cases, the total responses may not add up to 100%. Also, where appropriate and where data is available, references to the 2004 survey results are made.

Date of Establishment

About 40% of respondents were established about 11 to 15 years ago. Close to 20% have been established within the last five years while 16% are from 6 to 10 years of age. A fourth of surveyed firms are much older, having been established for more than 20 years ago. The rest did not respond to the question.

Company Set-up

Small and medium sized enterprises dominate the fine jewelry respondents. Small firms comprise 45% of the total sample while medium companies account for 29%. About 16% are micro sized firms. Only one respondent was noted to be large in size. Last year, more than half (55%) of respondents were small-scale businesses which micro-size companies comprise about 18% of the sample. Firms classified as medium-size accounted for 14%.

By type of organization, two thirds of surveyed firms were set up as corporations while the remainder were sole proprietorships. In the 2004 survey, majority or 68% were also corporations.

Ownership and Management

Among sole proprietors, men slightly outnumber women at a ratio of 60% to 40%. Half of the single proprietor owners have a college degree with 10% also getting post graduate diplomas. The rest had some college education but did not finish their courses.

For corporations, males constitute 47% of the chairpersons while females account for 33%. The rest gave no answer to this question. Slightly more than half (52%) of Chair persons finished college and another 19% also had post graduate degrees. About 10% only had some college education. Female board members of corporate firms slightly outnumber men (53% vs. 47%).

Company Presidents among respondents are mostly male. Women Presidents account for only about a third of the sample firms. Most Presidents are well educated with almost half (48%) being college graduates and another 19% having further post graduate degrees. Among other management positions, females occupy more than two thirds (69%) of the positions.

In last year's survey, findings as to the gender of the sole proprietors and corporate Chair persons are similar as to the present study. However, there was a more equal distribution of male and female Presidents last year. Most Chair persons and Presidents last year were also well educated, majority having a college degree and some with post graduate education.

Product Lines

About 36% of the firms surveyed manufacture sterling silvers like bracelet, earrings, necklace, pins and brooch. Another 32% produce other fine jewelries. Other products manufactured consist of colored stone jewelry, diamond jewelry, gold and pearl jewelry and other fashion jewelries.

Last year, gold jewelry items comprised the bulk of the respondents' product lineup. More than two thirds (68%) of the firms surveyed produced gold jewelry. Silver jewelry was produced by 27% of the firms and 18% manufactured articles with pearls.

Facilities

Sizes of business premises of respondents vary. Forty-five percent (45%) of the respondent firms have business areas ranging from 100 to 250 square meters. Companies with over 250 square meters premises account for 32%. Some 23% have operating space of less than 100 square meters. Majority (81%) of the surveyed firms are located in commercial areas. About three-fourths rent their business place. Only 19% own their premises.

Findings from last year's report are similar except for the size of business premises. Only a few firms indicated the size of their business areas last year which precludes any significant comparison with this year's survey findings.

Employment

The thirty one firms surveyed had a total direct employment of 947 workers at the time of the survey. The work force is predominantly male who comprise 72% of the total labor. Close to 60% of workers are in production. The others are distributed among office and administrative functions (19%), quality control (9%), marketing (8%) and R & D (4%).

All production workers are male. Production supervisors are also predominantly (87%) men. Most technical positions (61%) are also held by male workers. Women are the majority in quality control (77%), office and administrative work (69%) and marketing (61%).

Women enjoy a relatively higher wage rate than men among surveyed firms. The average monthly salary of female personnel is around Php8,870.00 compared to the average of Php8,512.00 monthly for males. On a daily basis, wages average Php403.00 for women and Php387.00 for men.

Last year, there were 764 direct employees among the twenty two firms surveyed. As in this year's report, most workers were also male. About 69% of the total labor force then were in production; 13% in administration; 7% in marketing; 6% in quality control; and 5% in technical work and R&D. Males outnumbered female workers in production and technical positions. Women were the majority in quality control, marketing and administrative work.

Subcontractors

Majority of the fine jewelry producers rely on their in-house resources for production. Only 23% are engaged in subcontracting. Companies who outsource work delegate an average of 47% of their workload to their subcontractors. The companies subcontract in all stages of the work with majority (71%) outsourcing work in production. Other work stages subcontracted are in finishing (43%), pre-production (29%) and other work (29%).

Firms that outsource hire an average of 2 subcontractors a year with twenty workers per subcontractor. Majority of subcontractors engaged are males. Most firms (71%) who outsource work get their subcontractors from within the region.

Fine jewelry firms usually provide assistance to subcontractors. The support they provide to the subcontractors in order of importance are (1)skills training, (2)credit/financing, equipment/tools and (3)product development. Problems, however, still persist despite the assistance extended to subcontractors. The common difficulties the firms face with subcontracting, in order of magnitude, are as follows: (1) date of delivery, (2) quality of work and (3) reliability.

Findings in last year's survey as essentially the same. Only 23% of respondents last year were into subcontracting. These firms subcontracted all aspects of their work. Support given to the subcontractors and the problems encountered with them are also similar to this year's results.

Sources of Raw Materials

Raw materials used by respondents are usually sourced locally. About 64% of the raw materials used by the companies are locally sourced. Primary materials utilized for fine jewelry are gold (used by 65% of firms), silver (39%), diamonds (39%) and pearls (26%). Other materials include alloy, colored stones, semi-precious stones and others.

About 71% of the companies have their own source of materials. Some 36% source from the open market. For locally procured materials, major sources include Metro Manila and Bulacan province. Imported items are sourced mainly from Hong Kong and Europe. The foremost problems with raw materials, as noted by respondents, are quality and availability. Other issues are high prices and late delivery.

Respondents last year also procure most of their materials locally. However, there was a bigger proportion of companies (65%) buying from the open market compared to this year's survey. Availability was also the primary problem with materials last year followed by pricing, delivery and quality.

Mode of Production

Production processes for most respondents (64%) are semi-mechanized, the remainder employ manual means. All other operations are usually done manually by most firms, including materials handling (71%), packaging (77%) and quality control (77%). Only one company indicated being fully mechanized in production, packaging and quality control work.

Last year, findings show similar results, although there were fewer respondents who indicated the mode of their operations.

Capacity Utilization

About 23% of the firms operated at full capacity at the time of the survey while two thirds said that they had zero utilization rate. The rest had utilization rates ranging from 50% to 70%. Average capacity use for respondents was placed at around 88%. The reasons noted for underutilization are (1) lack of raw materials, (2) personnel limitations, (3) lack of equipment/tools and (4) limited space.

In last year's report, most firms (86%) also operated below full capacity with only 14% of the respondents operating at maximum capacity during the time of the survey. The major reasons for capacity underutilization were lack of sufficiently skilled and reliable workers and limited equipment.

Quality Control

Most respondents (58%) continue to rely on specifically assigned personnel to do quality control work. Close to half (48%) follow standard procedures while 39% use internal resources and equipment. Only 13% reported using outside testing facilities.

Problems in quality control are often reported in the production process. Some 58% of surveyed firms indicated QC issues in this area while 26% mentioned quality concerns in raw materials. Findings in last year's report show similar trends.

Product Development

A large majority (81%) of firms depend on their internal capabilities for product development. A third also rely on external resources. The major sources of information for product development are designers and trade fairs. About 61% of

respondents relied on these sources. Other product design resource used include publications (58%), buyers (45%) and the internet (39%). Design concepts are based mainly on buyer's specifications as noted by 87% of firms.

About 39% of the companies have internal R&D facilities while about 42% said they had none. Half of the firms surveyed are satisfied with the present information they have for product development.

In last year's survey, only 41% of respondents said they had internal R & D capabilities. Main sources of design concepts were the usual trade fairs and designers. Slightly more than half (56%) of firms from last year said they were dissatisfied with their current sources for product development information.

Market Coverage

Sales of respondents are geared towards the local market. An average of about 59% of sales are made domestically while 41% come from exports. About 42% of surveyed firms only sell locally while 26% export all their output. A large proportion, averaging 84%, of domestic sales are made in the Metro Manila area while an average of 10% are made in the Visayas.

A large majority of companies (81%) claim to target the high end market for fine jewelry. Close to half (48%) also sell to the middle market segment while only 6% include the low end market in their sales.

Last year, more sales were also made in the local market. About 29% of firms sold exclusively to domestic buyers while only 14% exported all of their products. Respondents also targeted both the high and middle market segments.

Export Market

The United States and Europe remain the major export markets for fine jewelry firms. About 32% of respondents said they sold to U.S. based buyers while 27% also exported to Europe. A smaller proportion of firms (18%) exported to Japan while 21% marketed to other Asian countries. Respondents continue to rely on their traditional markets as only 17% said that they exported to a new country in 2005. In last year's report, key markets for respondents included the United States (40%), Europe (33%), Japan (9%) and Hong Kong (9%).

Market Access

Respondents employ a variety of means to source foreign buyers. About a third rely on their own contacts, 19% source buyers through trade fairs, 16% from referrals, 13% through their web sites and 6% from business missions. Trade promotion activities are done mainly by attending trade fairs as reported by half of surveyed firms. Other activities include distribution of brochures (32%), use of web site (23%) and business missions (6%).

In the local market, majority of companies (70%) have their own stores to sell their products. About 39% go on direct selling, 17% use boutiques and another 17% avail of traders to market locally.

Last year, trade promotion activities for the export market showed similar results. On the local front, however, most firms then (41%) sold through boutiques. About 27% undertook direct selling, 18% had their own stores, 18% sold in department stores while 14% used traders.

Competitors

China was reported as a major competitor by 39% of respondents while 28% indicated Thailand. Other competing countries mentioned are India, Indonesia, Republic of Korea and the U.S. Among the reasons cited as strengths of competing countries are: low labor cost, low prices and good design.

In the previous survey, Thailand was mentioned as the biggest competitor by respondents, closely followed by China. Hong Kong, Vietnam, Italy, Mexico and Switzerland were also listed as competitors.

Sales

Exports of respondents generally remain low with a third exporting below US\$50,000 in 2004. About 17% sold between US\$300,000 to US\$500,000 while about 11% had exports between US\$500,000 to US\$3,000,000. Please note that while the firms were surveyed in 2005, the yearly sales they indicated during the survey refer to their 2004 revenues.

Local sales for 2004 were generally below Php10 million. About 30% sold below Php1 million, 22% sold between Php3 million and Php5 million, 17% had local sales between Php1 million and Php3 million and 13% sold from Php5 million to Php10 million. A few firms had significant domestic revenues. One respondent sold between Php20 million to Php25 million. Two firms had sales of from Php70 million to Php100 million while one company sold between Php100 million to Php200 million.

Export sales indicated in the previous survey showed almost similar trends. About 33% grossed less than US\$55,000 in 2003; 11% sold from US\$55,000 up to US\$100,000; 22%, US\$500,000 to US\$1 million; and 33%, US\$1 million to US\$3 million.

For local sales in 2003, two respondents (9%) registered sales of Php15 million to Php20 million while one company reported sales of Php100 million to Php200 million. At least 56% of respondents sold from Php3 million to Php10 million, while 21% had local sales of Php1 million or less.

Financing

As in last year's survey, respondents continue to rely heavily on their own funds to finance their operations. About 87% said they funded their own activities, up from 73% who did the same last year. A smaller proportion of 13% utilized credit lines from banks and another 13% also availed of private money lenders.

About half of company funds are used for production work. Slightly more than a fourth (27%) of the firms' budgets are used for administrative functions while 12% goes to marketing. The balance of 7% is used for R & D. Last year, most funds (46%) were also spent on production. Some 27% were used in administration and overhead expenses and 9% on marketing. Respondents last year spent a higher ratio of funds (18%) on R & D.

Source of Assistance

Only five (16%) out of the thirty one respondents said that they received assistance from external parties. Of this number, 60% indicated CIDA, through the Pearl2 Project, as providing support. Other agencies mentioned include CITEM, BETP, CESO, CBI and Philexport. Last year, only two firms (9%) reported receipt of aid from a foreign developmental agency while four firms (18%) obtained assistance from government.

For more information, please see Annex 10 which provides a summary of the key findings from the Pearl2 survey of fine jewelry firms.



Production Management

Pearl2 conducted a Production Management Assessment of the fine jewelry sector from October 2004 to March 2005 covering members of GPJ. Data was gathered through a survey of 16 fine jewelry manufacturers. In addition to the survey, Pearl2 consultants also conducted interviews with representatives of 10 firms from the said BSO. A production management conference was also held involving members of GPJ, as well as plant visits to three companies to gather additional data and present preliminary findings.

This section presents some key findings on the production management practices of fine jewelry firms. It is not meant to be a comprehensive report on the production management system of the fine jewelry industry. The findings serve to provide indications on the present status of production management in the sector and help identify areas where Pearl2 can provide assistance to the industry. This section can also be useful in understanding the basic flow of the manufacturing process for fine jewelry on an industry level.

Overview of the Fine Jewelry Manufacturing Process

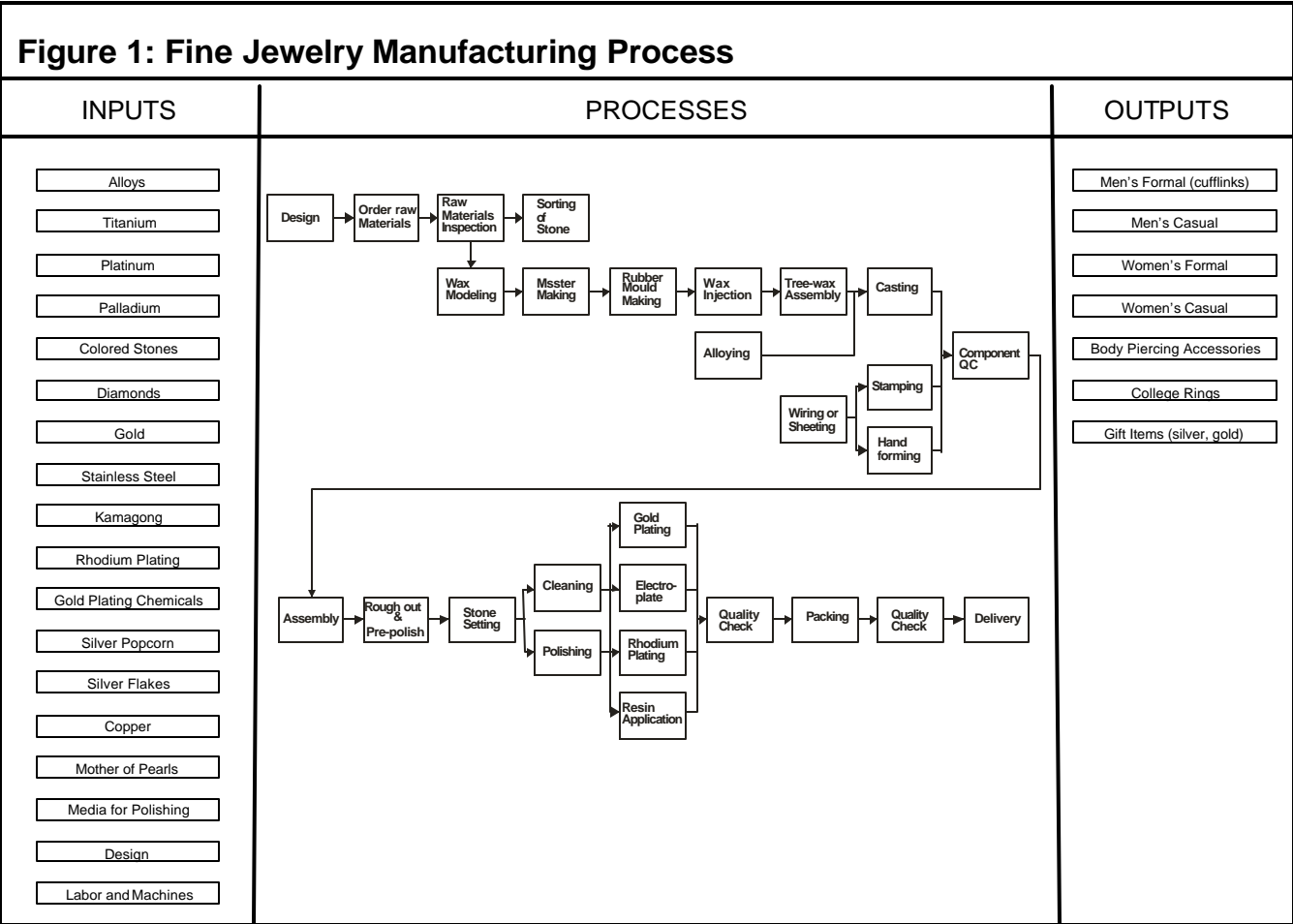
The manufacture of fine jewelry covers a number of steps as indicated in Figure 1 on the next page. The figure is roughly divided into the inputs, processes and outputs of the industry. Inputs may be defined as the tangible materials that undergo a transformation process to generate finished goods that satisfy customers. The first column in Figure 1 enumerates the common inputs used by the fine jewelry industry. Common materials used include precious metals, precious and semi-precious stones, pearls and other items like leather or non-precious metals as part of the design configuration.

Processes, on the other hand, are the consecutive steps performed to change basic materials into different fine jewelry items. This is covered in the middle column of Figure 1. Some of the specific activities can be broadly categorized into those that fall under casting operations and those that are part of the stamping process.

Products of the industry cover fine jewelry items in a variety of designs for different functions such as rings, necklaces, bracelets, etc. These are indicated in the last column of the figure under outputs.

Inputs

The major raw material inputs of the fine jewelry industry can be classified as metals and stones. Metals used by the industry are gold, silver, copper, platinum, titanium, palladium, and rhodium.



Most fine jewelry firms work on gold, although a number of gold users in Meycauayan are said to have shifted to silver through the past years. In Baguio, majority of manufacturers use silver. Silver jewelry are also used only by a few exporters based on survey and interviews done during this study.

The most commonly used stones, based on the survey conducted among jewelry firms, are diamonds, followed by colored stones and gems, and pearls. Metals are oftentimes enhanced with precious stones such as diamonds, pearls, and colored stones. There are two types of pearls used in the industry, the south sea and fresh water pearl. South sea pearls are rarely used since it is too expensive. Fresh water pearls are more frequently used.

Industry members tend to specialize on certain metals and stones. Most firms or 60% of companies surveyed in their Production Practices use gold. About 35% utilized silver while 5% use other metals. For stones, 46% of respondents use diamonds, 38% are into colored stones and 15% use pearls.

Processes and Methods

The manufacturing process for fine jewelry starts with the design of the product. After the design has been drafted, raw materials are acquired and inspected. Stones are graded and sorted accordingly. There are two methods involved in making the jewelry: Casting and Stamping.

In casting, a master model is created through wax modeling or directly using metal. Wax is more frequently used since it is more manageable to form than metals. The wax model or metal model is vulcanized into rubber which is later removed, forming the rubber mold. Wax is then injected into the rubber mold, to

form the design. The wax is hardened and removed from the mold. Tree-wax assembly involves the assembly of several pieces of the wax mold into a central wax branch. This would be used for the casting.

The wax tree is placed into a flask, where a mixture of water and investment powder is poured in. The investment powder is hardened then steamed to melt and induce the wax out of the flask. The invested flask is being heated while the mixture of gold/silver and copper is being melted (alloying). The alloy is then poured into a spinning casting machine to force the alloy to flow into the mold (casting). The metal tree is formed when the metal hardens. The tree is separated from the mold and the components are detached from the tree by sprue cutting.

The stamping process begins with alloying or the mixing of fine metals and copper. The alloy is melted to shape it into a bar or ingot. The bars or ingots are transformed into wires or sheets depending on the desired size and shape. Manual hand forming is typically used to transform wires or sheets to desired shapes. A power or hydraulic press can be used to transform the wires or sheets into components based on the desired design, size and weight.

The components are soldered into its final form or design. The assembled products are polished until the natural shine comes out. If there are stones in the design, stone setting is done. Again, the product is polished and cleaned. When the products are free from foreign materials, it is now ready for plating or resin application. Quality check is again done on the plated/coated materials. The materials are packed, quality checked again, and delivered to the client.

Finished Products

As mentioned previously, fine jewelry products cover articles of personal adornment using precious metals and/or precious or semi-precious stones, pearls or their combinations. Examples of finished fine jewelry products are rings, earrings, necklaces, bracelets, brooches, and pendants, religious or other medals and insignia; and articles made of precious metals with or without stones for personal use of a kind normally carried in the pocket, handbag, or in the person, e.g. chain purses, powder boxes, cigar cases.

Wares and related items such as tabletops and office articles made of precious metal like gold or silver are also part of the industry's product line. However, gold or silver plated items are not considered part of fine jewelry.

Manufacturing System and Practices

Companies in the fine jewelry industry may differ in their production management practices. The practices reported here are based on the Pearl2 survey of fine jewelry firms and plant visits, and might not necessarily be the common practice of all companies in the industry.

Production System

The industry's production system is basically made to order. Subcontracting activities are minimal which most firms preferring to undertake the production work themselves. Outsourcing work is usually done by the smaller firms who have limited resources. Based on a survey of fine jewelry firms, majority of the industry players are serving the local market and are not engaged in complete manufacturing activities (as indicated in Figure 1).

Capacity

Companies generally have difficulty in defining their true production capacity due to the variety of designs being produced. However, from the survey conducted, companies can be classified in three major categories in terms of the volume of their output per month.

About 80% of the 16 firms surveyed are low volume producers with less than 500 units of output per month. Companies that produce from 500 to 5,000 units monthly or medium producers comprise 10% of the sample while the remainder are the high volume manufacturers with outputs of over 5,000 units monthly.

Low volume companies are usually those who provide custom-made jewelry items only to the local market. Medium companies are those partly catering to the export and local market. Large companies are mostly into the export business. There were large variations noted in the capacities of some respondents during their peak and lean periods. About half of the firms surveyed indicated that their peak capacity can range from 100% to 500% more compared to their lean period production.

Production Cycle Time

Production cycle time for respondents ranges from 1 day up to 30 days depending on the volume and complexity of the orders. Typically, high volume requirements involve products with less intricate designs than a medium volume order. A low volume firm has the most intricate designs. From the data gathered, the production cycle time is more dependent on the intricacy of the design rather than the volume of the order.

Companies with low volume requirements and very intricate designs usually take a day to a week to finish an order. High and medium volume companies with less intricate designs can finish a batch in 1 to 2 weeks. Firms with high volume outputs also have reduced cycle time due to investments made in equipment and better plant layout.

Seasonality of Production

The manufacture of fine jewelry shows an increase in activity towards the last few months the calendar year. Production starts to increase around September and reaches its highest level by December. There is a secondary peak in production during the year in the months of February and March. Production was observed to be lowest during the month of July.

During peak months, firms augment their work force with contractual personnel. They also resort to overtime work and stretch out the work week to cover seven days. In some cases, additional work is subcontracted to other firms.

Working Period

Regular work period for the industry during lean periods is eight hours a day, five days a week. During peak season, companies may increase the work week length to 6 days. Workers are usually given 15-minute break in a day, aside from the lunch period. Some 60% of the companies surveyed have overtime work from 1 to 3 hours a day to cope with extra work during peak season.

Scheduling

About 90% of the companies surveyed have a production scheduler. Orders are scheduled on a first-come, first-serve basis when a purchase order is in place. However, some orders from regular clients are prioritized and are classified as rush orders. This practice is common for local and foreign clients.

Some firms have counterparts in foreign countries that distribute their products. These companies can be given a list of fast selling items by their counterparts which they can schedule to produce in advance.

Tasks, such as casting and master mold making, are usually assigned to workers based on skill. For simpler tasks, such as sanding and polishing, these tasks are assigned based on the workload of the personnel. Absenteeism is reportedly the common disruptor of production schedule.

Deliveries

Delays are common occurrences among fine jewelry firms surveyed. At least 15% of the orders are delayed according to 60% of the survey respondents. Some companies have indicated that orders are delivered late by at most one week beyond the due date. Despite the firms' allegedly checking up on production capacity before orders are taken in, late deliveries still happen.

The most common reason for delayed deliveries is rework as reported by about 62% of respondents. A fourth of surveyed companies indicated rejects as the cause of delays. Other reasons cited include absenteeism, defective raw materials, production overload, unavailable raw materials and shipping problems.

Production Monitoring

Few companies made use of production and scheduling forms and boards to schedule and monitor orders. Those who use such forms typically belong in the medium and large volume requirements category. Other companies have informal ways of recording and scheduling their production. These are done using notebooks, blank papers, and the likes. Typically, these are companies with low volume requirements.

The most common type of recording form being used among respondents is the one used for monitoring material usage. This is typical for polishing, sanding, assembly and cleaning tasks. This form also controls movement of materials through the different processes. For companies under the low volume categories, jobs are issued to piece-raters and are monitored from the start up to completion of each item.

Most respondents generally do not have a real measure of production performance. Typical measure of performance used is usually based on output or units produced. Reliance on this measure alone does not reflect how well the production operation has been performing. A measure based on output alone will simply indicate changes in the volume of production caused by variations in orders.

Manufacturing Cost

More than half (56%) of manufacturing costs for fine jewelry is accounted for by raw materials. Labor comprises 20% of total costs while administrative expenses have a share of 11%. The remainder is comprised of supplies, production overhead, maintenance and research and development.

Raw Materials

About 56% of raw materials used by fine jewelry firms are in semi-processed form. These include gold, silver, and precious stones. Some 13% of materials are unprocessed and 31% are in processed form. Gold and silver are the more common locally sourced raw materials used by the fine jewelry industry. Platinum and copper alloys are sourced abroad, primarily because there aren't enough local stock of these metals. A significantly larger proportion of raw material cost goes into the purchase of diamonds and other precious stones from the international market. These imports are made either through a local trader, or by the companies directly importing these stones.

The lead time for local raw materials is less than one week while imported raw materials would take about two weeks. There are no reported problems regarding the arrival time of raw materials from suppliers and they usually come in good condition.

Companies surveyed consistently report that the price of raw materials is their foremost problem area. Gold purchased from the Philippine Central Bank includes the Value Added Tax (VAT), which makes the cost of the material high. Although RA 8502 provides some exemptions to exporting firms, majority in the industry do not benefit from this exemption since only a few are into exports.

Another source of gold is the firm's client. Clients usually provide raw materials for their custom made orders. However, this results to lower profit margin for the jewelers since they can only earn on the labor and not on the materials. They only gain from the volume of job orders.

Aside from price, availability of raw materials is another problem. There are difficulties in the local supply of gold due to restraints of the DENR policies and NGOs which affect mining operations. There are also notable problems with raw material quality. Gold from the Philippine Central Bank are said to be of substandard quality, containing a mixture of metals. Gold from Meycauayan is reportedly much better. A typical problem in gold quality is that it cannot be determined before hand. Only after the gold has been processed, sanded, and polished will impurities be seen. This is costly in terms of labor, materials, and overhead.

Packaging Materials

Packaging is not a major consideration in the fine jewelry industry. Bubble bags, plastic wrappers, and boxes are used to wrap the final products. The main sources of information on packaging are in-house researches, trade fairs and publications. Most packaging materials are specified by the firms' clients.

Inventory Monitoring and Control

Companies in the fine jewelry sector normally do not stock large quantity of raw materials due to the high cost involved. For low volume companies, materials are purchased when orders are confirmed. For medium to high volume firms, they typically maintain only a week's supply of silver and 2-3 days supply of gold.

Gold and silver metals are stored in vaults or other secured places. Some companies use computer programs to monitor inventory, while others do it manually. Only 70% of the firms surveyed has an inventory manager. Ordering of stocks is based on a desired safety stock considering the remaining inventory.

Due to the nature of materials used in fine jewelry production, the companies have instituted a very structured and tight monitoring system of weighing in and weighing out of materials. A tolerable allowance for loss is set for each process. Every time Raw Material, Work-in-Process, and Finish Goods are transferred from one process to another, workers are held accountable for any losses and inconsistencies in the usage of these materials. This method has been an effective method of monitoring material usage. In the finishing section, the worker pays for any lost item based on its selling price. Some companies install cameras in the production area to tighten the security.

The industry has informally accepted a maximum material loss of 10% during production. This value was established by the different companies through informal benchmarking of performance. From the survey of fine jewelry firms, it was observed that most companies (43%) actually incur a materials loss of less than 5%. About 29% have losses from 5% to 10% while some 28% of the companies are incurring a materials loss of more than 10%.

It should be noted that losses in the industry may not be due to pilferage but caused by the dissipation of some metals, such as zinc and other base metals, during the heating process in production. The alloy must be tested if there's really any loss.

Rules on pilferage, absenteeism, and misconduct are clearly laid out to workers among surveyed firms. Any losses are deducted from their salaries. Establishing policies, security measures and penalties to workers can minimize pilferage. In some companies, a policy of allowing 5% of loss allows workers to claim these losses as their right. This means that a worker can claim a material loss of 5% even if there is no actual material loss incurred.

Organization and Personnel

Majority of the jewelry companies started as a family business that grew over time. The owners of these companies have limited background in production management. Thus, management systems are more informal with the owner involved in almost all aspects of operations.

Most fine jewelry companies retain the services of only a handful of highly skilled workers. Typical ratio of contractual workers per regular skilled worker is 1.6 to 1. Usually, this ratio increases whenever peak seasons arrive. These contractual workers are assigned as polishers and sanders. The responsibility of assigning the orders for production and monitoring inventory is usually given to one person. Quality control inspectors usually comprise 1-2 people per firm. An average of seven regular workers are dedicated to product development or sample making.

Survey results show that the production management staff of respondents has been with the companies for 5-10 years. About 71% of these are college graduates, 23% are college undergraduates, and the rest are high school graduates. Their average age is 30 to 35 years old.

Regular workers have also been with the respondent companies for around 5-10 years on the average. This indicates that there is actually a very low turnover of regular employees in these firms. Among regular workers, about 11% finished college, 17% are college undergraduates, 50% finished high school, and 22% finished elementary. Their age averages from 35 to 40 years old.

Compensation

Some regular workers in the fine jewelry business are paid at least 40% higher than the minimum wage. These are the master mold makers, goldsmiths, stone-setters, and the quality control personnel. These workers have developed extensive skills and experience.

For firms with low and medium volume requirements, goldsmiths and stone-setters are typically paid by piece depending on the complexity of the item. These rates are determined by the company and the worker through negotiations. The sample rate of a stone setter is around 8 pesos per stone. These workers can receive a weekly salary from Php3,000.00 to Php7,000.00 per week.

For large volume requirements, these same skilled workers are paid daily, weekly or monthly independent of the quality produced. Their work is more focused on making sample designs or those items that are too complicated to cast. Sample-makers are paid in terms of dayn not output, to avoid rushing the sample.

Those in the polishing, sanding, assembly, soldering, and cleaning are normally contractual piece-rate workers. Piece-rate payment ranges from a few centavos to Php10.00 per piece. Workers are rotated among piece-rate jobs to avoid conflicts because certain jobs are faster to do and have higher rates. Majority of these workers can receive at least Php300.00 per day.

Common benefits received by regular workers among respondents include Social Security System (SSS), 13th month pay, PAG-IBIG, incentive bonuses, medical benefits, vacation and sick leaves.

Subcontractors

Production of fine jewelry is seldom subcontracted. Companies rarely allow external subcontractors to have access to the expensive jewel stones that are used in the product. Some manufacturers of class or corporate rings, whose products are not so critical in terms of design intricacy, do subcontract work. The typical subcontracted processes are in the polishing and plating operations.

Skills Training and Development

Skills in the fine jewelry industry are usually learned through on the job training. Training may take up to a year. Based on a survey of jewelry firms, about a third would rather hire skilled workers than train new personnel. Among the other respondents, 20% said that it takes 1 to 2 months to train new hires and another 20% said it takes longer, from 2 to 4 months, to train workers. Some 13% train their personnel for more than a year while a similar proportion said training last less than one month. For goldsmiths, it takes about three years to become skilled and capable.

Giving of training has always been a risk in the industry. Even if there is a contract covering the training, workers can leave after the contract expires. Others go abroad for a better pay. This has discouraged more companies from giving technical trainings to their workers.

Rejects and Raw Materials Yield

Raw material rejects in the industry are very minor, averaging only some 3%. Only 70% of the companies surveyed reported that they inspect raw materials received. In practice, when some companies accept stones or any material for customized order, they make an agreement with the clients and the stone-setter on the quality of the received stone prior to processing. This way the companies waive any defects on the raw material received.

The industry conducts 100% inspection at the end of every process. Around 7% of rework or rejects happen during work-in-process. After inspection, up to 20% of the finished items have to be reworked. For gold and silver, defects on the material are usually found after the material has been polished. Around 3% of the finished products delivered are returned by the customer. Production yield is estimated to be around 70%. This means that of the total items manufactured; only 70% are of acceptable quality that does not require rework.

Production Process Standards

Fine jewelry firms follow both product and process standards. Process standards are almost never industry-wide standards, but are set by each company. Some large volume companies do perform a time and motion study. However, they do not gather enough samples to be able to set up the required process standards.

Products standards are usually based on client expectations. Since clients deal with the company by having actual samples approved, this approved sample becomes the basis for a final product standard.

Facility Layout and Design

Facility layout among respondents and companies visited is predominantly a process-based and space constrained layout. The process-based is when work orders go from one process to the next in assigned areas of the factory. The process areas are adjacent in the factory floor. About 20% of the company layouts observed have crisscrossing process flows. This leads to a lot of unnecessary movements of materials and prolonged travel thereby increasing production cycle time.

Raw materials and finished goods in the industry do not require very large areas since these are small pieces that could be kept in cabinets or vaults. Raw materials storage takes 5.53% of the total plant area of surveyed firms. Finished goods storage area takes 7.29%. Production area is 67.12% while finishing area is about 20.06% of the total. The production space is usually comprised of a few machines and workers that take up the larger portion of the area.

About 40% of companies surveyed report that they still use the basic layout that they have when the company began. Others have last changed their layout some 2 to 3 years ago. Only space allocation relative to each process has changed through the years. The most common reason for changing layout is the addition of equipment and personnel. Other reasons include increase in production volume, new designs and new process flow.

In fine jewelry manufacture, there is a seeming trade off between ventilation and security. In most companies, the work areas are not well-ventilated, enclosed, and hot. Fans or ventilators could not be used especially in the polishing and sanding because it will diffuse gold/silver dusts that conflicts with dust collectors. Also, having more windows for ventilation could provide means for workers to throw precious materials outside.

Machines and Tools

The fine jewelry industry depends more on tools such as mallets and tweezers rather than large machinery and equipment for its manufacturing operations. Majority of the companies who are exporters or categorized under medium and high volume requirements are engaged in casting and utilized the needed facilities. For companies catering to the local market and those into customized jewelry making, the casting technology cannot be used because the local market prefers one-of-a-kind jewelry. The bulk of local demand is on repair and custom-designs.

Dust collector systems are present only in some medium-sized manufacturers. Small-sized manufacturers cannot afford such systems. Some companies cannot install such machines due to layout and space restrictions. Oftentimes, the dust collector does not work properly leaving dust uncollected. Workers still have to sweep the uncollected dusts.

Most machines among firms who invested in such facilities were acquired way back in the 1970's and 1980's. About 71% of the machines are imported from Germany, Hong Kong, Russia, Taiwan, Denmark and Korea.

Machines and Equipment Maintenance

Among respondents, machines generally run for about 5 to 8 hours daily during lean time and 8 to 12 hours during peak season. There were no reported major machine breakdowns among most surveyed firms. Machines that do fail have done so only about 1 to 4 times every year.

Only 25% of the survey respondents have standard inspection procedure for machines. In general, there is no preventive maintenance for machines. Only 50% of firms surveyed conduct regular inspection. Most inspections are done quarterly or semi-annually. Others perform equipment check only when breakdowns occur. If repairs are needed, it may take up from one day to a week to fix the machines.

Product Engineering and Development

It takes an average of five to six days from design conceptualization to prototyping in the product development process for fine jewelry. Medium and high volume companies have about 2 designers per firm. In the industry, a family member would often study gemology to develop their knowledge on jewelry making.

There is high variation in the number of new designs produced by surveyed companies. About six firms reported making 10 to 30 designs for the whole year. Four respondents said they make from 30 to 75 designs a year while two firms had from 75 to over a hundred designs. Two others made fewer designs of 10 or less in a year. It is not clear how efficient is the turnover for new designs or how many of the designs actually sell.

Companies barely invest in product development. It only comprises 1.85% of the manufacturing cost. Usual sources of design ideas are from publications, trade fairs and from clients. Research and development do not focus on process improvements but more on designs and materials.

Fine jewelry designs are said to be cyclic over time so that companies can reuse old designs. In reusing old designs though, few companies review their production processes and check if it can be improved. For new processes, only few companies conduct process analysis to check whether the new designs are compatible with their current manufacturing process.

Environmental Management

The fine jewelry industry generates waste from its processes, especially in polishing and sanding. This comes in the form of metal dusts and scraps. Due to its high value, metal wastes would usually be collected and reprocessed or reused by companies. Gold and silver scraps and dusts are collected from individual workstations and the floor through sweeping. They can also be recovered by burning collected garbage and sewage.

Collected dusts and scraps are melted and reformed into solid metal bars for reuse. Another source of recovery is through electrolysis by reversing the anodes from the cyanide base solution in gold plating. One company reported a recovery of 100-300 grams of gold from three months cyanide solution. Recovery has even reached as high as one kilo during the firm's peak order season. Investment compound used in casting is also recyclable and may be sold back to vendors.

Some companies, however, do not manage their waste handling system effectively resulting to poor recovery. Workstations and work areas are neither efficient nor conducive for dust collection. Although there are dust-collecting pans in place, the pans are made of inappropriate materials, such as wood where gold dust could easily get trapped. The pans may also be of incorrect shape, e.g. square, where the gold dusts are also trapped in the corners.

Worker Health and Safety

There is still significant room for improvement in terms of working conditions in the fine jewelry industry. For most firms, there is a need to improve ventilation especially in the polishing section while at the same time ensure proper security of the items inside the plant. There is also a need to improve temperature of the work environment, especially for those skilled workers who are involved in delicate work.

Work areas can also be more ergonomically designed, especially for the polishers and sanding process workers. Better workstations can be used to give workers proper posture. This includes improving the seat and work area to allow better movements.



Value Chain Analysis

Structure of the Industry

The structure of the fine jewelry sector includes external linkages to other industries that furnish the raw materials, manufacturing and service requirements. These are the Mining Industry, Pannier Refinery, Gemstone Manufacturers/Suppliers, Pawnshops, Jewelry Shops and Wholesalers. (Please see Annex 11 for the flowchart of the fine jewelry industry linkages.)

The mining industry plays a major role at the front end of the supply chain. Mining firms provide the ore that contains precious metal content of either gold or silver. From the mining industry, the gold/silver nuggets are sent to the pannier refinery, which processes the raw material and transforms the nuggets of precious metal into finished gold or silver for use by jewelry firms. Gold or silver may also be imported in finished form.

The gemstone manufacturers, who are usually located overseas, constitute the second important tier of the supply chain for jewelry items that require the use of gemstones. The gemstones are imported by the fine jewelry producers, by traders or by agents. Fine jewelry firms design their products and process the raw materials into the various jewelry sets or pieces. Once a product is finished, this is sold locally or exported to direct retail brand outlets abroad.

In the local market, the normal distribution channel for jewelry would be jewelry stores and shops, and through personal agents or “corredoras” that sell the items by piece to end consumers. The pawnshop business likewise services a portion of the market.

The Fine Jewelry Process Flow

The basic transformation of a fine jewelry piece starts off with a good product design. Firms can use a suitable design software system to initiate this process. The product design identifies the exact amount of precious metal (gold, silver) needed, and if a component such as semi-precious or precious stone is required. Sourcing the stone component is normally done by an agent. Because each design is analyzed based on the actual cost of materials to be used, the actual weight of metal is needed (in grams), as well as the quality and caratage of the stone required. The amount and costing of the raw materials defines the final price point of the jewelry piece.

The Bangko Sentral ng Pilipinas (BSP) is a primary source of fine metals such as silver and gold alloy. However, although the BSP mint and gold refinery sells processed gold and silver metals to the industry, only a few exporting firms buy from the central

bank. Importing gold and silver alloy or finished metal is also a common practice by the industry, particularly if the buyer prescribed the quality of said metals. Imports are normally made from Hong Kong and Thailand.

Sourcing stones is another major process in the fine jewelry value chain. Precious and semi precious stones not readily available in the market such as gemstones and diamonds are normally imported through agents from India, South America, Hong Kong and South Africa. Pearls are more accessible locally. There are about 10 pearl farms in the country, mostly in the Mindanao region. Culturing pearls has improved the supply base for this particular precious stone. Other gemstones are also imported. The importation lead time is around three days.

Upon receipt of the metal and stone components, the manufacturing process starts with the wax modeling and master mold making of the jewelry piece. This entails actual transformation of the metal (gold, silver) into a final piece – ring, brooch, earring, necklace or bracelet. Once a master mold is done, wax injection is applied on the mold piece. Pre-polishing is made on the metal itself. The process then continues with casting, assembly, stone setting, and soldering, enameling and final polishing of the jewelry piece. At various stages, the amount of precious metal used is carefully monitored to ensure proper usage and to avoid pilferage.

Production time may vary depending on the product. In the case of a silver set piece (bracelet, ring and pair of earrings) a 100-piece set order will take 30 to 45 days to deliver to the end buyer. The actual delivery period depends on the intricacy of the design and whether the silver set piece requires stone setting. If the jewelry requires intricate stone setting, a minimum of 45 to 60 days is required to produce the goods.

After final polishing, the products are again subjected to quality inspection through actual weight and caratage inspection, and stamped with hallmarks as prescribed by the buyer. Upon inspection, the goods are individually packed in boxes lined with a special paper featuring zero pH and non-sulfur content. Buyers can also require outer packaging requirements.

Products for the export market are normally shipped by air or by courier service. Considering that the items are expensive, a 0.25% to 1.0% plus VAT is provided as part of the insurance, tax and cost of shipment. Based on FOB prices, payments are normally done through telegraphic transfers (TT); bigger volume orders are paid through Letters of Credit (LC).

Products for the local market usually come in smaller quantities of the same kind. The local jewelry market is characterized by a discriminating consumer that prefers to have a one-of-a-kind piece. The production process is the same as with exported items. However, the distribution channels of the local market differ. For example, in the case of silver jewelry for local buyers, the manufacturer normally uses an agent. The agent, traditionally referred to as "corredoras," would offer the goods to jewelry stores that do not have a manufacturing setup, or in some instances, goes direct to the end consumer on a house-to-house, person-to-person basis. The "corredoras" are provided with the goods based on trust from the manufacturer. They add a 20% to 30% mark-up on the price if the goods are bought on cash basis. The mark-up can go as high as 50% of the base price if the purchase is a lay-away plan. Fine jewelry pieces left at jewelry stores are normally on a consignment basis.

A few of the manufacturers have their own jewelry stores in major malls all over the country. This manufacturer-retailer follows a mix-inventory system in filling up its retail outlets with jewelry items. The mix-inventory system is a combination of locally produced jewelry pieces, mostly coming from Meycauyan, Bulacan, and imported finished goods from Hong Kong, Thailand or Italy.

A brief description of fine jewelry operations is also presented in Annex 7. The value chain diagram of the fine jewelry sector is shown on page 73, and the value chain table, on pages 74-86.

Key Findings from the Value Chain Analysis

The fine jewelry sector faces serious issues in securing their raw material needs. These include precious metals such as gold and silver, as well as precious and semi-precious stones. The problem lies in the difficulty of getting the materials at the right quality and price, and within a reasonable amount of time. The gold available locally is not of sufficient quality for most fine jewelry producers. These companies have to import their needs. However, importation of precious metals and stones is heavily regulated to the point that much time and resources are spent by producers on procurement and delivery. All of these issues add to the cost of the final product and reduce the competitiveness of local fine jewelry in the global market.

The industry's production concerns include the lack of skilled personnel, insufficient R&D, lack of grading facilities for gemstones and an inability to upgrade their equipment due to high cost. Training centers for jewelry workers are usually limited to the basic skills in production. Most firms have to train their workers

internally in the more advanced processing activities such as gemstone setting, casting and molding. This increases their investments in training that may be wiped out if their workers are later pirated.

The high cost of machineries needed in operations prevent most firms from upgrading their facilities. This situation was compounded up to fairly recently by the heavy taxes imposed on fine jewelry equipment imports. As such, there have been little significant changes on the shop floor technology development. There have been government reforms in policy lately through the enactment of the law, Republic Act 8502, which allows the industry to import raw materials (be it in metal form or stones) and capital equipment duty free as long as the end product is for the export market. However, the implementing rules and regulations (IRR) of RA 8502, which was finalized only during the first quarter of 2004, should be properly disseminated to the industry.

In outbound activities, firms in the industry still rely on the traditional practice of agents or "Corredoras" for moving products to the local market. This practice relies on trust and there is a lack of formal security measures to protect manufacturers. For the export market, the industry relies heavily on trade fair participation to get buyers. However, this is a costly process and entails sustained presence to the international trade fairs to get the acceptance of potential buyers. There is presently no cohesive marketing strategy or program for the industry on competing in the world market. In after sales service, firms have to improve their present system of documenting and handling customer complaints.

The Fine Jewelry Sector Value Chain Diagram

FIRM INFRASTRUCTURE	Design, Planning, Sourcing, Financing, Production Processes, Quality Control, Marketing, Government Advocacy				
HUMAN RESOURCE MANAGEMENT	<ul style="list-style-type: none"> Workers' apprenticeship programs Training in fine metals and gemstone grading and inspection Training in import documentation 	<ul style="list-style-type: none"> Design/Product development training program Training in material grading Training in advanced processing techniques 	<ul style="list-style-type: none"> Training of workers in quality inspection and packaging Training in export documentation 	<ul style="list-style-type: none"> Training in sales (export and local markets) Foreign buyer linkages 	
TECHNOLOGY DEVELOPMENT	<ul style="list-style-type: none"> Manual calculation of base metal/stone requirements Supplier network information system Design of inventory-material management Accounting system 	<ul style="list-style-type: none"> Waste water treatment and other environmental measures Testing procedures Quality control Certification Information systems development 	<ul style="list-style-type: none"> Merchandise inventory control Packaging systems Information systems 	<ul style="list-style-type: none"> Grading procedures Testing procedures Information systems Development of buyers' data 	
PROCUREMENT	<ul style="list-style-type: none"> Local mining industry Simplification of Import procedures Material inventory management Testing and certifying agencies 	<ul style="list-style-type: none"> Importation of capital equipment Transportation service Information system Testing and certifying agencies 	<ul style="list-style-type: none"> Insurance coverage services Inspection Packing systems and materials Shipping/Courier services 	<ul style="list-style-type: none"> Media services Security services Courier services 	
	<ul style="list-style-type: none"> Sourcing, inspection and grading of materials Import documentation adhering to R.A. 8502 Pick-up of materials Delivery of materials Inbound handling of materials Testing of materials Raw materials inventory 	<ul style="list-style-type: none"> Weighing/grading of precious metals and stones Product design and development Forming and processing of fine/precious metals Component fabrication Assembly Quality control systems Reworking of components Maintenance of facilities and equipment Specifications sheet that includes workflow and raw material requirements 	<ul style="list-style-type: none"> Export documentation based on R.A. 8052 guidelines Domestic market documentation Reliance of local market on agents "corredoras" Scheduling of shipment/delivery Inspection/Packing and coordination with courier services 	<ul style="list-style-type: none"> Local advertising Gov't policies and reforms on tax rebates and exemptions Export promotional activities (international marketing/trade fair participation) Product development for export market-retail Export branding Retail store operations Door-to-door selling 	aftersales service by a few major retailers: repair of jewelry, specifically stone setting
	INBOUND LOGISTICS	OPERATIONS	OUTBOUND LOGISTICS	MARKETING & SALES	SERVICE

M A R K E T I N G & S A L E S
 S E R V I C E

The Fine Jewelry Sector Value Chain Table

FIRM INFRASTRUCTURE		
FINDINGS	CONCERNS	RECOMMENDATIONS
Firms lack access to financing programs for capital equipment improvements and technology enhancement.	Firms have difficulty to implement re-engineering that could improve efficiency and competitiveness.	Industry should link with the Small Business Guarantee Fund Corp. (SBGFC), a government financing institution, for financing specific to the needs of the Fine Jewelry sector.
INBOUND LOGISTICS		
Human Resource Management		
FINDINGS	CONCERNS	RECOMMENDATIONS
Few mining companies where the local (mine-site) communities can implement community-training programs are recognized by the government.	Lack of community development programs linked with mining companies restrains the enhancement of the local community's skills in the processing of materials required by the sector.	Local governments and the private sector could initiate community training programs, specifically in Baguio where silversmith training programs could eventually provide the industry with a stable pool of skilled workers.
The industry lacks information on the work involved in the importation of raw materials, as stipulated by the implementing guidelines of R.A. 8502.	The benefits and incentives of R.A. 8502, especially in the importation of raw materials, are not maximized.	Government, through the Department of Finance and Department of Trade and Industry, should conduct seminars on the new procedures pertaining to R.A. 8502.

INBOUND LOGISTICS		
Technology Development		
FINDINGS	CONCERNS	RECOMMENDATIONS
<p>Only a few gemologists have state-of-the-art equipment for intensive gemstone grading.</p> <p>The services of assaying offices that test fine metals are not maximized.</p>	<p>Local jewelry exporters are discouraged by the expensive gemstone grading and assaying processes from investing and expanding in these facilities.</p>	<p>Gemstone grading and assaying can be undertaken under the concept of a Common Service Facility initially run by the government (DOF-Central Bank). This can eventually be transferred to the private sector under a Build-Own-and-Operate (BOO) scheme.</p>
<p>The quality of locally available "raw" fine/precious metals such as gold and silver is substandard.</p> <p>Locally sourced metals have different levels of purity, which affects the quality of final product</p> <p>The industry now sources only 10% of the total industry requirements from BSP.</p>	<p>Raw or fine precious metals should be of the purest and finest quality -- 99.9% for gold and 92.5% for silver -- to achieve the best finishing</p> <p>Improved product quality will accelerate the sector's sourcing of such materials.</p>	<p>Bangko Sentral ng Pilipinas could look into the possibility of upgrading current equipment and machinery to re-engineer its gold/silver refinery unit and provide competitive quality metals to the industry.</p>
<p>Manufacturers are highly dependent on foreign suppliers' certifications of the quality of gemstones imported.</p>	<p>Local firms need to ensure that the quality of gemstones delivered comply with the specifications of the exporter/ manufacturer.</p>	<p>Implement a policy of 100% inspection of gemstones by accredited gemologists to ensure the quality of materials.</p>
<p>The manual inventory management of materials (including specifications, volume, etc.) may not be sufficient to meet the</p>	<p>Manual systems impede the exporter's productivity and ability to meet quick and precise production and delivery schedules.</p>	<p>Companies should upgrade current pre-production processes such as planning, sourcing and inventory management through</p>

INBOUND LOGISTICS		
Technology Development (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
global demand of quicker turnaround times.		<p>the use of updated software systems.</p> <p>The trade association could identify the common needs of the industry and, through a consultant, provide the necessary software program training and adoption in factories.</p>
The industry requires a comprehensive database of quality materials, equipment and tools as a sourcing aid.	Smaller companies without access to data on suppliers are unable to improve material sourcing and deliver on time.	The trade association may want to work on a common database of suppliers across regions that could be shared among members, regardless of size and market orientation (local or export).
The sector wants to explore the use of local materials in combination with precious metals and stones. Indigenous natural materials from the Philippines could add value to the goods.	Few companies have begun using natural materials in their jewelry. Information on the use of such materials remains limited.	The sector could link with the costume jewelry group and share resources, specifically a database of commonly used natural materials.
Few exporters see the value of updated technologies in grading semiprecious metals and stones.	The lack of awareness of current grading technologies for semiprecious materials compromises the reliability of exporters.	The industry and government can jointly undertake the conduct of short-term technical assistance programs to improve grading systems and technologies.

INBOUND LOGISTICS		
Procurement		
FINDINGS	CONCERNS	RECOMMENDATIONS
The Philippines' natural gold resources remain underutilized as it was only recently that the government relaxed policies to promote mining in the country.	The lack of a robust of a robust mining industry has undermined the supply base for precious metals.	Industry could work with government on advocacy policies to improve the business climate for mining firms. This entails the DTI's coordination (through the BOI) with the DENR.
Procurement of base metals (silver and gold) from local sources such as the BSP is not maximized.	Reliance on imported silver and gold adds to sourcing costs and time, which in turn, affects the turnaround time for export orders.	Government (DOF-BSP) should initiate a dialogue with industry on how to maximize the services of the BSP mint and gold refinery.
No systematized bulk-buying system of metals, stones and other major components is in place. Firms import ready-mix gold, a primary base material, on an individual basis.	The industry's competitiveness can be enhanced if base materials such as stones and metals are readily available at competitive prices.	Industry should work on the mechanics of centralized bulk buying with the assistance of government under the present IRR of R.A. 8502 (IRR Administrative Order #01-2004). Government, through DOF, can provide a financing mechanism for the importation of gold and other metals similar to the "metal loan" arrangement in Italy where the manufacturer is charged a 3% interest on loans obtained under the setup.
Purchasing of materials is normally through identified brokers and couriers that also undertake the	The use of human couriers in sourcing precious stones and components can be dangerous.	Industry should veer away from the use of human couriers, more so with the IRR of R.A. 8502 in place. The

INBOUND LOGISTICS		
Procurement (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
necessary import documentation.		importation of precious stones and materials should be through appropriate procedures and mechanisms.
At the moment, few companies are well-informed of the mechanics and details of the IRR of R.A. 8502, which covers the incentives offered by the government to jewelry manufacturers on the importation of materials.	The industry's lack of knowledge of the benefits of importation and exportation offered by R.A. 8502 delays sourcing.	The government (BOI, Bureau of Internal Revenue, Bureau of Customs) and private sector should jointly embark on a nationwide industry campaign and highlight the benefits of the IRR of R.A. 8502, signed in early 2004. The IRR will initiate re-engineering and re-tooling, and ease the process of importing raw materials.
OPERATIONS		
Human Resource Management		
FINDINGS	CONCERNS	RECOMMENDATIONS
The inadequate pool of skilled production workers is a predominant problem in the industry.	Lack of adequately skilled workers affects production efficiency and export competitiveness.	Industry and government should jointly undertake the implementation of intermediary training programs focused on production processes such as model making, gem setting, finishing techniques like mokume, anticlastic, wax modeling, rough-out and pre-polishing, and casting/alloying.

OPERATIONS		
Human Resource Management (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
The practice of "pirating" skilled workers and middle management employees is common.	Pirating of workers undermines relationships among firms due to the possible leakages of confidential data as well as the loss of investments in worker training.	Conduct Human Resource Development seminars focused on work ethics, values, and discipline for entrepreneurs, middle management and skilled workers.
Although many students undergo training, the sector still suffers a shortage of skilled labor.	Firms need to invest in the considerable training of new recruits, which means additional costs and time.	The training centers and manufacturers open to students' on-the-job training (OJT) should agree on the level of production processes that students can be involved with. An intensive OJT program that allows students more hands-on activities to enhance their competency levels and improve their confidence in applying their newly learned skills should be instituted.
There is a need to upgrade the skills of gemstone setters and expand the base of qualified stone setters.	Damage on gemstones during preparation because of lack of skills increases costs significantly.	The sector should coordinate with training centers to include gemstone setting in their priority list of skills training programs for the sector.

OPERATIONS		
Human Resource Management (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
There are not enough skilled model/master makers.	The master mold is a key component in jewelry production. The quality of master molds/samples has a direct effect on costing and quality.	The industry and government should implement integrated training in model/master making with the aid of CAD-CAM equipment, possibly through under a foreign technical assistance grant.
"Classroom-trained" workers lack the exposure to on-the-ground realities at the shop floor.	Productivity is affected by the lack of exposure to the intricacies of actual production.	Meet with CITC to develop appropriate training programs designed for direct participation by manufacturers and their workers. This can start with a core group of companies.
Effective multi-skilled training programs for workers to build up their capabilities are lacking.	Workers need to upgrade their skills in order to improve productivity and product quality.	Identify the type of skills needed and form a core group of firms with common needs for skills upgrading. Develop and conduct short-term dual training (class and factory training) for their respective workers.

OPERATIONS		
Technology Development		
FINDINGS	CONCERNS	RECOMMENDATIONS
Few export firms have invested on capital equipment, specifically for wax modeling, casting, alloying, stone setting and polishing.	<p>The use of traditional tools and locally fabricated equipment impedes productivity and quality consistency.</p> <p>Jewelry making requires precision in cutting stones and precious metals. Using handmade tools can damage the product.</p>	<p>With the recent issuance of the IRR of R.A. 8502, manufacturers should maximize the benefits of the legislation, specifically the tax incentives in the importation of capital equipment and machineries.</p> <p>Trade associations should initiate the timely dissemination of the mechanics of R.A. 8502 to members.</p>
Productivity on the shop floor remains low.	Firms need to increase competitiveness by optimizing operations.	Implement productivity enhancement programs focused on mechanized production, specifically in the key stages (master molding, casting, alloying, stoned setting, etc.). These could be supplemented by short-term technical assistance programs.
The industry relies on pre-fabricated tools and components that do not guarantee the precision required during the preparatory work. This could lead to damaged stones and metals.	The base material (stones and metals) is already expensive and the damage caused by such tools will further increase costs.	Implement a technical assistance program on machinery and equipment upgrading and maintenance by hiring a foreign consultant whose expertise is in the design of semi-mechanized tools to aid the processes of production.

OPERATIONS		
Technology Development (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
The monitoring of workflow and raw material requirements is performed manually.	There is a need to improve cost efficiency, which can be done only by automating current systems.	Introduce software for the procurement of materials and inventory management, to be complemented by short-term consultancy assistance programs.
The sector needs to improve waste management in compliance with environmental laws.	Lack of proper waste management entails additional cost and inconvenience (when violations are cited by government agencies).	Educate firms on proper waste management. Encourage companies to install appropriate waste management systems in accordance with DENR policies.
Production schedules are not in place. While a few firms use PERT - CPM system to map out their production schedules, most still use manual calculations.	The prevalent use of manual scheduling opens firms to errors, which could delay production and ultimately, deliveries.	Provide short-term technical assistance programs focused on improving pre-production, production and postproduction workflow schedules.
The industry lacks knowledge of product and design development.	Insufficient information on the application of production and design techniques can hinder the development of new products.	Industry should undertake an integrated product design and development program. Hire a qualified international jewelry designer to develop and conduct the program, which could be partially subsidized by government and international organizations.

OUTBOUND LOGISTICS		
Technology Development		
FINDINGS	CONCERNS	RECOMMENDATIONS
Firms use disjointed systems for inventory, packing, crating and shipping, depending on the buyers' needs and requirements.	Companies need to improve efficiency in outbound operations to gain competitive advantage among buyers.	The industry should tap existing courses in documentation control management systems offered by independent organizations and government agencies.
Workers are aware of the intricacies of handling fine jewelry merchandise but could benefit from better packaging skills.	Improved packaging can add value to the products as perceived by buyers.	Industry may want to acquire minor capital equipment related to finishing and packing to improve in these areas.
Jewelry firms need to improve the merchandise inventory control systems used by their retail outlets.	Pilferage and loss of such expensive items as fine jewelry at the retail-outlet level harm the firm's profitability.	Industry may want to check the control systems used by major retail brands abroad such as Tiffany's, Zale Corp. and Sterling, and adapt these to the local setting.
The local jewelry market relies on a tradition of agents known as "corredoras" to move jewelry. The agent sells the jewelry to retail shops in major cities or directly to customers.	The trading network involving corredoras is a risky venture, from the vantage of both the base supplier and end retailer, as the agents are usually not insured. The trading business relies mainly on a tradition of trust.	The local jewelry trading business can be professionalized through the adaptation of an accreditation system for agents. The said system can institute security measures such as the posting of insurance bonds by the agents.

MARKETING AND SALES		
Human Resource Management		
FINDINGS	CONCERNS	RECOMMENDATIONS
Middle managers of fine jewelry firms lack exposure in marketing and sales, especially in the export market.	Unskilled middle management workers retard the firm's ability to market its products on the local and export markets.	For firms engaged in the local retail business, the sales staff should undergo training in marketing/selling techniques. Companies eyeing the international market should undergo seminars on the basics of exporting to help them understand the market's peculiarities.
Technology Development		
FINDINGS	CONCERNS	RECOMMENDATIONS
Market information that could help firms offer new products is lacking.	Firms cannot prepare effective market plans to deal with competition.	Initiate a market information-gathering program with the help of government and trade attachés.
At the firm-level, the support systems to improve linkages with foreign buyers are weak.	The global market for Philippine-made jewelry remains underdeveloped due to a deficient buyer-linkage network.	The private sector should conduct high-level selling and investment missions overseas to strengthen its network of potential buyers.

MARKETING AND SALES		
Technology Development (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
There are several exporters ready to be promoted as a "country" brand supplier of local fine jewelry but there is no cohesive marketing program in place.	Brand development is a major added-value mechanism for the industry to increase its export revenues.	A separate brand development program for qualified exporters should be undertaken, under government auspices (the Export Development Council) and, ideally, with foreign funding support.
The sector is limited to joining international trade fairs as a means of meeting foreign buyers.	The potential of other marketing tools is not being explored.	The industry should lobby with government agencies and foreign technical assistance organizations for an integrated export marketing program where trade fair participation is tied with calls on direct buyers.
Procurement		
The industry lacks access to quality promotional materials.	The lack of appropriate collaterals is detrimental to the sector's competitiveness.	The trade association should explore the development of a comprehensive set of marketing collaterals and an industry website to promote local fine jewelry.

MARKETING AND SALES		
Procurement (con't)		
FINDINGS	CONCERNS	RECOMMENDATIONS
The current promotional activities of the industry are expensive.	Firms need to define their priorities in the use of marketing funds.	Study the cost and benefits of various promotional activities and identify areas where more funding should be redirected.
SERVICES		
Human Resource Management		
FINDINGS	CONCERNS	RECOMMENDATIONS
Jewelry manufacturers with retail shops lack after-sales services such as the re-installation or restoration of missing parts.	Retail jewelry stores need to attend to customer complaints to maintain clients.	Train retail store personnel in post-sales communication with clients and after-sales services.
Technology Development		
Retailers lack the procedures in extending technical assistance/repair services to clients.	Technical support to retail clients is a means of winning customer loyalty.	Determine the appropriate activities in technical assistance to offer to clients and assign a specific worker to the implementation of these.

Needs Assessment

Based on the value chain analysis of the fine jewelry sector, the following needs and concerns were identified:

Firm Infrastructure

- Manufacturers need to be provided information on available financing programs and also be given assistance in accessing affordable and appropriate financing programs for the acquisition of capital equipment and technology.

Inbound Logistics

- Manufacturers need to link with the mining companies in the country to work out increased supply of precious metals and to develop programs for upgrading the skills of communities around mine sites in working with metals (i.e. silversmithing).

- Firms' access to the gemstone setting, testing and assaying services provided by gemologists should be improved. Only a few companies have state-of-the-art equipment in this area.
- Manufacturers need to be oriented on the advantages and benefits of R.A. 8502, which facilitates the duty-free importation of capital equipment, machineries and raw materials
- Together with government agencies such as the BSP and DTI, the industry needs to resolve current issues to improve the quality of local materials, particularly precious metals, available for the industry.
- Fine jewelry firms need appropriate software to upgrade their predominantly manual-based materials management and inventory system.
- The industry needs a comprehensive database on local and foreign suppliers of materials and tools used by fine jewelry manufacturers.
- Fine jewelry makers should link with other sectors such as costume jewelry to improve and expand the use of indigenous or local materials. The ideal tie-ups include those with enterprises that have long been involved in the materials processing and innovations.
- Firms need to develop a program or scheme for bulk buying of common materials (metals, stones, other components) to secure better choices and competitive prices of the materials needed.

Operations

- Production workers need to upgrade their skills in specific production processes from model making to gem setting.

- Existing technical training programs for the industry such as those in gemstone grading need to include more factory-level training and increase the exposure of workers/trainees to actual operations.
- Training programs for the industry need to be further reviewed and revised according to the priority concerns and needs of manufacturers, such as techniques in casting, plating, assaying, alloying, and stone setting, and special skills training in design. The training of workers in multi-skill capabilities also needs to be studied.
- There is a need to institute correct business ethics and value formation among workers and employers to prevent or minimize conflicts caused by pirating of employees.
- The industry needs to invest in applicable semi-mechanized or fully mechanized equipment and machinery to improve production efficiency. There should be more investments in equipment that provide precision and quality consistency in production such as casting machines, molding machines, etc.
- Waste management should be improved across the sector in compliance with environmental laws.
- Firms need a system or technology for mapping out and monitoring production schedules.
- The industry's product design and development capabilities need to be upgraded to inculcate a consciousness of market trends and competitive factors.

Outbound Logistics

- The industry needs to improve the manufacturers' documentation and management control systems against pilferage and other security concerns.

- There is a need to professionalize the retail distribution of fine jewelry products, particularly those produced in Bulacan province, by providing the manufacturers the necessary insurance and protection from individual agents or retailers.

Marketing and Sales

- Regular and updated market information is needed to improve the firms' product designs and marketability.
- The sector needs a cohesive marketing program based on solid market data. This marketing program should cover a wider base of manufacturers to enhance the competitiveness of Philippine-made fine jewelry
- Middle management workers should be provided marketing and sales training programs to upgrade their understanding of their target markets and the appropriate sales/marketing strategies. These programs will serve to supplement the occasional visits to export markets usually made by the company owners themselves.
- The industry members need to intensify their promotional linkages with buyers or potential buyers in the foreign markets.
- There is a need to define and optimize other promotional strategies, aside from participation in international trade fairs.
- The development of a common Website on Philippine Fine Jewelry should be explored in order to increase buyers' awareness of the Philippines as a supplier of jewelry and generate on-line business linkages.
- The industry needs to study more efficient ways of utilizing available funding/grants oriented to export promotional programs in order to determine the best usage of such funds.

Services

- Medium-size jewelry stores should offer quality after sales service and guarantees to end consumers, such as free repair service or stone setting. At the moment, only the major jewelry stores offer such services.



Strategic Direction

Given the market conditions for fine jewelry and the findings in the value chain analysis, production management and other parts of this report, this section presents a strategic direction for the industry over the next few years.

The industry made significant headway in the foreign market in 2005 when exports of fine jewelry increased by 55% from the previous year's level. The challenge for the sector is to maintain the momentum for this growth over the next several years.

The industry needs to encourage more manufacturers to venture into the export of their products. This should increase the base of exporters and allow the sector to expand its presence in current markets and enable more experienced firms to tap new buyers in other regions. Developing exporters can be done in a phased manner so that firms can enter the foreign market in a pace that is comfortable for them. Would be exporters can attend smaller fairs and then work their way up to the major international events.

In line with this effort to generate more exports, there should be an industry wide cohesive marketing program based on some distinctive features of local jewelry aimed at specific markets. The target market can be geographic in scope (i.e. Europe) with certain design and price considerations. The industry should obtain the necessary market data to help build up this program. With the target market identified and the proper image for local jewelry established, the necessary marketing collaterals can be developed and promotional efforts undertaken.

On their production operations, firms need to continue working for favorable conditions on their supply of precious metals and other materials as well as the importation of equipment and technology. The industry has to enhance their collective advocacy capability to be able to sustain efforts in working for a better business environment.

Another area for continued development is in expanding the pool of skilled personnel. Among the expertise and skills needed are in gem setting, mode/master making, wax modeling and casting/alloying. A good training program for new workers should include enough practical, hands-on work so that the personnel can readily be absorbed by the industry.

Companies in the industry should also improve the ratio of their actual sales to the number of product designs made. Better market information and availing of more technical expertise from international designers can help this effort. Current manufacturing systems can also be improved by applying engineering principles to plant layout, workstation design and process flow within the shop.

Given below are some specific programs that the industry can implement to achieve their strategic direction in the next few years.

1. Review and integrate current marketing efforts into a sector wide marketing program with clear target markets, sales objectives and market strategy. This program should be backed up by the needed marketing collaterals and promotional campaign.
2. Develop a program for gathering market information and for the regular dissemination of market data to industry members. This can be handled and maintained by the trade association.
3. Maintain a common industry website for marketing of products and for information dissemination. The website can also be handled by the industry association who can also charge fees for its maintenance.
4. Conduct regular seminars for the middle managers and sales staff of fine jewelry firms in basic marketing, exporting and selling techniques.
5. Develop an integrated skills training program for new and current workers specializing in the skills urgently needed by the industry. The program should be dual in nature, combining technical training with shop floor activities.
6. Work with mining companies in developing a training program for people in mine site communities in metals processing such as silversmithing.
7. Conduct regular seminars on work and business ethics among company owners and workers to cut down on personnel piracy and similar issues.

8. Establish an accreditation system for gemologists and assaying centers to assure fine jewelry firms of a reliable base of qualified services in certification and testing. This should lessen the dependence of manufacturers on the certifications issued by their suppliers for the gemstones they purchase.
9. Promote the use of ICT in streamlining manufacturing and business operations of manufacturers by disseminating information on available software and engaging short term consultants to demonstrate the benefits of such resources in fine jewelry making.
10. Institute an industry wide program to promote proper waste management among jewelry manufacturers in accordance with policies of the Department of Environment and Natural Resources.
11. Establish a common database on materials suppliers, sub-contractors and related information maintained and sustained by the trade association.
12. Develop linkages with other industry associations and groups for possible joint activities in marketing, product design and raw materials sourcing.
13. Institute an integrated product design and development program using a core group of exporters who can engage an experienced international jewelry designer in a long term program to enhance local design capabilities.
14. Launch a technical consultancy program for companies that provides the services of foreign consultants/experts in the field of productivity enhancement, mechanized production, and specific areas of production such as master molding, casting, alloying and stone setting.
15. Upgrade advocacy capabilities of the industry and maintain a program to lobby government for continued support especially in the proper implementation of R.A.8502 and improving the quality of the local supply of precious metals.

Annexes

Annex 1: The Value Chain Analysis

The Value Chain Concept

Value chain analysis is a method of identifying and understanding the various activities of an organization that provide value to its products or services and the linkages among such activities. It is used to determine which aspects of a firm's operation can be enhanced, and where to reduce costs, optimize resource use, or even reconfigure the entire chain of operations for better performance. The end result of this effort is increased product or service value, lower costs of operation, or both.

A value chain covers two sets of activities. The first refers to the primary activities of a firm and consists of inbound logistics, operations, outbound logistics, marketing and sales, and service. These are the activities that organizations engage in to produce a product or service.

The second set covers support activities that indirectly contribute to the firm's operations. These include the organization's infrastructure, human resource management, technology development and procurement.

All these activities are interconnected and work in a process that can be structured into a value chain diagram. A firm's value chain can also be linked with external chains such as those of its suppliers or buyers.

Value Chain Analysis in Sectoral Enhancement

An adaptation of the generic value chain described in Michael Porter's book *Competitive Advantage* was used to analyze the structure and performance of industries or sectors covered in Pearl2's Sectoral Enhancement program. Originally, the value chain was designed for company-level evaluation. For the Pearl2 project, however, it is used to develop a framework for understanding how a particular industry operates, with the objective of determining the needs of that sector. On the basis of such a needs assessment, it is possible to identify areas where appropriate assistance can be provided.

Basically, work with all the sectors covered by the program included: (i) designing the value chain diagram, (ii) developing a table, (iii) describing the main components of the value chain, and (iv) analyzing the flow of the chain to identify issues and problems and possible courses of action. Such an assessment brings to the surface the needs of the sector for closer evaluation. The value chain analysis focused primarily on producers which are members of the Business

Support Organization identified for the sector. The analyses are not by any means comprehensive and do not involve any cost estimates for the chain or a comparison of the value chain of a similar industry or with similar features in other countries or regions. Due to time and resource constraints, no references were made to external value chains.

Reference: Michael E. Porter, "Chapter 2: The Value Chain and Competitive Advantage," *Competitive Advantage* (New York: Simon & Schuster, 1985), pp. 33-61.

Annex 2: Product Coverage of Fine Jewelry

HS CODE	PSCC	DESCRIPTION
66711	7101.1	Natural pearls, unworked
66712	7101.21	Cultured pearls, unworked
66713	7101.22	Cultured pearls, worked
66721	7102.1	Diamond, rough, unsorted
66722	7102.31	Diamonds, sorted, unworked or simply sawn, cleaved or bruted
66729	7102.39	Diamonds, otherwise worked, but not mounted
66731	7103.1	Precious, semi-precious stones, unworked/rough
66739	7103.91	Rubies, sapphires and emeralds, otherwise worked
66749	7104.9	Other synthetic or reconstructed precious/semi-precious stones
88592	9113.1	Watch straps, watch bands and bracelets, of precious metal
89731	7113.11	Articles of jewelry and parts thereof, plated or not plated
89732	7114.11	Articles of gold/silversmiths' wares and parts thereof
89733	7116.1	Articles of natural or cultured pearls
89741	7115.1	Catalysts in the form of wire cloth, platinum or other metals
89749	7115.9	Articles of precious metal clad with precious metal
93101.94		Various precious/semi-precious stones imported on consignment basis
93102.93		Various jewelry of pearls and precious/semi-precious stones set on precious metal

Source: BOI

Annex 3: Summary of Incentives under the Jewelry Act (R.A. 8502)

Under R.A. 8502, the following incentives are available to jewelry firms:

1. 0% duty on imported raw materials and capital equipment
2. Exemption from excise tax
3. Entitlement to a deduction from taxable income equivalent to 50% of expenses incurred in training, provided that the training must be approved by:
 - 3.1 the Technical Education and Skills Development Authority (TESDA) for post secondary non-degree programs, or
 - 3.2 the Commission on Higher Education (CHED) for degree programs
4. Entitlement to gold and silver sales by the Bangko Sentral ng Pilipinas with minimal charges
5. Inclusion of locally manufactured jewelry products in the government's tourist duty-free shops

Annex 4: World Fine Jewelry Imports by Country, 2002-2004 (in US\$)

	Country	2002	2003	2004
1	USA	19,606,060,796	20,702,933,840	23,482,538,786
2	Belgium	13,272,015,254	11,575,585,868	13,906,155,373
3	U.K.	8,298,115,268	9,418,000,144	10,964,121,731
4	Hong Kong	6,232,606,116	7,642,010,662	8,977,329,199
5	Switzerland	2,869,580,533	2,751,840,757	3,239,743,346
6	Japan	2,619,713,600	2,771,385,055	3,221,308,704
7	China	1,188,896,196	1,479,685,237	2,018,825,582
8	France	1,254,541,117	1,258,926,924	1,690,163,698
9	Singapore	967,388,770	1,074,849,426	1,520,197,036
10	Germany	1,007,185,173	1,087,655,000	1,285,758,000
11	Italy	744,317,093	874,435,710	1,106,148,949
12	South Africa	485,319,807	653,808,030	738,334,778
13	Canada	577,834,523	605,737,398	733,914,043
14	Australia	396,574,948	512,687,608	651,181,897
15	Sri Lanka	187,399,880	228,289,018	232,611,171
	Others	9,972,200,917	19,662,467,941	2,612,379,616
	Total	69,679,749,991	82,300,298,618	76,380,711,909

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: UNSD Comtrade Database

Annex 5: World Fine Jewelry Exports by Country, 2002-2004 (in US\$)

	Country	2002	2003	2004
1	Belgium	13,752,871,429	12,082,995,464	14,674,227,637
2	USA	7,480,655,802	8,193,417,688	10,788,196,948
3	United Kingdom	8,410,546,507	8,143,092,019	10,599,192,805
4	Hong Kong	5,147,946,992	5,782,857,617	6,969,074,692
5	Italy	4,834,527,228	4,530,340,983	4,859,276,892
6	Switzerland	2,804,834,838	2,924,852,491	3,622,603,871
7	China	2,285,639,641	2,558,649,829	3,379,055,917
8	South Africa	1,604,674,679	1,843,352,076	2,099,120,520
9	Canada	836,724,935	1,407,239,902	1,621,411,196
10	Germany	987,810,261	1,200,368,000	1,538,479,777
11	France	1,160,779,590	1,089,895,828	1,405,726,695
12	Turkey	559,768,739	725,687,048	956,930,884
13	Singapore	525,635,006	927,091,429	937,000,345
14	Japan	541,756,826	564,139,833	821,456,387
15	Malaysia	451,915,550	564,127,707	793,614,193
	Others	14,118,436,255	30,131,968,653	4,255,287,585
	Total	65,504,524,278	82,670,076,567	69,320,656,344

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113. Please see Annex 2 for details on these codes.

Source: UNSD Comtrade Database

Annex 6: U.S. Fine Jewelry Imports by Country, 2000-2004 (in US\$ '000)

	Country	2000	2001	2002	2003	2004	Ave. Yearly Growth Rate (%)
1	Israel	5,635,706	5,382,717	6,079,987	6,325,373	7,411,578	7.4%
2	India	3,317,603	2,620,565	3,632,518	3,932,644	4,494,824	10.0%
3	Belgium	2,594,914	2,151,967	2,306,971	2,607,632	2,749,410	2.2%
4	Thailand	859,388	828,287	872,987	974,891	1,124,099	7.2%
5	China	410,726	475,939	688,554	892,974	1,092,411	28.1%
6	Italy	1,514,045	1,411,604	1,534,465	1,243,576	1,033,140	-8.5%
7	South Africa	363,167	482,454	527,267	677,940	828,450	23.2%
8	Hong Kong	1,024,949	822,117	841,326	731,403	726,471	-7.8%
9	Turkey	263,531	199,767	199,655	250,131	371,597	12.4%
	Others	3,108,627	2,758,724	2,742,376	2,853,613	3,412,459	2.9%
	Total	19,092,656	17,134,141	19,426,106	20,490,177	23,244,439	5.5%

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113.

Source: Trade Stats Express, OTII, U.S. Department of Commerce

Annex 7: EU25 Fine Jewelry Imports by Importing Country, 2000-2004 (in Euro '000)

	Country	2000	2001	2002	2003	2004	Ave. Yearly Growth Rate (%)
1	Belgium	13,930,915	12,943,997	14,051,555	10,232,496	11,178,005	-4.12%
2	United Kingdom	9,233,445	8,172,257	4,360,423	7,527,762	8,189,247	5.82%
3	France	1,447,428	1,642,220	1,343,697	1,191,322	1,412,158	0.62%
4	Germany	1,343,115	1,180,141	1,106,714	992,022	1,034,371	-6.11%
5	Italy	929,912	912,523	787,627	773,136	889,118	-0.60%
6	Spain	347,856	345,921	311,014	313,316	394,628	4.01%
7	Austria	181,304	174,254	165,473	156,500	157,336	-3.45%
8	Netherlands	205,707	157,031	145,530	133,003	142,728	-8.07%
9	Portugal	177,047	138,557	136,071	112,940	112,077	-10.32%
	Others	558,869	543,313	551,170	508,110	630,063	3.71%
	Total	28,355,599	26,210,214	22,959,273	21,940,606	24,139,730	-3.60%

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113.

Source: Export Help Desk, External Trade, European Commission

Annex 8: EU25 Fine Jewelry Imports by Supplying Country, 2000-2004 (in Euro '000)

	Country	2000	2001	2002	2003	2004	Ave. Yearly Growth Rate (%)
1	United Kingdom	3,612,661	3,018,548	3,466,757	3,262,245	3,270,753	-1.81%
2	Botswana	453,183	1,046,357	237,543	1,445,116	1,827,838	147.11%
3	South Africa	2,208,922	2,165,216	1,275,107	1,884,397	1,760,418	-0.47%
4	India	1,438,777	1,369,283	1,491,349	1,399,027	1,617,272	3.37%
5	Israel	1,987,193	1,713,110	1,750,759	1,345,675	1,594,704	-4.06%
6	Switzerland	4,756,752	2,342,324	1,512,675	1,311,100	1,475,519	-21.74%
7	Russian Fed.	1,005,254	1,169,537	599,061	1,081,899	1,344,330	18.11%
8	Canada	467,193	575,706	307,249	1,072,479	1,221,415	59.89%
9	U.A.E.	286,543	402,606	401,364	906,676	1,094,445	46.70%
	Others	12,139,122	12,407,527	11,917,409	8,232,194	8,933,936	-6.03%
	Total	28,355,599	26,210,214	22,959,273	21,940,809	24,140,630	-3.59%

Note: the above data covers only HS nos. 7101, 7102, 7103, 7104, 7113, 7114, 7115, 7116 and 9113.

Source: Export Help Desk, External Trade, European Commission

Annex 9: Phil. Fine Jewelry Exports by Country, 2000-2005 (in US\$)

	Country	2000	2001	2002	2003	2004	2005	Ave. Yearly Growth Rate (%)
1	U.S.A.	4,952,596	3,088,715	2,347,920	3,994,239	5,502,247	14,244,789	41.03%
2	Hong Kong	2,656,725	5,371,188	7,581,746	5,651,701	6,369,944	5,979,404	24.89%
3	Italy	518,504	1,072,578	1,359,262	1,814,964	2,381,927	4,910,054	60.90%
4	Japan	6,739,750	5,814,224	4,267,008	3,980,339	3,197,231	4,584,719	-4.67%
5	Australia	230,416	78,646	1,753,707	1,955,923	1,834,251	3,165,662	428.38%
6	G. Britain	1,103,831	1,369,675	915,324	1,252,318	1,871,002	921,515	5.28%
7	Switzerland	103,140	7,836	36,752	32,294	13,575	639,686	963.75%
8	Swaziland	1,476,885	565,500	14,579	-	1,094,738	575,033	-76.65%
9	Spain	182,077	175,203	188,474	475,410	318,773	567,446	40.22%
10	France	482,055	487,151	220,096	252,527	276,716	227,998	-9.41%
	Others	2,440,449	1,525,617	1,987,399	1,103,293	953,773	1,095,783	-10.07%
	Total	20,886,428	19,556,333	20,672,267	20,513,008	23,814,177	36,912,089	13.93%

Source of basic data: Department of Trade and Industry

Annex 10: Summary of Key Findings From 2005 Pearl2 Survey of Fine Jewelry Firms

<i>Years in Business</i>	Frequency	Percentage
1-5 Years	6	19.4
6-10 Years	5	16.1
11-15 Years	9	29.0
16-20 Years	3	9.7
21-25 Years	2	6.5
26-30 Years	1	3.2
31-35 Years	1	3.2
More than 35 years	1	3.2
No Response	3	9.7
Total	31	100.0
<i>Company Size</i>	Frequency	Percentage
Micro (assets below Php 3M)	5	16.1
Small (assets from Php 3M to 15M)	14	45.2
Medium (assets from Php 15M to 100M)	9	29.0
Large (assets above Php100M)	1	3.2
No Response	2	6.5
Total	21	100.0
<i>Company Setup</i>	Frequency	Percentage
Sole Proprietorship	10	32.3
Partnership	0	0.0
Corporation	21	67.7
No Response	0	0.0
Total	31	100.0
<i>Owner of Sole Proprietorship</i>	Frequency	Percentage
Male	6	60.0
Female	4	40.0
No Response	0	0.0
Total	10	100.0

<i>Education of Sole Proprietor, Owner</i>	Frequency	Percentage
Some College	4	40.0
College Grad.	5	50.0
Post Graduate	1	10.5
No Response	0	0.0
Total	10	100.0
<i>Chairperson of Corporation, gender</i>	Frequency	Percentage
Male	10	47.6
Female	7	33.3
No Response	4	19.0
Total	21	100.0
<i>Education of Corp. Chairperson</i>	Frequency	Percentage
Some College	2	9.5
College Grad.	11	52.4
Post Graduate	4	19.0
No Response	4	19.0
Total	21	100.0
<i>President of Corporation, gender</i>	Frequency	Percentage
Male	19	61.3
Female	10	32.3
No Response	2	6.5
Total	31	100.0
<i>Education of Corp. President</i>	Frequency	Percentage
Some College	6	19.4
College Grad.	15	48.4
Post Graduate	6	19.4
No Response	4	12.9
Total	31	100.0
<i>Size of Business Premises</i>	Frequency	Percentage
Less than 100 square meters	7	22.6
Between 100 to 250 square meters	14	45.2
More than 250 square meters	10	32.3
Total	31	100.0

<i>Ownership of Business Premises</i>	Frequency	Percentage
Owned	6	19.4
Rented	23	74.2
Owned and Rented	1	3.2
No Response	1	3.2
Total	31	100.0
<i>Venue of Business Premises</i>	Frequency	Percentage
Residencial	3	9.7
Commercial	25	580.6
Both	1	3.2
No Response	2	6.5
Total	31	100.0
<i>Personnel</i>		
<i>Management Employees</i>	Frequency	Percentage
Male	30	31.3
Female	66	68.7
Total	96	100.0
<i>Production Supervisors</i>	Frequency	Percentage
Male	94	87.0
Female	14	13.0
Sub-total	108	100.0
<i>Production Workers</i>	Frequency	Percentage
Male	455	100.0
Female	0	0.0
Sub-total	455	100.0
<i>Technical or R&D Staff</i>	Frequency	Percentage
Male	25	61.0
Female	16	39.0
Sub-total	41	100.0
<i>Quality Control Staff</i>	Frequency	Percentage
Male	19	22.6
Female	65	77.4
Sub-total	84	100.0
<i>Marketing Staff</i>	Frequency	Percentage
Male	30	39.0
Female	47	61.0
Sub-total	77	100.0

<i>Office & Administrative Staff</i>	Frequency	Percentage
Male	57	31.3
Female	125	68.7
Sub-total	182	100.0
<i>Total Employees</i>	Frequency	Percentage
Male	710	68.1
Female	333	31.9
Total	1043	100.0
<i>Average Monthly Wages</i>	in pesos	
Male		8,512.43
Female		8,869.52
Both Sexes		8,690.98
<i>Subcontracting</i>	Frequency	Percentage
Yes	7	22.6
No	24	77.4
No Response	0	0.0
Total	31	100.0
<i>Subcontractors</i>		
Ave. % of Work Subcontracted		47.1
Ave. Number of Subcontractors		2.4
Ave. No. of Workers/Subcontractor		20.4
Total Subcontractors		17
Total Workers of Subcontractors		143
<i>Subcon Location</i>	Frequency	Percentage
Within Region	5	71.4
Within Province	2	28.6
<i>Subcon Support</i>	Ranking	
Credit		2.0
Product Devt.		2.0
Tools		2.6
Skills Training		2.0
<i>Subcon Problems</i>	Ranking	
Delivery Date		1.4
Work Quality		1.8
Reliability		2.5

<i>Stage of Work Subcontracted</i>	Frequency		Percentage	
Finishing	3		42.9	
Production	5		71.4	
Pre-Production	2		28.6	
Others	2		28.6	
Total	7		100.0	
<i>Raw Materials Source</i>	Frequency		Percentage	
100 % Local	6		19.4	
100% Imported	1		3.2	
Both	21		67.7	
No Response	3		9.7	
Total	31		100.0	
<i>Mode of Production (%)</i>	Materials Handling	Prod.	Quality Control	Pack.
Manual	71.0	25.8	77.4	77.4
Semi-Mechanized	19.4	64.5	16.5	13.2
Fully Mechanized	0.0	3.2	3.2	3.2
Average: Manual	48.4			
Average: Semi-Mechanized	23.4			
Average: Fully Mechanized	2.4			
<i>Capacity Utilization (%)</i>	Total			
Average Utilization Rate	88.0			
<i>Reasons for Low Utilization Rate</i>	Ranking			
Others	1.6			
Space Limitations	3.3			
Lack of Raw Materials	2.3			
Personnel Limitations	2.5			
Equipment Limitations	2.7			
<i>Quality Control System</i>	Frequency		Percentage	
Use outside facilities	4		12.9	
Use internal resources	12		12.9	
Have specific personnel	18		58.1	
Follow standard procedures	15		48.4	
<i>Quality Control Problems</i>	Frequency		Percentage	
Production Process	18		58.1	
Raw Materials	8		25.8	
Others	1		3.2	
No Answer	4		12.9	

<i>Product Development</i>	Frequency	Percentage
Internal Capability	25	80.6
External Capability	10	32.3
<i>Prod. Dev. Information Source</i>	Frequency	Percentage
Buyers	14	45.2
Trade Fairs	19	61.3
Publications	18	58.1
Designers	19	61.3
Internet	12	38.7
<i>Enough Information for Prod. Dev.</i>	Frequency	Percentage
Yes	16	51.6
No	11	435.5
No Response	4	12.9
Total	31	100.0
<i>Has Internal R&D Capability</i>	Frequency	Percentage
Yes	12	38.7
No	13	41.9
No Response	6	19.4
Total	31	100.0
<i>Designs Based on Buyer Specifications</i>	Frequency	Percentage
Yes	27	87.0
No	2	6.5
No Response	2	6.5
Total	21	100.0
<i>Source of Sales</i>	Percentage	
Export	40.6	
Local	59.4	
<i>Market Segments Served</i>	Frequency	Percentage
High End	25	80.6
Middle End	15	48.4
Low End	2	6.5
<i>Countries Exported to</i>	Frequency	Percentage
Hongkong	26	29.5
Europe	9	10.2
Japan	6	6.8
Asia	6	6.8

<i>Countries Exported to (continued)</i>	Frequency	Percentage
China	4	4.5
USA	3	3.4
Other Asia	3	3.4
<i>Source of Foreign Buyers</i>	Frequency	Percentage
Own Contacts	10	32.3
Trade Fairs	6	19.4
Business Missions	2	6.5
Referrals	5	16.1
Others	4	12.9
<i>Means of Trade Promotions</i>	Frequency	Percentage
Brochures	10	32.3
Trade Fairs	16	51.6
Internet	7	22.6
Business Missions	2	6.5
Others	3	9.7
<i>Competitor Countries</i>	Frequency	Percentage
China	7	38.9
India	1	5.6
Indonesia	1	5.6
Korea	1	5.6
Thailand	5	27.8
<i>Exported to New Country</i>	Frequency	Percentage
Yes	3	16.7
No	15	83.3
No Response	0	0.0
Total	21	100.0
<i>Local Marketing Channel</i>	Frequency	Percentage
Department Stores	2	8.7
Boutiques	4	17.4
Own Stores	16	69.6
Traders	4	17.4
Direct Selling	9	39.1
<i>Export Marketing Channel</i>	Frequency	Percentage
Buyers	9	50.0
Distributors	5	27.8
Chain Stores	4	22.2
Other Retailers	3	16.7

<i>Export Sales</i>	Frequency	Percentage
Under US\$ 50,000	6	33.3
US\$ 50,001 to US\$ 100,000	1	5.6
US\$ 100,001 to US\$ 300,000	0	20.0
US\$ 300,001 to 500,000	3	16.7
US\$ 500,001 to US\$ 1,000,000	1	15.6
US\$ 1,000,001 to US\$ 3,000,000	1	5.6
No Response	6	33.3
Total	18	100.0
<i>Local Sales</i>	Frequency	Percentage
Under Php 1M	7	30.4
More than 1M to Php 3M	4	17.4
More than 3M to Php 5M	5	21.7
More than 5M to Php 10M	3	13.0
More than Pho10M	4	17.4
No Response	0	0.0
Total Companies with Domestic Market	23	100.0
<i>Budget Allocation</i>	Percentage	
Administrative	27.0	
R&D	7.3	
Marketing	11.7	
Production	50.9	
Others	3.0	
<i>Fund Source</i>	Frequency	Percentage
Own Funds	27	27.1
Bank Credit	4	12.9
Private Lenders	4	12.9
Others	0	0.0

Notes:

1. Average Monthly Wages on page 112 refer to the weighted average monthly salary of workers in the surveyed firms.
2. Ave. No. of Subcontractors and Ave. Workers per Subcontractor on page 112 refer to the weighted average of the total number of subcontractors and workers among surveyed firms.
3. Subcontractor Problems on page 112 are ranked based on the weighted average responses of the surveyed firms. The closer a number to 1 is, the more serious the problem.

4. Stage of Work Subcontracted on page 112 refers to the stage in the firms' operations that is outsourced.
5. The reasons for low utilization on page 113 are ranked based on the weighted average responses from surveyed firms. The closer a number to 1 is, the more significant the reason.
6. Quality Control Problems on page 113 refer to where in the firms' operations quality control problems are encountered, in this case, raw materials or in production.
7. Exported to New Country on page 115 refers to whether a respondent has exported to a new country during the time of the survey.
8. The total respondents for queries with multiple answers has been omitted.

Source: Pearl2 2005 Survey of members of the Guild of Philippine Jewelers.

Annex 11: Flow Chart of Fine Jewelry Industry Linkages

