

THE FEASIBILITY OF PRODUCING FALOPE RINGS IN INDONESIA

**Prepared for:
PROFIT**

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Business Advisory Indonesia**

August 1994

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List of Acronyms

AVSC	Association for Voluntary Surgical Contraception
BAI	Business Advisory Indonesia
BKKBN	Badan Koordinasi Keluarga Berencana Nasional National Family Planning Coordinating Board
BPS	Central Bureau of Statistics
CBR	Crude Birth Rate
DEPKES	Departemen Kesehatan (Department of Health)
FDA	Food and Drug Administration
IDHS	Indonesia Demographic and Health Survey
IPPA	Indonesian Planned Parenthood Association
IUD	Inter Uterine Device
JHI-PIEGO	John Hopkins Training Center
PKMI	Perkumpulan Kontrasepsi Mantap Indonesia (Association for Voluntary Sterilization)
POGI	Association of Indonesian Obstetricians and Gynecologists
PROFIT	Promoting Financial Investments and Transfers
RAM	Repair and Maintenance
RS	Rumah Sakit (Hospital)
SRI	Survey Research Indonesia
TFR	Total Fertility Rate
TQM	Total Quality Management
URC/CHS	University Research Corporation/Center for Human Resources
USAID	United States Agency for International Development
VSC	Voluntary Sterilization Services
YKB	Yayasan Kusuma Buana (The Private Sector Family Planning Program)

INTRODUCTION

Business Advisory Indonesia (BAI) was commissioned by PROFIT in June 1994 to examine the viability of producing falope rings in Indonesia. PROFIT is engaged in the identification and structuring of investments in the provision of family planning services which generate satisfactory returns for the local entity and have a significant family planning impact. PKMI (Perkumpulan Kontrasepsi Mantap Indonesia) is a non-government organization active in the provision of voluntary sterilization and contraception services. In 1990, PKMI and CV Almas, a private local company, formed PT Mantap Pratama, a business entity charged with undertaking income generating activities to enhance PKMI's financial sustainability as donor funding diminishes.

PT Mantap has submitted a funding proposal to PROFIT to purchase the raw materials and packaging machinery needed to manufacture the falope rings used in tubal ligation (female sterilization). In this report, BAI has endeavored to provide PROFIT with a clear understanding of the market for sterilization services in Indonesia, an assessment of the feasibility of the proposed investment, how the investment compares to PKMI's other income generating activities, and how the financing of the investment should be structured in order to maximize the financial benefits to PKMI.

Based on the findings of this study, conclusions are provided regarding the viability of the proposed investment and the soundness of the assumptions used by PKMI. Recommendations are made on how to maximize the financial benefits to PKMI.

EXECUTIVE SUMMARY

Overview

- Indonesia is the fourth most populated country in the world, following China, India and the United States, with an estimated population of 191.8 million people by year end 1994.
- The population is unevenly distributed, with nearly 60% of the country's inhabitants living on the island of Java.
- In the most recent census, the total fertility rate was estimated at 3.3 children per woman, down from 5.6 children per woman in the late 1960s. Infant mortality was estimated at 70 deaths per 1,000 births, and life expectancy was estimated at 57.9 years for men, and 61.5 years for women.
- The goal of the government is to achieve a fertility rate of 2.6 children per woman by the end of the sixth Five-Year Development Plan in 1999.
- Over 90% of married women in Indonesia know a family planning method, as well as a source.
- Approximately 50% of the currently married women are using some form of contraception. The most common methods are the pill (14.8%), the IUD (13.3%) and injections (11.7%).
- Over half of the women in Indonesia are familiar with female sterilization (54.1%), although only approximately 20% suggest female sterilization as the best method for limiting births.

Falope Ring Market

- CV Almas is the only importer of falope rings (used in tubal ligation), and has 100% of the government market. No other female sterilization products are currently being used, although many sterilizations are performed post-partum, without the use of the falope rings.
- A new technique for female sterilization called Quinacrin is currently being tested in other Asian countries, and could eventually have a significant negative impact on the demand for falope rings in Indonesia.

- Government consumption of falope rings is based on the annual budget, not on projected demand. Nevertheless, the government is likely to continue to include falope rings in their yearly budget in the near future.
- The number of falope rings imported by the government has decreased significantly over the past three years from 302,550 sets in 1992 to 138,214 sets in 1994.
- Female sterilization grew quite rapidly from 1974 through 1984, and continued to increase slowly until 1990. Since 1990, it has been on a steady decline. Total tubectomy acceptors in 1992/93 is estimated at 89,969.
- Industry sources suggest several reasons for the decline, namely 1) the introduction of new long-term contraceptive methods such as Norplant and injectables, 2) poor information dissemination, 3) Muslim attitudes towards female sterilization and 4) the decrease in the use of coercion.
- Industry professionals suggest that the number of sterilizations will steady off to approximately 125,000 total acceptors per year, with two thirds being women, or approximately 83,000 tubectomies per year.
- The price paid by the government for falope rings has increased by approximately 4.5% annually over the past four years. For the most recent order, the government paid Rp 3,080 per set.
- The demand for tubectomies performed in private facilities is very small, according to interviews with numerous practitioners.

Feasibility Study of Falope Ring Investment

- PT Mantap Pratama was established by PKMI and a commercial company, CV Almas, to carry out feasible income generating activities for PKMI. The first business activity planned is the production of falope rings. According to the original agreement, PKMI has a 20% share in PT Mantap Pratama, with CV Almas holding the remaining 80% share.
- The three major components in the capital investment required for this venture are 1) the cutting machine, 2) the packaging machine and 3) the raw materials. PT Mantap Pratama is requesting a soft loan to cover the costs of purchasing the raw materials and a packaging machine. The total loan request is Rp 536 million.

- The cutting machine has already been purchased by PT Mantap Pratama for Rp 30 million. The cost of the packaging machine is estimated at Rp 160 million and the estimated cost of raw materials for the first year of production is Rp 344 million, plus Rp 32 million for the packaging materials.
- In the most likely scenario, BAI has estimated annual sales of 160,000 falope rings (sets) for the first year, with no increase over the next five years.
- The sales price for falope rings will be Rp 3,172 for the first year, increasing annually by 4.5%.
- Based on the assumptions used, the financial analysis indicates that PT Mantap would incur a net loss for the first two years of operations, and in the third year achieve a nominal gain. Not until year five is the company able to recover the losses incurred in the first two years. The cumulative gain in Year 5 is estimated at Rp 6.8 million.
- PKMI's share of the cumulative net income after taxes would amount to Rp 885,406, but there are not sufficient funds to cover the final loan payment or the cost of working capital in Year 6.
- As CV Almas is currently importing the product at an estimated profit of Rp 500 per unit, the feasibility of producing the product locally does not appear to be a more attractive option.
- With limited local demand, and high raw material costs, the production of falope rings in Indonesia is not viewed as a significant income generating opportunity.

Comparison of PKMI's Income Generating Opportunities

- In an effort to become financially self-sustaining by the Year 1999, PKMI has begun several income generating activities including a clinic in its headquarters and charging fees for training programs. Additional proposed income generating opportunities include providing quality of care training for hospitals, establishing laparoscopic repair and maintenance centers and producing falope rings.
- After a thorough review of the current and proposed activities, BAI recommends the following:

- The two greatest income generating opportunities appear to be in the provision of health care services and counselling at the established clinics, and in providing training programs in the area of VSC, both for the domestic health care industry and to other developing countries.
- Although it may be gradual, offering quality assurance training to hospitals in Indonesia could eventually generate income for PKMI, as the awareness of this need is growing. PKMI would need to work closely with DEPKES, requiring their full support.
- The private hospitals interviewed indicated a limited demand for repair and maintenance services offered by PKMI. Where PKMI may be able to offer these services is in the public hospitals that initially received the equipment free of charge.
- The financial analysis indicates that the production of falope rings in Indonesia does not represent significant income generating opportunities, due primarily to the limited demand for tubectomies (small economies of scale) and the high raw material costs.
- PKMI should be careful not to spread itself too thin in the quest for income generating opportunities. Greatest success is likely to be achieved by focusing on their current strengths, which include offering VSC services and counselling, as well as providing VSC training to the domestic and international medical profession.

Part One

I. Market Study

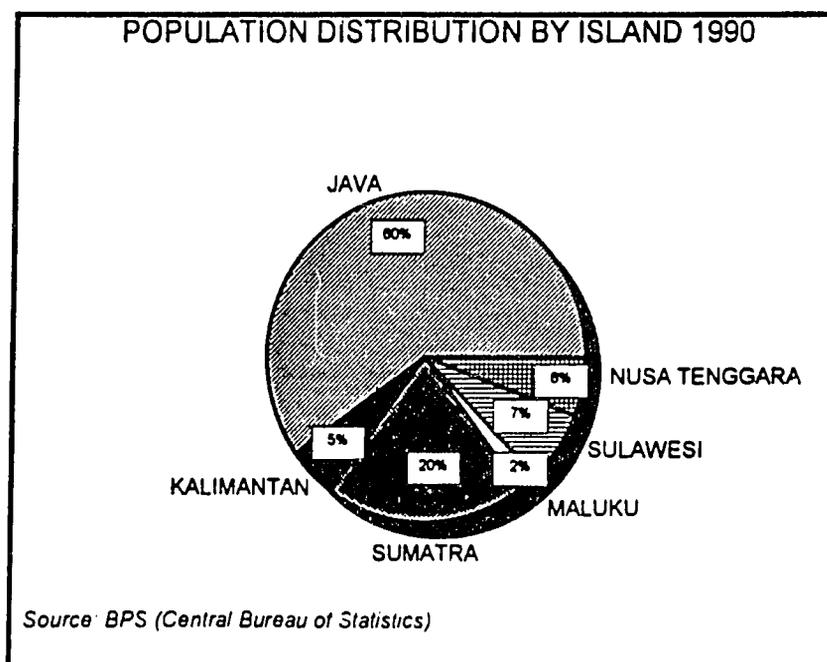
A. Overview of Sterilization Market in Indonesia

Demographic Overview

Indonesia is the fourth most populated country in the world, following China, India and the United States, with an estimated population of 191.8 million people by year end 1994. Urbanization has grown fairly rapidly. In 1980, approximately 22.3% of the population lived in urban areas. Today, over 34% live in urban areas. The current population reflects a growth rate of 1.7%, significantly below the 2.3% growth rate achieved from 1971 to 1980 and the 1.97% growth rate achieved from 1980 through 1990.

The country consists of over 13,000 islands, of which only 7% are inhabited. The population is unevenly distributed among islands and provinces. Nearly 60% of the countrys population live on Java. Sumatra is the next most populous island with just over 20% of the total population. Figure 1 presents the population breakdown by Indonesia's six major island groups in 1990.

Figure 1



Indonesia consists of 27 provinces, with smaller administrative units broken into regencies or municipalities, sub-districts and villages. In 1990, there were 241 regencies, 56 municipalities, 3,623 sub-districts, 6,670 urban villages and 62,065 rural villages.

In terms of density, Java is also the most densely populated island with a 1994 population density of approximately 800 people per square kilometer. Sumatra ranks second in terms of density with 82.7 people per square kilometer, followed by Sulawesi with 69.8 people per square kilometer. Although Kalimantan on the whole has only 18.3 people per square kilometer, it has sparsely populated hinterlands, with densely populated urban areas. Jakarta is by far the most densely populated province with 13,961 people per square kilometer.

Other basic demographic indicators are listed in Table 1.

Table 1
BASIC DEMOGRAPHIC INDICATORS

ITEM	1971	1980	1985	1990	1995
	Census	Census	Intercensal Survey	Census	Projection
Population (Millions)	119.2	147.5	164.6	179.4	195.1
Density (Pop/km ²)	62.4	77.0	85.0	93.0	102.0
Percent Urban	17.3	22.3	26.2	30.9	34.7
Reference Period	1967-70	1976-79	1981-84	1986-89	
Crude Birth Rate (CBR)	40.6	35.5	32.0	27.9	
Crude Death Rate (CDR)	19.1	13.1	11.4	8.9	
Total Fertility Rate (TFR)	5.6	4.7	4.1	3.3	
Infant Mortality Rate	142.0	112.0	71.0	70.0	
Life Expectancy					
Male	45.0	50.9	57.9	57.9	
Female	48.0	54.0	61.5	61.5	

Source: BPS Demographic and Health Survey, 1993

The preceding table provides data gathered in the 1971, 1980 and 1990 national census surveys, as well as the 1985 intercensal survey. As indicated, the crude birth rate (CBR)¹ from 1967 to 1970 was 41 per 1000 population. This decreased to 28 for the period between 1986 and 1989. The total fertility rate (TFR)² has decreased significantly over the past 20 years, from 5.6 children in 1971 to 3.3 children in 1990. By 1994, this had dropped even further to 3.022 children. Infant mortality has decreased from 142 per 1000 births in 1971 to 70 per 1000 births in 1990.

Much of the following data (up to 1991) has been obtained primarily from the 1991 Indonesian Demographic and Health Survey (IDHS), which presents data gathered from women aged between 15 and 49 throughout Indonesia. This survey is a result of the combined efforts of the Central Bureau of Statistics, the National Family Planning Coordinating Board and the Ministry of Health.

Family Planning in Indonesia

The government of Indonesia has devoted many of its development programs to controlling population growth, as rapid growth is considered a hindrance to economical development. In 1956, family planning activities were initiated by an organization working under the auspices of the International Planned Parenthood Federation, and in 1968, the government established a National Family Planning Institute, which shortly thereafter became known as the National Family Planning Coordinating Board (BKKBN). Programs were first initiated on Java and Bali (Repelita I- the First Five-Year Development Plan), and later expanded to other provinces known as the Outer Java-Bali Region I³ (Repelita II) and eventually incorporated all of the population with the third group called the Outer-Java Bali Region II (Repelita III).

¹ Crude birth rate expressed per 1,000 population.

² Total fertility rate expressed per woman

³ Outer Java-Bali I Region includes Aceh, North Sumatra, West Sumatra, South Sumatra, Lampung, West Nusa Tenggara, West Kalimantan, South Kalimantan, North Sulawesi, and South Sulawesi.

The objectives of the family planning program are 1) to reduce the birth rate, 2) to establish the small family norm and 3) to improve the health of mothers and children. Three dimensions have been defined in an effort to achieve these goals, namely 1) program extension, which involves increasing the number of acceptors, 2) program maintenance, which involves stabilizing the acceptance of family planning and improving the quality of services and 3) program institutionalization which encourages the greater participation of the government, community and private institutions in managing the program.

The government has been encouraging the provision of family planning services through the private sector in an effort to achieve self-sufficiency, by having acceptors pay for their services. This program was initiated in 1987 in the larger cities such as Jakarta, Bandung and Surabaya, and has now expanded to almost all of the municipalities throughout Indonesia. The logo of the program is the "Blue Circle", which can be found on various packaging of contraceptives sold to acceptors.

Sterilization in the context of family planning is not part of the government-sponsored family planning program, due primarily to opposition from religious leaders. This responsibility lies with PKMI, which was established in 1974 as a non-government medical professional organization responsible for voluntary sterilization training and research. The goal of PKMI is to promote and maintain the health and welfare of the family through the provision of voluntary sterilization services (VSC) in Indonesia.

Fertility Levels and Trends in Indonesia

As indicated in Table 1, overall fertility has declined from 5.6 children per woman in the late 1960s, to approximately 3.3 children per woman in 1990. The goal of the government is to achieve a fertility rate of 2.6 children per woman by the end of the sixth Five-Year Development Plan in 1999, and to eventually reach replacement level fertility, or 2.2 children per woman.

Fertility decline was most rapid between 1975 and 1985, and appears to have slowed since. Urban women tend to have, on the average, half a child less than rural women.

As the family planning programs were first initiated in Java and Bali, these regions represent the lowest fertility in the country today. Outer Java-Bali II is now experiencing a rapid decline. Fertility in Java-Bali is 23% lower than in Outer Java-Bali I, and 28% lower than Outer Java-Bali II. Four of the six provinces in the Java-Bali region have achieved fertility levels of just over 2 children per woman (Yogyakarta 2.04, East Java 2.13, Jakarta 2.14 and Bali 2.22). West Java still has a relatively high fertility rate of 3.37 children per woman.

The distribution of all women and of currently married women by the number of children ever born is indicated in Appendix I. No reproductive history is available for women who have not married. One third of all women have no children. As would be expected, for those that are currently married, the figure is substantially less at 8.3%. Over 14% of women have had one child and another 14.4% have had two children. Approximately 11.7% of all women have three children. The mean number of children ever born is 2.31 per woman, whereas the mean number of those born and still living is 2. For those that are currently married, 19.2% have 1 child and 20% have 2 children (See Appendix I).

The time interval between births has strong implications for the health of the children. Evidence indicates that short birth intervals (less than two years) elevate mortality risk for children. On the average, women in Java and Bali have intervals of 43 months, whereas in other regions, the median interval is 33 months.

Fertility among young women has declined substantially in the past two decades, but childbearing still starts relatively young in Indonesia. Over 12% of women aged between 15 and 19 are already mothers or are currently pregnant. Rural teenage women are three times as likely to have children before reaching the age of 20 than their urban counterparts.

Overall Awareness of Family Planning Methods and Sources

One of the most crucial elements to successful family planning is the dissemination of proper information about the various methods available and where to obtain them. In the 1991 IDHS, respondents were asked about their knowledge of the various contraception methods. The results are listed in Table 2 that follows.

Table 2
KNOWLEDGE OF CONTRACEPTIVE METHODS AND
SOURCE FOR METHODS

Percentage of ever-married women and currently married women who know contraceptive methods and who know a source for information or service, by specific methods, Indonesia 1991

Contraceptive Method	Know method		Know a source	
	Ever-Married Women	Currently Married Women	Ever-Married Women	Currently Married Women
Any method	93.9	94.9	91.9	92.9
Any modern method	93.6	94.4	91.9	92.9
Pill	90.4	91.2	87.5	88.6
IUD	82.0	83.2	77.6	78.9
Injection	86.5	87.6	83.8	85.1
Intravag	6.1	6.2	5.0	5.1
Condom	62.8	63.9	53.8	54.9
Norplant	66.0	67.5	60.1	61.4
Female sterilization	54.1	55.2	49.5	50.6
Male sterilization	29.2	29.9	26.8	27.6
Abortion	25.6	26.2	28.6	19.1
Any traditional method	28.0	28.7	19.1	19.7
Periodic abstinence	20.9	21.6	19.1	19.7
Withdrawal	14.0	14.5	na	na
Herbs	5.1	5.2	na	na
Massage	2.1	2.1	na	na
Other	0.6	0.7	na	na
Number of women	22909	21109	22909	21109
NA = Not Applicable				
Source: BPS Demographic and Health Survey 1991				

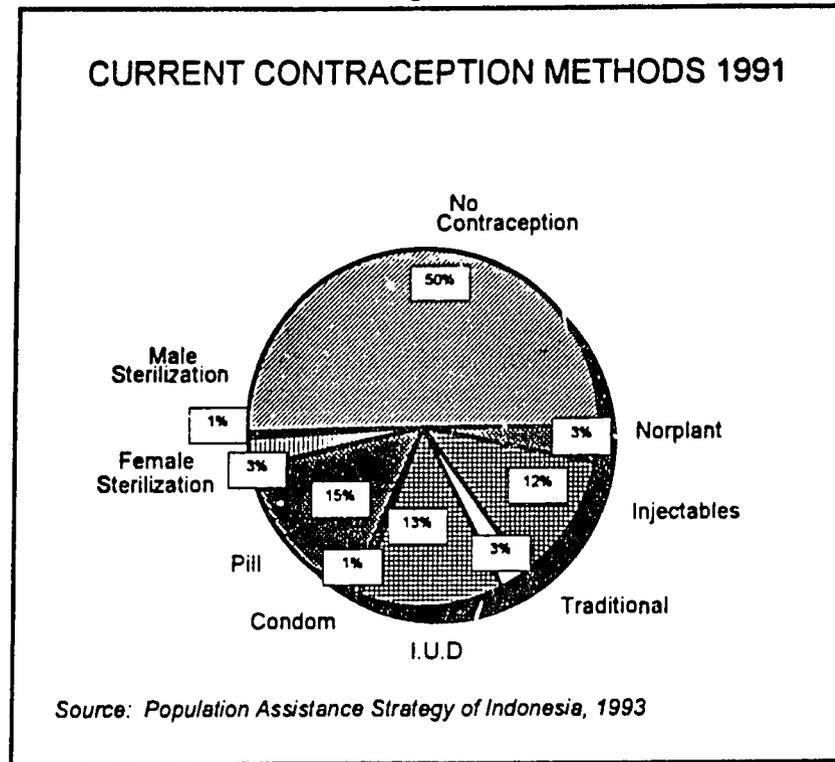
Almost all women who have ever married are familiar with some form of contraception (93.9%), and most of these women know a source (91.9%). Of the modern methods, the most familiar are the pill (90.4%), followed by injections (86.5) and the IUD (82%). Norplant is the next most well-known method of contraception (66%). The knowledge of most of these methods has remained relatively stable since the last survey in 1987, with the exception of Norplant. For married women, knowledge of this method has more than doubled over the past four years from 30% to 68%. Awareness of family planning methods correlates to education level. Approximately 80% of women with no education were familiar with family planning methods, whereas this figure increased to 95% for those with some primary school, increasing to nearly 100% for those with secondary or higher education. For all forms of contraception, the sources most often stated by respondents were government hospitals, health centers (Puskesmas) or health posts (Posyandu).

The government initiated private sector "Blue Circle" program is slowly gaining recognition in Indonesia, although in the 1991 survey only 33.8% had heard of the program, and nearly half of these people were not sure what it was.

Contraceptive Usage

Approximately 50% of the currently married women are using some form of contraception. The most common methods are the pill (14.8%), the IUD (13.3%) and injections (11.7%). Figure 2 illustrates the breakdown of contraception by method in 1991.

Figure 2



Contraception by Background Characteristics

Table 3 that follows lists current use of contraception by residence (urban or rural) and education. Contraception usage is slightly more prevalent in the urban areas, with the highest usage found amongst those with the highest education level. Approximately 36.5% of those with no education use some form of contraception, whereas 59.4% of those with some secondary education are using contraception.

Of those with some secondary education, the most popular modern method is the IUD (19.3%), followed by the injection (13.9%), the pill (11.2%) and then female sterilization (5%).

Table 3
CURRENT USE OF CONTRACEPTION BY
BACKGROUND CHARACTERISTIC

Percent distribution of currently married women by contraceptive method currently used, according to education and residence.

Method	<u>Residence</u>		<u>Education</u>			
	Urban	Rural	No Education	Some Primary	Completed Primary	Some Secondary
Any Method	55.7	47.2	36.5	47.2	54.4	59.4
Any Modern Method	51.1	45.4	35.6	45.2	52.2	53.8
Pill	13.8	15.2	12.5	16.5	17	11.2
IUD	14.2	13	10.1	11.3	13.6	19.3
Injection	14.4	10.6	7.3	10.7	14.4	13.9
Condom	1.8	0.4	0.2	0.4	0.6	2.2
Norplant	1.2	3.9	3.1	3.8	3.3	1.8
Female Sterilization	5.2	1.7	1.6	2.1	2.5	5
Male Sterilization	0.4	0.7	0.8	0.4	0.8	0.3
Any Traditional Method	4.6	1.8	1	2.1	2.1	5.6
Periodic Abstinence	2.4	0.6	0.2	0.5	0.8	3.4
Withdrawal	1	0.5	0.2	0.7	0.7	1.2
Herbs	0.9	0.4	0.4	0.6	0.5	0.7
Massage	0.2	0.2	0.2	0.3	0.1	0.1
Other	0.1	0.1	0.1	0.1	0	0.2
Not Currently Using	44.3	52.8	63.5	52.8	45.6	40.6
Total	100	100	100	100	100	100

Source: BPS Demographic and Health Survey, 1991

Payment for Contraception

The cost of contraception varies significantly by source. Approximately 45% of the clientele serviced by the government receive services free of charge, whereas in the private sector, only 12.7% of the patients receive the services free. Table 4 below indicates average payment for contraceptive services. Female sterilization is the most expensive birth control method, followed by Norplant and the IUD.

Table 4
PAYMENT FOR CONTRACEPTIVE
METHODS AND SERVICES

Percentage of current users of contraception receiving their method free and the mean cost of the method for those paying, by type of source, method and region, Indonesia 1991

Method	Government Source		Private Source	
	Free	Mean Cost	Free	Mean Cost
			Rp	Rp
Pill	36.2	364	16.9	1,432
IUD	71.7	2,432	21.8	27,447
Injection	14.3	1,906	3.6	3,925
Condom	69.2	819	8.6	2,149
Norplant	56.6	4,854	28.1	13,969
Female Sterilization	36.8	56,637	1.6	153,656
Region				
Java-Bali	39.3	4,002	9	19,873
Outer Java-Bali I	54.4	7,928	21.8	21,047
Outer Java-Bali II	62.4	6,383	27.4	20,331
Total	45	4,879	12.7	20,107

Source: BPS Demographic and Health Survey, 1991

Sterilization as a Family Planning Method

Awareness of Sterilization

Over half of the women are familiar with female sterilization (54.1%), and usually know a source (49.5%). Awareness of female sterilization amongst married women increased from 53% to 55% from 1987 to 1991, and the awareness of male sterilization increased from 27% to 30%. Approximately 77.5% of the respondents suggested that they would use a government source for female sterilization, with 75.7% suggesting a government source for male sterilization.

Although over half of the women are aware of female sterilization, it is not clear that the purpose is that well-understood. Table 5 indicates responses to the perceived best method of delaying or stopping childbearing.

Table 5
PERCEIVED BEST METHOD TO DELAY OR
LIMIT BIRTHS

Percent distribution of ever-married women by the method they think best to use to delay or limit births, Indonesia 1991

Method	Best for Delaying	Best for Limiting
Pill	28.3	15.1
IUD	20.7	15.5
Injection	22.1	15.5
Condom	1	0.3
Norplant	3.9	4.6
Female Sterilization	0.7	19.8
Male Sterilization	0.1	1
Periodic Abstinence	0.9	0.4
Withdrawal	0.4	0.2
Herbs	0.8	0.7
Massage	0.3	0.3
Other	0.4	0.3
Don't Know	20.4	26.2
Total	100	100

Source: BPS Demographic and Health Survey, 1991

Over a quarter of the women suggested that they did not know the best method of limiting births. Nearly 20% suggested female sterilization and only 1% suggested male sterilization.

Profile of Sterilization Acceptors

According to the data obtained in the IDHS, 2.7% of the respondents had used female sterilization as a method of birth control. The greatest percentage of these acceptors were in the 40-44 age group, had more than four children and some secondary education. Women living in urban areas are three times more likely to be sterilized than those in the rural areas.

Sterilization is much more prevalent in urban areas as compared to rural areas, with 5.2% of those using modern contraceptives in the urban areas choosing female sterilization as opposed to 1.7% in the rural areas. Female sterilization acceptors tend also to have higher levels of education.

Fees for Sterilization

Approximately 36.8% of the female sterilization acceptors receive the service free from government sources, whereas in the private sector, only 19.7% receive the service free. The mean cost for those using government sources is Rp 56,647. For those using private sources, the mean cost is Rp 153,656.

B. The Falope Ring Market

1. Supply Analysis

Falope rings were first developed in Korea by Professor Yoon in the mid-1970s. They were developed as a method of closing the fallopian tube during sterilization. Another method used in female sterilization is the clip. This method is not currently being used in Indonesia due to its expense and inaccessibility.

a. Major Imported Products

Currently, falope rings are being imported only by CV Almas, which has 100% of the government market. The government appears to eventually supply the private market. No other female sterilization products are currently being imported. According to several doctors interviewed, if a private hospital is in need of the falope rings, they do not have difficulties obtaining them from their contacts in the public sector.

According to information received from Cabot Medical Corporation in the United States, their falope ring, the FR-Band, has been sold to Indonesia in the past through USAID. They have expressed interest in selling this product to Indonesia at this time. This falope ring is designed to be used with the Cabot KLI applicator, and Cabot will disclaim all responsibility for results of any consequences if the FR-Band is used with other equipment. The silastic tubing that they use is manufactured specifically for Cabot. AVSC (the Association for Voluntary Surgical Contraception) uses these falope rings in their programs. According to the AVSC headquarters in New York, the current price for 100 pairs of falope rings is US\$ 150.

b. Major Competitor Products

Although there are currently no other competitive products for tubectomies being used in Indonesia, many of the tubectomies performed are following delivery and do not involve the use of falope rings. This directly impacts the demand for falope rings. A new technique for female sterilization has

been developed and is in the trial stage. This technique is non-surgical and involves injecting a drug into the fallopian tubes, similar to inserting an IUD. The drug, called Quinacrin, causes scar tissue to develop, which blocks the fallopian tubes, causing sterilization. The drug is being tested in other Asian countries. It is unclear at this stage whether or not it will be used in Indonesia. If it is adopted in Indonesia, it is expected that the demand for falope rings will decrease dramatically. The procedure is a much more cost-effective method of sterilization, as it does not require hospitalization and surgery. This will be one consideration when assessing the future demand for falope rings. It is important to avoid the danger of encouraging too much investment in products and technologies that are fast becoming outdated in mature markets unless they are appropriate to Indonesian needs.

2. Demand Analysis

a. Government Consumption

According to CV Almas, government consumption of falope rings is based on the annual budget, not on projected demand. This is apparent in the number of falope rings that they have purchased from CV Almas over the last several years. The number imported does not directly correlate to the number of tubectomies being performed, although in both instances, the numbers are decreasing.

Nonetheless, the government is likely to continue to include falope rings in their yearly budget in the near future. However, it is not possible at this point to predict how many falope rings the government will purchase over the next five years. There has been a noticeable decrease in the number of falope rings ordered by the government over the past three years as seen in Table 6 that follows:

Table 6
GOVERNMENT PURCHASES OF FALOPE RINGS
1990 THROUGH 1994

Year	Sets Purchased	Price Paid per set	Number of Tubectomies
1990	150,000	2,580	112,174
1991	63,000	2,580	100,548
1992	302,550	2,664	93,106
1993	195,185	2,908	89,969
1994	138,214	3,080	N.A.

Source: CV Almas, PKMI

b. Private Consumption

Discussions with private practitioners indicate that the demand for tubectomies performed in private facilities is quite small. All of the doctors interviewed for this study suggest that the majority of the female sterilizations in private facilities are performed after giving birth and do not involve the use of laparoscopy equipment and falope rings.

At the same time, little interest in performing tubectomies in private facilities was displayed by the private practitioners interviewed. The practitioners are much more likely and willing to perform tubectomies in the public facilities where they feel their services are needed. Tubectomies do not represent significant financial opportunities for the private facilities.

c. Sterilization Trends in Indonesia

As can be seen in the following graph (Figure 3), sterilization, particularly female sterilization grew quite strongly from 1974 through 1984 (See Table 7), following the establishment of PKMI. It continued to increase slowly until 1990, but both tubectomies and vasectomies have been on a steady decline since.

Figure 3

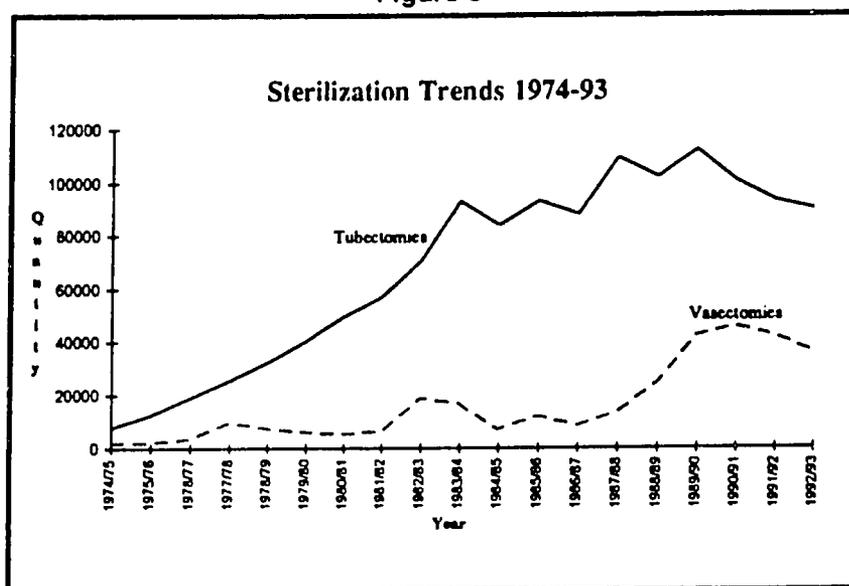


Table 7
GROWTH OF TUBECTOMY AND VASECTOMY ACCEPTORS
20 YEAR TREND

Year	Tubectomies	Vasectomies	Total
1974/75	7,724	1,959	9,683
1975/76	12,619	2,115	14,734
1976/77	19,020	3,487	22,507
1977/78	25,462	9,556	35,018
1978/79	32,425	7,444	39,869
1979/80	40,635	6,045	46,680
1980/81	49,839	5,306	55,145
1981/82	57,015	6,446	63,461
1982/83	70,595	18,861	89,456
1983/84	93,351	16,602	109,953
1984/85	83,916	7,054	90,970
1985/86	93,287	11,996	105,283
1986/87	88,128	8,343	96,471
1987/88	109,421	13,408	122,829
1988/89	102,123	24,259	126,382
1989/90	112,174	42,120	154,294
1990/91	100,480	45,441	145,921
1991/92	93,106	41,978	135,084
1992/93	89,969	36,020	125,989

Source: PKMI

Industry sources suggest several reasons for this decline.

1. The introduction of new long-term contraceptive methods such as Norplant and injectables is a major factor contributing to the decrease in the number of tubectomy acceptors in the last five years. Those marketing Norplant have encouraged its usage, relating it to the traditional practice of "susuk", a method used by the traditional doctors (dukun) to make women more beautiful by magically inserting something subcutaneously. In the short term, Norplant is substantially less expensive than sterilization, as seen in Table 4.
2. Poor information dissemination is another major factor contributing to the decrease in tubectomy acceptors. Information on new family planning methods is much more prevalent than that for sterilization. When discussing the options for family planning, local health clinics often do not mention sterilization as an option.
3. The Muslim religion does not recognize sterilization (considered the mutilation of an organ) as a family planning alternative. These attitudes greatly influence the contraceptive choices of the Muslim people.
4. As the practice of coercion has diminished in Indonesia, so has the number of sterilization acceptors.

Prospects for Sterilization in the Future

Extensive research has been conducted examining the reasons why acceptance of voluntary surgical contraception (VSC) is low in Indonesia. Background papers prepared for the National MKET Review meeting, using input from a study conducted by Survey Research Indonesia (SRI), conclude that the reason VSC acceptance is low is not because of lack of supply, but rather lack of demand. There are adequate facilities that are accessible, the quality of services is reported as good, and prices do not appear to be a major obstacle. However, very few of those couples that do not want to have more children consider VSC. Recent research offers the following suggestions to increase the VSC acceptance in Indonesia:

- The capability of front line personnel needs to be improved in order to identify potential VS clients, provide the correct information about VS, correctly screen both male and female clients, make referrals and follow-up on post-surgical clients for appropriate action.
- The linkage between VS units and the surrounding health care community must be strengthened.
- A clearer understanding of the operation, its advantages and risks must be provided to the potential acceptors.
- Satisfied acceptors must be used to motivate potential acceptors.
- The capability of the hospital staff in using social marketing techniques to promote the acceptance of VS must be improved.

Despite these recommendations, industry professionals suggest that the number of sterilization acceptors over the next five year period will not continue to decline, but will steady off to approximately 125,000 total acceptors per year, with two thirds being women, or approximately 83,000 tubectomies per year.

The vast majority of the sterilization procedures will be performed in public facilities. Demand for these services in the private hospitals and clinics is very small, and not likely to increase significantly. Many of these sterilizations will be post-partum, and will not involve the use of falope rings.

3. Product Pricing

Falope rings are always sold in sets, as each tubectomy requires two falope rings. The price paid by the government for each set of falope rings has increased steadily over the past several years (see Table 6). In 1990 and 1991, the purchase price was Rp 2,580. This increased to Rp 2,664 in 1992, increasing to Rp 2,908 in 1993 and for the most recent order, the government paid Rp 3,080 for each set. Therefore, over the past five year period, the annual average price increase was approximately 4.5%. In the financial projections that follow, BAI assumes an annual price increase of 4.5%.

4. Government Attitudes toward Falope Rings

In view of family planning in Indonesia, one of the government's primary objectives is to eventually achieve replacement level fertility, or 2.2 children per woman. By the end of the sixth Five-Year plan in 1999, the goal is to have achieved a fertility rate of 2.6 children per woman. The government recognizes that sterilization will assist in achieving this goal, and supports PKMI activities. Sterilization is unlikely to be incorporated into the scope of BKKBN activities, however, due to opposition from religious leaders. The government is hesitant to promote sterilization in fear of the entire family planning program being jeopardized. It has been suggested, however, that PKMI could make more of an effort to promote sterilization through social marketing. As long as the government is not directly involved, they are likely to continue supporting the PKMI activities.

The government maintains a strong relationship with CV Almas, and will continue to source their falope rings through CV Almas (or eventually from PT Mantap if feasible).

Part One

II. Feasibility Study of Falope Ring Investment

Background

Under Indonesian law, a professional organization such as PKMI is not allowed to raise funds. For this reason, in 1990, PKMI and a commercial company, CV Almas, jointly established a new company, PT Mantap Pratama, to carry out feasible income generation activities for PKMI. As of yet, no line of business has been established. The objectives behind the establishment of PT Mantap Pratama are stated in the original proposal as follows:

To create a viable financial arm that can assist PKMI in generating funds. It is anticipated that this will add clout to PKMI in the eyes of the donor community and the government agencies such as BKKBN and DEPKES, at the same time allowing PKMI to become somewhat independent. By beginning this capital formation, the goals of PT Mantap Pratama (PKMI) will be further enhanced.

Funds generated by PT Mantap Pratama will be used directly to support PKMI organizational development, program activities and the start up of new and innovative projects.

CV Almas, PKMI's partner, is a successful manufacturer of aluminum and steelware primarily for the export market. The company also manufactures several stainless steel products for the Indonesian medical industry including non-scalpel vasectomy kits, and hence, their strong relationship with the government, particularly the Ministry of Health. CV Almas has been appointed by the government as the sole supplier of falope rings, which they have been importing and supplying to the government for the past four years.

The first business activity planned for PT Mantap Pratama is the production of falope rings. In preparation, several activities have been conducted including the design and registration of the logo and brand name of the falope ring and the purchase of a falope ring cutting machine. In order to start production of this product, however, the raw materials and a packaging machine need to be purchased. PT Mantap Pratama is requesting a soft loan to cover the costs of purchasing the raw materials and the packaging machine. This section assesses the feasibility of producing the falope rings in Indonesia, with a view towards providing recommendations regarding the loan proposal.

A. Capital Investment

There are three major components in the capital investment required for this venture, namely 1) the cutting machine, 2) the packaging machine and 3) the raw materials. The raw materials are a working capital requirement.

1. Cutting Machine

PT Mantap Pratama has already purchased the cutting machine from a company in Korea with the intention of producing the falope rings in Indonesia. The machine is located at the PKMI office in Jakarta. Two staff have been trained to use the machine. According to PKMI, the cost of the machine was Rp 30,000,000.

2. Packaging Machine

a. Cost

According to PKMI and CV Almas, the cost of the packaging machine, one component of the proposed loan, is approximately Rp 160,000,000.

b. Usage (Allocation of Expenses between PKMI and CV Almas)

Given the limited demand for falope rings in Indonesia, and hence the relatively low sales projections, the packaging and cutting machines are only expected to require usage for production during one month out of each year. The machines are likely to remain idle throughout the rest of the year. Although it had initially been suggested by PKMI, discussions with CV Almas indicate that they do not have a need for the machines at the factories in Bandung.

Therefore, the allocation of expenses between PKMI and CV Almas is irrelevant. All of the production expenses will be allocated to PT Mantap Pratama.

3. Raw Materials

The raw material used in the production of the falope rings is silastic tubing (a silicon based product). In the proposal provided to PROFIT, CV Almas/PKMI suggest that the silastic tubing be imported from Dow Corning. Although Dow Corning previously manufactured this product, recent expensive lawsuits over the usage of silicon products within the body (particularly for breast implants), encouraged Dow Corning to sell their medical division. This product is no longer produced by Dow Corning. Because of the strict Food and Drug Administration (FDA) regulations, there is now only one company in the United States licensed to produce falope rings, namely Cabot Medical. The tubing supplied to Cabot Medical is supplied to them only, under strict government regulations. Cabot Medical is unwilling to provide the name of the silastic tubing supplier.

According to Dow Corning in Singapore, obtaining this product is now very difficult. The product is still produced, but should not be sold for internal medical use. BAI has contacted a major supplier of tubing for the medical industry in Singapore by the name of Mopi Private. This company suggests that although they are not currently producing silastic tubing for this purpose, given the exact specifications, they would be willing to produce the mold. With the limited demand for the raw material, this may

be an expensive option. They have not yet provided BAI with an estimate of the total cost.

CV Almas suggests that they can obtain the raw material for approximately US\$ 130 per meter. They have been unable to provide the name and location of the supplier, therefore BAI has not been able to verify this price. For the purposes of this study, however, BAI has used this price as the raw material cost assumption.

Although there is no HS (Harmonized System) Code that appropriately suits this silastic tubing, BAI assumes an import duty of 5% and VAT of 10%. According to CV Almas, they have been able to negotiate these duty rates with the government in the past (for falope rings), as the product does not compete with the local industry and is a requirement for the medical industry. Using these assumptions, the total cost per meter (inclusive of import duties and taxes) is assumed to be approximately US\$ 150.

CV Almas suggest that each meter produces approximately 300 pieces, or 150 sets of falope rings. At this price, using an exchange rate of Rp 2,150/US\$ 1, the raw material cost per set is Rp 2,150.

The largest component for the proposed loan is the cost of the raw materials (working capital). The total raw material cost is based on the raw material cost per set times the number of sets to be produced. As BAI assumes production for the first year to be 160,000 sets, the raw material requirement is estimated at Rp 344,000,000. Packaging costs are assumed at Rp 200 per set, or a total of Rp 32,000,000. The cost of sterilization is incorporated into the cost of packaging.

Total raw material requirements for the first year of operation are estimated at Rp 376,000,000.

B. Operating Expenses

1. Raw Materials

As discussed above, raw materials comprise the largest portion of the working capital requirements, as well as the largest component of the proposed loan. The raw materials and packaging requirements are expected to cost a total of Rp 376,000,000 in Year 1 of production. Raw material and packaging costs are expected to increase by 3% each year.

2. Other Expenses

Other operating expenses include direct labor, factory overhead, sales and marketing and general administration. Following are the assumptions used for these expenses:

Expense	Assumption
Direct labor	2.5% of raw material costs
Direct factory overhead	3% of sales
Sales and Marketing/Gov. Relations	15% of sales
General/ Administration	5% of sales

These assumptions are based on information provided by CV Almas. The high cost of sales and marketing (15% of sales) is used primarily for maintaining government relations.

Interest on the loan is assumed at 3%, as suggested by PROFIT.

Depreciation of the machinery is based on a 10-year straight-line method. With the limited usage of the machines, 5-year depreciation can not be justified.

3. Rate of Cost Increase Assumed

BAI assumes that the cost of raw materials will increase by 3% each year, and the other expenses will remain as percentages of total sales.

C. Forecast Revenues and Underlying Assumptions

1. Level of sales

Most Likely Scenario

Based on the information provided by CV Almas on the level of government purchases over the last several years, and our assessment of the demand for falope rings, BAI has projected total sales of 160,000 falope ring sets for the first year.

It is estimated by industry experts that the number of tubectomies will level off to approximately 83,000 per year. BAI does not project a drop in sales, but an increase is also unlikely based on past trends. For this reason, annual sales projections of 160,000 sets are forecast for the next five years, with no growth.

The number of tubectomies performed as compared to the number of falope rings purchased indicates that there is a substantial number of falope rings lost in the distribution chain. The government is still likely to purchase a significant amount more than are actually used.

2. Sales price

Although the original proposal by PKMI suggested that the sales price for falope rings be Rp 2,500 per set, past trends indicate that the price paid by the government has increased, not decreased. Therefore, BAI assumes a sales price of Rp 3,172 for the first year, increasing by 4.5% each year. This is based on a 4.5% increase over the most recent sale to the government at Rp 3,080 per set.

These rings are available for purchase from Cabot Medical (if using the KLI machines) for Rp 3,255 per set (prior to import duties). Cabot Medical has expressed interest in again selling this product to Indonesia, and is willing to negotiate on price.

3. Sales growth

Most Likely Scenario

Under the most likely scenario, sales are not anticipated to grow, but rather to remain steady over the next five years at 160,000 sets per year.

Optimistic Scenario

The optimistic scenario has Year 1 base sales as 160,000 increasing by 5% each year for the next five years. This assumes that Indonesia is able to export falope rings to other Asian markets. These markets have not yet been defined. AVSC is active in most of the other Asian markets, and has indicated that they purchase all of their falope rings from Cabot Medical in the United States.

4. Profit Margin

Using the above assumptions, PT Mantap Pratama is not likely to make a profit until year three. Even then, the accrued losses from the first two years of operations will not have paid off until year five, when the cumulative pre-tax operating profit will be Rp 6.8 million.

5. Accounts Receivable

BAI assumes that the government would pay for all falope rings the month they are produced.

6. Use of Packaging Machine fo Non-Project Purposes

It was initially suggested that CV Almas would be able to use the packaging machine while it was not being used at PT Mantap Pratama. As the packaging machine will be located in the PT Mantap Pratama office in Jakarta (PKMI headquarters), it is unlikely that CV Almas will benefit from usage of the machine. In meetings with CV Almas at their plant in Bandung, they had no apparent intention to use the machine, and suggested that perhaps it could be rented to a third party.

Two scenarios were discussed: 1) the rental of the machine for use by a third party during the months where it is not in use by PT Mantap Pratama, and 2) the possibility of producing and marketing small bags for use in the pharmaceutical and candy industries.

Both of these scenarios would represent financial gain, but as there is currently no defined market for either product, and both machinery leasing and plastic bag making are clearly not functions that utilize the expertise of PT Mantap Pratama (PKMI), BAI has not incorporated these potential opportunities in the financial projections.

Table 8
MOST LIKELY SCENARIO
PT MANTAP PRATAMA

Profit and Loss Statement in Rupiah					
	1995	1996	1997	1998	1999
Sales increase	none	none	none	none	none
Sales (sets)	160,000	160,000	160,000	160,000	160,000
Price (set)	3,218	3,363	3,514	3,672	3,838
TOTAL SALES	514,880,000	538,049,600	562,261,832	587,563,614	614,003,977
Direct material cost - Rp 2,150 per set	344,000,000	354,320,000	364,949,600	375,898,088	387,175,031
Direct packaging material cost - Rp 200/set	32,000,000	32,960,000	33,948,800	34,967,264	36,016,282
Direct labor to raw material cost - 2.5%	8,600,000	8,858,000	9,123,740	9,397,452	9,679,376
Direct overhead to sales - 3%	15,446,400	16,141,488	16,867,855	17,626,908	18,420,119
Sales & Marketing - 15%	77,232,000	80,707,440	84,339,275	88,134,542	92,100,597
G & A - 5%	25,744,000	26,902,480	28,113,092	29,378,181	30,700,199
OPERATING EXPENSE	503,022,400	519,889,408	537,342,361	555,402,436	574,091,603
GROSS OPERATING PROFIT	11,857,600	18,160,192	24,919,471	32,161,179	39,912,374
Less Interest Expenses	16,080,000	12,060,000	8,040,000	4,020,000	0
Less Depreciation	16,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Net Income/Loss Before Tax	-20,222,400	-9,899,808	879,471	12,141,179	23,912,374
Cumulative Loss/Gain	-20,222,400	-30,122,208	-29,242,737	-17,101,558	8,810,816
Less Income Tax - 35%	0	0	0	0	2,383,785
NET INCOME AFTER TAX	-20,222,400	-9,899,808	879,471	12,141,179	21,528,589

continued

Table 8
Continued

CASH FLOW STATEMENT					
	1995	1996	1997	1998	1999
CASH INFLOWS:					
Sales	514,880,000	538,049,600	562,261,832	587,563,614	614,003,977
Loan Proceeds	536,000,000				
Total Inflows	1,050,880,000	538,049,600	562,261,832	587,563,614	614,003,977
CASH OUTFLOWS:					
Capital Expenditure	160,000,000				
Operating Expenses	503,022,400	519,889,408	537,342,361	555,402,436	574,091,603
Interest	16,080,000	12,060,000	8,040,000	4,020,000	0
Income Tax	0	0	0	0	2,383,785
Principal Repayment	0	134,000,000	134,000,000	134,000,000	134,000,000
Total Outflows	679,102,400	665,949,408	679,382,361	693,422,436	710,475,389
NET CASH FLOW	371,777,600	-127,899,808	-117,120,529	-105,858,821	-96,471,411
CUMULATIVE CASH FLOW	371,777,600	243,877,792	126,757,263	20,898,442	-75,572,970
LOAN REPAYMENT SCHEDULE					
	1995	1996	1997	1998	1999
Outstanding Principal - beginning of Year	536,000,000	536,000,000	402,000,000	268,000,000	134,000,000
Principal Payment - beginning of Year	0	134,000,000	134,000,000	134,000,000	134,000,000
Outstanding Principal - End of Year	536,000,000	402,000,000	268,000,000	134,000,000	0
Interest Payment - End of Year	16,080,000	12,060,000	8,040,000	4,020,000	0

Table 9
OPTIMISTIC SCENARIO
PT MANTAP PRATAMA

	Profit and Loss Statement in Rupiah				
	1995	1996	1997	1998	1999
Sales increase	none	5%	5%	5%	5%
Sales (sets)	160,000	168,000	176,400	185,220	194,481
Price (set)	3,218	3,363	3,514	3,672	3,838
TOTAL SALES	514,880,000	564,952,080	619,893,670	680,178,329	746,325,672
Direct Material Cost per Set	2,150	2,215	2,281	2,349	2,420
Direct Packaging Material Cost per Set	200	206	212	219	225
Direct material cost - Rp 2,150 per set	344,000,000	372,036,000	402,356,934	435,149,024	470,613,670
Direct packaging material cost - Rp 200/set	32,000,000	34,608,000	37,428,552	40,478,979	43,778,016
Direct labor to raw material cost - 2.5%	8,600,000	9,300,900	10,058,923	10,878,726	11,765,342
Direct overhead to sales - 3%	15,446,400	16,948,562	18,596,810	20,405,350	22,389,770
Sales & Marketing - 15%	77,232,000	84,742,812	92,984,050	102,026,749	111,948,851
G & A - 5%	25,744,000	28,247,604	30,994,683	34,008,916	37,316,284
OPERATING EXPENSE	503,022,400	545,863,878	592,419,953	642,947,744	697,811,932
GROSS OPERATING PROFIT	11,857,600	19,088,202	27,473,716	37,230,585	48,513,740
Less Interest Expenses	16,080,000	12,060,000	8,040,000	4,020,000	0
Less Depreciation	16,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Net Income Before Tax	-20,222,400	-8,991,798	3,433,716	17,210,585	32,513,740
Cumulative Loss/Gain	-20,222,400	-29,214,188	-25,780,482	-8,569,897	23,943,843
Less Income Tax - 35%	0	0	0	0	8,380,345
NET INCOME AFTER TAX	-20,222,400	-8,991,798	3,433,716	17,210,585	15,563,498

continued

Table 9
Continued

CASH FLOW STATEMENT	Projected Cash Flow in Rupiah				
	1995	1996	1997	1998	1999
CASH INFLOWS:					
Sales	514,880,000	564,952,080	619,893,670	680,178,329	746,325,672
Loan Proceeds	536,000,000				
TOTAL	1,050,880,000	564,952,080	619,893,670	680,178,329	746,325,672
CASH OUTFLOWS:					
Capital Expenditure	160,000,000				
Operating Expenses	503,022,400	545,883,878	592,419,953	642,947,744	697,811,932
Interest	16,080,000	12,060,000	8,040,000	4,020,000	0
Income Tax	0	0	0	0	8,380,345
Principal Repayment		134,000,000	134,000,000	134,000,000	134,000,000
TOTAL	679,102,400	691,943,878	734,459,953	780,967,744	840,192,277
NET CASH FLOW	371,777,600	-126,991,798	-114,566,284	-100,789,415	-93,866,605
CUMULATIVE CASH FLOW	371,777,600	244,785,802	130,219,518	29,430,103	-64,438,502
<hr/>					
LOAN REPAYMENT SCHEDULE	1995	1996	1997	1998	1999
Outstanding Principal - beginning of year	536,000,000	536,000,000	402,000,000	268,000,000	134,000,000
Principal Repayment - beginning of year	0	134,000,000	134,000,000	134,000,000	134,000,000
Outstanding Principal - end of year	536,000,000	402,000,000	268,000,000	134,000,000	0
Interest Payment - end of year	16,080,000	12,060,000	8,040,000	4,020,000	0

D. Evaluation of PT Mantap's Strengths and Weaknesses

The financial statements in the preceding section, using the assumptions as stated, indicate that the production of the falope ring is not financially feasible at this time in Indonesia. This is due primarily to the high raw material costs, and the limited demand in Indonesia for falope rings.

Nevertheless, BAI has endeavored to objectively address the following points as if the project were financially feasible. Cheaper raw material costs would make a substantial difference in the feasibility of the project.

1. Manufacturing

Two staff from PKMI have visited Korea and have learned how to use the cutting machine. The machine is not sophisticated, used only to cut through the silastic tubing. Preparation of the final product will require using the cutting machine to cut the tubing, sterilizing the product (to be contracted out) and packaging the falope rings. The procedure is quite simple, and PT Mantap Pratama should have no significant difficulties carrying out the manufacturing process.

Repair and maintenance of the machines can be done locally, and there should be no difficulties procuring spare parts. CV Almas maintains many manufacturing machines at the plant in Bandung, and would be available when needed to assist with the machinery should difficulties arise.

2. Reputation in the Market

As PT Mantap Pratama has not yet become operational, it has not developed a reputation in the market. Both PKMI and CV Almas maintain good relationships with the government, and these relationships will greatly benefit PT Mantap Pratama. It is assumed that the government of Indonesia will remain the largest client of PT Mantap Pratama.

3. Management Capacity

No organizational structure has yet been developed for PT Mantap Pratama. CV Almas intends to have little involvement in the management of the enterprise. Therefore, it is anticipated that the two support staff at PKMI who have visited Korea and learned how to use the machinery, will be responsible for the actual production of the falope rings. The production of this product for one years supply is not anticipated to require more than one month of work. One person will likely need to be hired to manage the operation. According to the proposal by PKMI, the organization has already hired one typist to manage the routine administrative activities. This typist will be supervised by the executive secretary of PKMI.

The sales and marketing will consist primarily of maintaining strong government relationships, as the government will continue to constitute the vast majority of sales. These relationships have been developed by both PKMI and CV Almas and will be maintained by the directors of both organizations.

4. Production of Quality Product

The process of producing falope rings is quite simple, and using the appropriate equipment and trained staff, should guarantee a high quality product. PKMI, being the front-runner in quality assurance in Indonesia is likely to acknowledge the importance of producing a quality product. It should be noted, however, that as this product will be used in the medical industry, strict quality control standards must be adhered to.

Recent concerns about the use of silastic tubing, or silicon products inside the body indicate that potential problems could arise and further research into the safety of the falope ring may be required. As discussed in the first section of the report, Cabot Medical, the only producer of falope rings in the United States, will not take responsibility for their product, if it is not used with the laparoscopy equipment that they recommend.

As the sterilization process will be contracted out, PKMI will need to commission a company with a good reputation in the market to perform these services. Close monitoring will be required by PKMI.

E. Evaluation of PKMI's Appropriate Share of the Investment

PKMI and CV Almas have an agreement that PKMI will have a 20% shareholding in the venture, with CV Almas holding the remaining shares. Although CV Almas is the strong partner financially, this venture is not relying on financial assistance from CV Almas. Rather, PT Mantap Pratama is requesting a loan to cover most of the working capital (the raw materials) and the purchase of the packaging machine. PKMI will be responsible for the actual day-to-day operations of the business. CV Almas will assist in maintaining their current relationships with the government and provide maintenance of the cutting and packaging machine.

BAI maintains that the ownership of the venture should be split evenly between PKMI and CV Almas for the reasons discussed below.

1. Capital Contribution

PKMI, through its access to soft loan funds will enable PT Mantap to cover expenditures and star-up costs relatively cheaply.

2. Management and Monitoring of PT Mantap Pratama

The day to day activities of PT Mantap Pratama (falope ring production) will be undertaken by PKMI staff. CV Almas involvement will be limited to machinery maintenance support, as well as maintaining the government contacts.

3. Access to Soft Loan

As a non-governmental organization involved in the provision of family planning services, PKMI actively fosters cooperative relations with various international organizations, especially donor agencies such as AVSC, URC/CHS (University Research Corporation/Center for Human Resources), JH-PIEGO (John Hopkins Training Center), Pathfinder International and PROFIT. Through these relationships, PKMI occasionally has access to soft loans for activities that the donors deem worthy. In this instance, PKMI has approached the organization PROFIT with the proposal to produce falope rings. The PROFIT Project seeks to assist the private sector participation in family planning-related activities in developing countries. PROFIT's primary criteria when providing loans are the commercial sustainability and family planning impact of a proposed project. Without the assistance of an organization such as PROFIT, it is unlikely that PT Mantap Pratama could obtain a loan at 3% interest.

4. Strong Relationships with BKKBN and the Department of Health

The relationships with BKKBN and the Department of Health are of vital importance to the success of falope ring sales in Indonesia. PKMI has worked to establish strong relationships. At the same time, CV Almas has also developed a relationship as one of the government's medical suppliers.

F. Analysis of Financial Impact

1. PT Mantap Pratama

Most Likely Scenario

As can be seen in the profit and loss statement for the Most Likely Scenario (Table 8), PT Mantap Pratama incurs a net loss for the first two years of operations, and in the third year has a nominal gain. Not until year five is the company actually able to recover the losses incurred in the first two years. The cumulative gain in Year 5 is estimated at Rp 6.8 million.

Because of the losses, no income tax is calculated for the first four years of operation. In Year 5, income tax amounting to Rp 2.38 million is charged on the cumulative gain.

In reviewing the projected cash flow, by the second year of operations, the net cash flow has a negative balance. By Year 5, the cumulative cash flow has a negative balance of -Rp 75.57 million.

Optimistic Scenario

The results of the optimistic scenario (Table 9) are slightly more positive, but again, no cumulative gain is seen until the fifth year of operations. This cumulative gain before income tax is estimated at Rp 23.9 million.

The projected cumulative cash flow, however, also has a negative balance in Year 5 of -Rp 64.4 million.

In both scenarios, after five years of operation, PT Mantap Pratama no longer has enough accumulated funds to maintain operations, and is likely to incur difficulties repaying the loan. There is also not sufficient working capital for Year 6 (2000).

2. PKMI

According to the original agreement between PKMI and CV Almas, PKMI will have a 20% share in PT Mantap Pratama. Based on the financial projections provided in the preceding analysis, the financial impact on PKMI of producing falope rings in Indonesia is as follows:

After five years of operation, the cumulative net income before taxes is forecast to be Rp 6,810,816 million. When taxes are deducted, the accumulated net gain after taxes would amount to Rp 4,427,301. With the current structure of PT Mantap Pratama (PKMI holding 20% of the shares), PKMI's share of the cumulative net income after taxes would amount to Rp 885,406. Although a small net income is achieved in Year 5, there are not sufficient funds to cover the loan repayment or purchase raw materials for Year 6 production.

3. CV Almas

CV Almas is currently importing falope rings from Korea and making a profit. The financial impact of producing these rings in Indonesia, as opposed to importing them is reviewed below:

Current Operations

According to the information provided by CV Almas, the company is currently making a profit of approximately Rp 500 per falope ring set. For the most recent government order of 138,214 sets, their profit is estimated at approximately Rp 69 million. (See following assumptions).

Assumptions	Rupiah
Purchase Price from Supplier:	2,000
Import Duties and taxes	300 (estimated at 5% import duty, 10% VAT)
Administration (5% of purchase price)	100
Distribution/Other (4%)	80
Sales & Marketing (govt. relations)	100
Total Cost:	2,580
Sales Price to Government:	3,080
Profit Per Unit:	500
Number of Units Ordered:	138,214
Total Profit (Year 1)	69,107,000

NOTE:

BAI has been unable to verify the exact import duty, as the HS Code provided by CV Almas does not correspond with the product (HS 9018.39.000). The description of this product in the import statistics is "Other catheter, cannulae, etc." In the Import Tariff Schedule, the description is "Other instruments and appliances used in dental sciences". As the quantity of imports is so small, it is not possible to identify where exactly imports of this product are recorded. At any rate, BAI has assumed that the import duties will not be higher than 5%, as the product does not threaten the local industry. VAT taxes of 10% are standard.

Proposed Project

Despite holding a majority share in PT Mantap Pratama, no accumulated net income is gained for the first four years of operation. In Year 5, CV Almas' share of accumulated net income after taxes would equate to Rp 3,541,624. Difficulties in repaying the last loan installment are still apparent.

Based on the financial assumptions used, it is clear that CV Almas generates more income by importing the final product.

For reference, a summary financial statement of CV Almas for 1991 and 1992 is provided in Appendix 2.

G. Conclusions and Recommendations

Unless PT Mantap Pratama is able to procure raw materials at a much cheaper price, the prospect of producing falope rings in Indonesia does not appear feasible.

Part Two

I. Comparison of PKMI's Income Generating Opportunities

A. Current and Proposed Activities

PKMI's funds are derived primarily from international donor agencies and BKKBN. They are aware that financial assistance from donor agencies is diminishing, and hope to become financially self-sustaining by 1999. In order to support their programs, PKMI has begun several income generating activities including a clinic in its headquarters and charging fees for training programs. The following section discusses the current and proposed income generating activities with a view towards assessing which opportunities represent the greatest potential.

1. Clinics: Fees for services

PKMI has established a clinic at its headquarters in Jakarta offering a variety of services. The services currently offered include:

- laboratory services,
- radiology services,
- family planning consultation and services, and
- vasectomies.

Discussions with industry experts suggest that the clinics represent one of PKMI's greatest and most feasible income generating opportunities. The Pathfinders organization fully supports the establishment of these clinics. The goal is that after two years of operation, they should be fully self-sustaining. The Jakarta clinic opened in early 1994. A second clinic will be opened in Surabaya, and a third is planned for Semarang. The clinic in Jakarta presently generates enough income to cover the costs of the staff, inventory and overhead. BAI's assessment is strictly qualitative, based on

discussions with practitioners and industry experts, whom all felt that the clinics were a good idea. One interviewee felt strongly that PKMI should become the family planning expert in all areas, including fertility problems. The clinics could be a one-stop facility for anything related to family planning.

Once the PKMI clinics are recognized by clients as offering professional family planning services, it is anticipated that demand will grow quite rapidly. The long waiting time at public facilities will encourage people to seek alternative sources, particularly if the fees remain affordable.

2. Sterilization Training

Developing Local Expertise

PKMI currently offers sterilization training programs to healthcare specialists throughout Indonesia. The education and training program is broken down into three categories, namely doctor training, paramedic training and counseling training. PKMI is recognized as the leading organization for sterilization training in Indonesia. This program has proven quite successful. In the most recent work period, ending in December 1993, 126 doctors and 145 paramedics had been trained, and 103 counselors had received training. The organization also trains trainers, and conducts post-training monitoring.

"South to South" Cooperation

PKMI's reputation has extended beyond national boundaries, and it appears that there exists significant opportunities for PKMI to offer these services to doctors from other countries, particularly other Asian and African countries. According to Pathfinders, international participants (often through international sponsors) are willing to pay reasonable fees to obtain the required expertise. Recently, there has been much discussion about developing "south to south" relationships between developing countries. A joint effort is currently being coordinated by BKKBN to offer multi-faceted family planning training to other developing countries. Sev-

eral groups have agreed to participate in future programs, including PKMI, the Indonesian Planned Parenthood Association (IPPA) and the Private Sector Family Planning Program, YKB (Yayasan Kusuma Buana). Each of these groups is currently developing leaflets and posters to be distributed at the UN International Conference on Population and Development to be held in Cairo in September.

Indonesia is recognized internationally as having one of the most successful family planning programs. Income earned by sharing this expertise will enable Indonesia to become more financially independent and self-sustaining. In 1992 and 1993, PKMI conducted several training courses for international participants including:

- A study tour for 4 doctors from Pakistan (December 1992),
- Norplant training for 6 doctors from Pakistan (December 1992),
- VSC training for 5 doctors from Vietnam (January 1993),
- Norplant training for 5 doctors from Vietnam (End January 1993), and
- Non-scalpel vasectomy training for 3 doctors from Nepal (July 1993).

Increased international exposure gained by attending international conferences such as the upcoming one in Cairo, could represent significant opportunities for PKMI in the near future. Providing training to developing countries could become a significant source of revenue for PKMI.

3. Quality of Care Training for Hospitals

Another form of training that PKMI has considered offering for income generation purposes is training hospital staff in quality assurance.

According to many health professionals working in Indonesia, middle and upper class Indonesians are generally dissatisfied with the quality of primary health care available throughout both the public and private health care system. The lack of public confidence in the current level of service is

evidenced by the well-publicized trips abroad of leading government and private figures for medical diagnosis and operations. This practice sends a strong signal to other socio-economic groups that there must be problems with the domestic system. The negative image is perpetuated by the frequent circulation of stories about mis-diagnosis and mis-treatment.

PKMI in conjunction with URC/CHS (University Research Corporation/Center for Human Resources) is currently conducting a pilot project to assess whether or not there is a larger role for PKMI in providing services and training in Quality Assurance, or Total Quality Management (TQM). PKMI, being a non-government organization, has long been solely responsible for the quality of sterilization, and has therefore been quite active in understanding TQM. Initially the focus was on sterilization alone, but their scope has broadened to include quality assurance in all aspects of hospital management. They have become the front-runners in studying TQM and developing a model to be used in Indonesia.

Background to the Pilot Project

Following several months of discussions and preparation, the quality assurance pilot project began implementation in April of 1993. The project began by developing quality assurance teams to perform external supervision. Teams were set up in each province, consisting of two representatives from POGI (The Association of Obstetricians and Gynecologists), two from BKKBN and two from DEPKES. The teams were then required to obtain data from each of the hospitals, thoroughly review the data (such as the number of operations performed, of complications arising, the number of deaths, etc.) and determine where problems were most prevalent. The next step was to conduct "supervision visits" to each of the hospitals to review their equipment, the staffing, the surgical methods being used and the like, with a view towards problem solving.

This external quality management approach did not prove successful, so PKMI determined that internal supervision training was required. The internal training is currently being conducted with the objective of training hospital teams to review their own data, identify problems and causes, and then do problem solving. URC, together with PKMI, has developed manuals and training methods for the hospital teams.

A final evaluation of this project is planned for December 1994, with the entire project being completed by April of next year.

BAI has been asked to assist in determining whether or not there exists potential for PKMI to take on a larger role in quality assurance in Indonesia. With a view towards assessing this potential, BAI has contacted several hospitals to discuss the current market for quality assurance services. The points discussed include 1) whether or not the hospital currently has a quality assurance structure, 2) if so, how quality assurance is conducted, 3) whether or not the hospital uses external consultants to assist in their quality management, 4) if so, whom, 5) what sort of quality assurance training is the hospital most interested in, and 6) would they be willing to pay for these services.

The hospitals interviewed in Jakarta with regard to quality assurance included Dharmais, Mitra Keluarga, Tebet, Pondok Indah, MMC and Cikini. Following are brief profiles of these hospitals and their current focus on quality assurance.

Dharmais Hospital

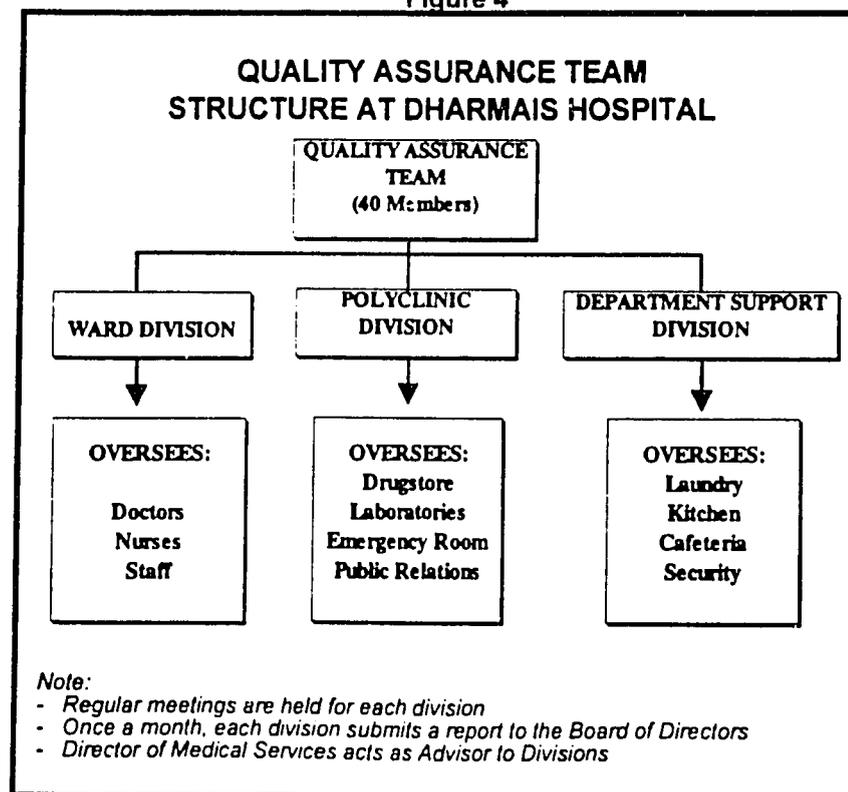
The Dharmais Hospital (RS Kanker Dharmais) is the National Cancer Centre and is considered a semi-private hospital. The hospital has been in operation since October of 1993. As the country's top referral cancer treatment center, it is expected to provide high quality service with modern equipment. The hospital has informal collaborations with the Anderson Hospital in the United States and the Anthony Van Leeuwen Hoek Hospital

in Holland. These relationships consist primarily of doctor exchanges and occasional seminars.

This hospital is particularly concerned with quality of care issues, and has taken steps to establish a formalized quality assurance structure. Figure 4 that follows illustrates their current structure. According to members of the quality assurance team, the structure will change with the needs of the hospital.

The primary concern of the hospital is to achieve international quality assurance accreditation by following the guidelines listed in manuals such as the Australian Council of Hospital Standards. The hospital quality assurance team is rigorously studying these manuals and within six months, intends to invite representatives from these international organizations to examine their performance. At this point, the hospital feels very confident with their internal ability to achieve accreditation and indicates no interest in receiving external assistance unless it is in order to obtain the international certification.

Figure 4



Mitra Keluarga Hospital

Mitra Keluarga Hospital is owned by Kalbe Farma, the pharmaceutical company, and is managed by its health care division. A general care facility, it offers the usual range of services including coronary care. Kalbe Farma plans to expand the number of Mitra Keluarga hospitals in Jakarta in the near future. A new facility is scheduled to open in Bekasi, a lower middle class area east of Jakarta in early November with 150 beds. A 200-bed facility in Kelapa Gading, a middle-class Chinese-Indonesian area in North Jakarta, is also planned in conjunction with Mt. Elizabeth Hospital from Singapore. It is expected that Mt. Elizabeth will assist in providing training in quality assurance.

The Director of the hospital expressed great interest in improving the quality of care provided by their hospital, and has recently returned from a two-week quality assurance seminar held at the Baptist Memorial Hospital in Memphis, Tennessee. The hospital currently has no quality assurance structure. Occasionally, the Director will put together a quality assurance seminar for his staff, however, there is nothing regularly scheduled. The director feels that Indonesian hospitals are a long way from achieving international standards in quality of care, and should focus first on developing their own standards. It was also suggested that the hospital has money to allocate to training in quality assurance, and would consider using an outside consultant, particularly if it were affiliated with an international organization/hospital.

MMC Hospital

The Metropolitan Medical Center (MMC) was established in 1987 as one of the first private, for-profit hospitals in Jakarta. The hospital has 163 beds and is considered an acute general care facility. The hospital has a good relationship with the Gleneagles Hospital in Singapore, but no formal affiliation. MMC also has a loose association with the Austin Hospital in Melbourne, Australia that involves doctor exchanges and nurse training programs.

From its inception in 1987, the hospital has had a quality control program. This is managed by the Quality Control Officer, a foreign consultant. The first step in setting up their quality control program was to develop standard operational procedures. Implementation was the next step. These procedures are regularly reviewed and updated. The following activities are conducted with regard to quality control:

1. Meetings are held three times a week with the department heads. These meetings are chaired by a director, with the purpose of identifying and solving day-to-day problems.
2. There is a weekly cooperation meeting where the department heads gather to discuss larger problems, usually chaired by the President Director of the Hospital.
3. Regular inter-departmental meetings are held to discuss department specific problems.
4. An infection control committee meets once a month to review infection surveillance reports. Each year, the results are presented to the directors and to the staff. Any patient with an infectious disease has a red dot placed on all patient records and documentation. This informs and protects the staff as well as other patients.
5. Critical incidence reports are prepared if an incident has occurred that needs to be discussed. These incidences are followed up with a report.
6. Mortality conferences are held when the need arises. These meetings are chaired by the Medical Director and include the doctors and nurses that were directly involved with the case.
7. The Quality Control Officer, along with the head of the nursing department and the floor doctors make daily rounds. Each floor has a manager that also does rounds daily.

8. A patient evaluation form is given to each patient upon leaving the hospital. This form asks the patient to evaluate the doctors, nurses, room facilities, cleanliness, food, laboratory services and administration efficiency. Approximately 85% of the patients complete the form and return it to the hospital. Monthly, these reports are compiled and analyzed. The analysis is given to each department head. Once a month a nurses evaluation meeting is held, whereby a nurse must present the results of the meeting and provide commentary on why they feel a certain comment was made.
9. The hospital has intensive in-service education that is on-going. Many of these activities are the responsibility of the Human Resources Department. Depending on the training requirements, the hospital will use its own people, and where necessary, bring in external expertise. English and Japanese courses are offered to the staff free of charge.
10. Seminars are regularly organized with the Austin Hospital of Australia. MMC and Austin Hospital typically organize the seminar, and the other hospitals in Indonesia are invited to attend.
11. All staff are evaluated semi-annually by their immediate superior. The results of these performance appraisals are used by the department heads to review salaries and bonuses.
12. Staff surveys are conducted by an independent consultant to evaluate the job satisfaction of the employees.

According to the Quality Control Officer, the strength of the hospital lies in the attitudes of the directors. They are able to maintain discipline in an open environment and are directly involved with the daily operations of the hospital. The Quality Control Officer at MMC is regularly asked to speak at conferences throughout Indonesia. Topics include quality control, infection control, care of AIDS patients and nursing, among others. Having worked extensively on quality control issues with the MMC staff, the Quality Control Officer feels confident that if she were to leave, the systems would remain in place.

Tebet Hospital

Tebet Hospital is a private, non-profit facility established in 1982. Most patients are middle class Indonesians. The majority of the health care services offered at this hospital are for internal injuries and infection. The hospital currently has no internal quality management structure. They have worked with PKMI (and URC) in the area of TQM, and have been pleased with the results. The director interviewed expressed interest in receiving further assistance from PKMI and feels that the hospital could incorporate fees for these services into their annual budget. After all, he said "With hospitals unable to advertise commercially, why not allocate the funds that would normally be used for advertising to a useful cause such as quality control".

It was suggested that the most effective way to encourage hospitals to partake in TQM training would be for the Department of Health to make this type of training mandatory.

Cikini Hospital

Cikini Hospital (RS PGI Cikini) is an established 95 year old hospital owned by a foundation of Protestant churches. It is located on a 5-hectare site in Central Jakarta. Comprehensive services are provided and specific areas of specialization include renal and hypertension cases.

According to the General Affairs Director, Cikini Hospital has no TQM structure. Their current involvement in TQM consists of two staff that occasionally ask for patient satisfaction reports. The hospital has no budget for TQM, but suggests that perhaps in the future they will consider it. No real thought has been put into developing a quality control system for this hospital.

Pondok Indah Hospital

Pondok Indah is a general care hospital owned by a group of 25 of Indonesias top businessmen. It serves an upper class Indonesian and expatriate clientele due to its good reputation and luxury facilities. The hospital is already known for its maternity care, but is planning to move more into general and cardiac surgery. The hospital motto is "A Face with a Smile", "face" referring to fast, accurate, convenient and efficient. The hospital has no official affiliation with any foreign organizations, but maintains strong contact with St. Vincents hospital in Indianapolis and Stanford hospital in California.

The hospital has no formal structure for quality assurance. The six managers and 22 supervisors have weekly meetings where they casually discuss problems within the hospital and how to solve them. The director of the hospital prefers not to develop a structure that is intimidating. His feeling is that Indonesian doctors are very sensitive, don't take criticism well, and do not like dictation. By holding informal meetings, they can discuss issues without feeling threatened. Pondok Indah Hospital has a suggestion box for patients. Initially, the doctors resisted even this, concerned that they may personally be criticized. Over time, they have learned that this is to be used as a tool for improvement.

Despite the lack of a formal quality control structure, the director recognizes the benefit of continuous training and is careful to always include Human Resource Development in the annual budget. He regularly sends staff to training programs both in Indonesia and abroad. Training in the area of quality assurance would be welcomed.

Conclusions on Demand for Quality Assurance Training

The following table (Table 10) gives a comparison of the hospital interview results:

Table 10
CURRENT QUALITY ASSURANCE
IN SELECTED HOSPITALS

	Dharmais	Tebet	Cikini	Mitra Keluarga	Pondok Indah	M M C
Have Current Structure	Yes	No	No	No	Yes	Yes
Use External Consultants	No	Yes	No	Yes	No	Yes
Local or Foreign	N.A.	PKMI	N.A.	Foreign	NA	Both
Greatest Needs	Int'l	All	Don't	All	Don't	None
	Accred.	Areas	Know	Areas	Know	—
Willing to Pay for Expertise	Not Now	Yes	No	Yes	No	Perhaps

Source: Hospital Interviews

There is no doubt that Indonesia is in need of quality assurance training in hospitals. All of the hospitals interviewed indicated an awareness of the need for quality assurance within their hospital. Some hospitals were taking steps to improve their quality, but the degree of professionalism varied significantly between hospitals.

As can be seen in Table 10, of the six hospitals interviewed, three have some type of quality assurance structure and three do not. Of those interviewed, the most defined structure was found at MMC, where a full-time consultant is employed for quality assurance purposes.

Although the hospitals are becoming aware of this need, they often fail to put this sort of training into their annual budget. Most of the hospital directors regularly visit facilities overseas and occasionally partake in TQM training themselves. Nevertheless, much of this knowledge is not passed on to hospital staff.

Through the interviews conducted, BAI has come to the following conclusions:

- If PKMI were to offer services in TQM, they would require the full support of the Department of Health (DEPKES). As DEPKES is currently in the process of developing standards to be used by the hospitals, they could also require that hospitals with no defined quality assurance structure partake in the PKMI TQM training courses. PKMI will need to work closely with DEPKES to establish the most effective system that would benefit the hospitals. Without the influence of DEPKES, it is unlikely that hospitals will recognize TQM as high priority in the near future.
- Hospitals appear to be most interested in programs if they have the backing of an international organization or some sort of foreign expertise. PKMI could benefit from establishing an affiliation with an international organization.
- PKMI is known as an organization in Indonesia specializing in sterilization. Changing this image to include expertise in TQM will require significant social marketing.

In the near future, offering TQM training is not likely to be a significant income-generating opportunity. In time, however, if PKMI can cooperate with DEPKES, there appears to be potential.

According to PKMI, they have recently been approached by two hospitals requesting training in TQM, namely RS PN Timah in Bangka and RS Dr. Sardjito, located in Jogjakarta. A training seminar is planned in August for the hospital in Bangka, and negotiations are still in process for the hospital in Jogjakarta. These requests indicate that there is a growing demand for TQM training.

4. Laparoscopic Repair and Maintenance Centers: Fees for services

Although PKMI is well-qualified to offer repair and maintenance services to hospitals using laparoscopic equipment, the private hospitals interviewed by BAI demonstrated varying degrees of interest in setting up maintenance contracts with PKMI. Those that have purchased their own equipment appear satisfied with their current level of maintenance supplied by the agent or supplier from whom they purchased the equipment (Olympus being the most common brand mentioned).

For other private hospitals, such as RS Tebet, that initially received the equipment free of charge from BKKBN, the repair and maintenance offered by PKMI is welcomed. Although this has previously been offered free of charge, the hospitals generally understand that the service is a necessity, and will be willing to pay a nominal fee if required.

According to all of the hospitals interviewed, the laparoscopic equipment is used more for diagnostic purposes than it is for tubectomies. Diagnosing extra-uterine pregnancies, cysts and adhesions causing infertility are some of the procedures mentioned. Regardless of the procedure being conducted, hospitals will require maintenance of this equipment.

To offer these services successfully, particularly in Jakarta, it is recommended that the repair and maintenance services be conducted on the hospital premises, due to the reluctance of hospitals to relocate their equipment. The biggest market for this service will be the hospitals that received the equipment free of charge, primarily the public hospitals.

5. Falope Ring: Sales

Section II of the market study section of this report provides a detailed analysis of the feasibility of producing falope rings in Indonesia. The market research indicates that the demand for falope rings in Indonesia is limited, and hence the economies of scale for producing falope rings are not great enough to generate sufficient income. With raw material costs repre-

senting nearly 67% of the sales price, the margins are slim and a venture of this nature is only feasible if the volumes are high. As seen in the financial analysis, a cumulative net gain is not achieved until the fifth year of operations (in both the most-likely and optimistic scenarios), and even then, there is not sufficient cash to repay the last loan installment.

BAI does not view falope ring production as a significant income generating opportunity for PKMI.

B. Conclusions and Recommendations

PKMI is aware that financial assistance from donor agencies is diminishing. In an effort to become self-sustaining by the year 1999, they have identified five specific income generating opportunities. Two of these programs are already generating nominal income, namely, the clinics and the sterilization training programs. The other potential opportunities include providing training in TQM, offering Repair and Maintenance services for laparoscopic equipment and producing falope rings used in tubal ligation.

Having reviewed the proposed projects individually, BAI has endeavored to rank each project from greatest to lowest income generating opportunity. Building on their current strengths appears to represent the greatest potential. PKMI should be aware of the danger of spreading themselves too thin, in the quest for income generating opportunities.

1. The two greatest income generating opportunities appear to be in the provision of health care services at the established clinics, and in providing training programs in the area of VSC. PKMI is recognized as having the necessary expertise to successfully provide these services. In addition, by actively partaking in programs such as the upcoming Conference on Population and Development to be held in Cairo, additional opportunities may surface. Sharing the experience and expertise gained in Indonesia with other developing countries is likely to assist PKMI in becoming self-sustaining.

2. Although it may take some time, offering quality assurance training to hospitals in Indonesia could eventually generate income for PKMI, as the awareness of this need is growing. As mentioned earlier, PKMI would need to work closely with DEPKES and would require their full support.
3. The private hospitals have indicated a limited demand for repair and maintenance services offered by PKMI. These hospitals already have repair and maintenance contracts from their supplier, and appear to be satisfied with the current level of service. Where PKMI may be able to offer these services is in the public hospitals that initially received the equipment free of charge from PKMI. As the government continues to encourage the public hospitals to become semi-private, more opportunities may be come apparent. At this point, the income generating opportunities appear limited.
4. As indicated in Part I, Section II of this report, falope ring sales do not represent significant income generating opportunities in Indonesia, for the following reasons:
 - The demand for tubectomies is decreasing, but is expected to level off to approximately 83,000 per year.
 - Many tubectomies are post-partum, and do not require the use of laparoscopy equipment and falope rings.
 - With new technologies becoming available, it is anticipated that the use of falope rings for tubal ligation will become outdated.
 - The raw material costs for producing falope rings are high. To be profitable, high volume sales are necessary.

APPENDIX

APPENDIX 1 - CHILDREN EVER BORN AND LIVING

Percent distribution of all women and of currently married women by number of children ever born (CEB) and mean number ever born and living, according to five-year age groups, Indonesia 1991

Age Group	Number of children ever born (CEB)											Total	Number of Women	Mean No. of CEB	Mean No. of living Children	
	0	1	2	3	4	5	6	7	8	9	10+					
All Women																
15-19	90.9	7.6	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	6280	0.1	0.1
20-24	45.8	31.6	17.0	4.3	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	100.0	5523	0.8	0.8
25-29	16.9	22.4	28.2	18.6	9.6	3.3	0.6	0.3	0.0	0.0	0.0	0.0	100.0	5408	2.0	1.7
30-34	8.9	8.0	21.2	22.8	17.5	11.1	5.6	2.6	0.8	0.4	0.1	0.0	100.0	4456	3.1	2.7
35-39	5.2	9.4	13.7	18.2	20.0	14.8	9.9	6.2	2.8	1.5	1.4	0.1	100.0	3772	3.1	3.5
40-44	6.6	5.4	9.7	13.5	14.7	13.7	12.7	9.7	5.9	4.2	3.8	0.1	100.0	2646	4.6	3.9
45-49	4.9	7.7	7.1	10.7	13.1	11.7	12.1	10.7	9.2	6.0	6.9	0.1	100.0	2847	5.1	4.3
Total	32.5	14.3	14.4	11.7	9.3	6.3	4.3	3.0	1.8	1.2	1.2	0.1	100.0	30933	2.3	2.0
Currently Married Women																
15-19	52.9	39.8	6.6	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1152	0.6	0.5
20-24	15.3	48.9	27.0	6.9	1.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	100.0	3388	1.3	1.2
25-29	5.5	24.5	32.5	21.5	11.1	3.9	0.7	0.4	0.1	0.0	0.0	0.0	100.0	4570	2.3	2.0
30-34	3.2	8.6	22.6	24.4	18.8	12.1	6.0	2.8	0.9	0.4	0.1	0.0	100.0	4000	3.3	2.9
35-39	2.4	5.6	14.0	18.9	20.6	15.2	10.5	6.6	3.1	1.6	1.5	0.1	100.0	3388	4.1	3.6
40-44	3.8	5.0	9.4	13.3	14.8	14.4	13.6	10.7	6.2	4.7	4.2	0.1	100.0	2298	4.9	4.1
45-49	3.1	7.1	6.8	10.5	12.8	12.0	12.3	11.8	9.4	6.6	7.8	0.1	100.0	2314	5.4	4.5
Total	8.3	19.2	20.0	16.0	12.5	8.5	5.8	4.1	2.4	1.6	1.6	0.1	100.0	21109	3.1	2.7

Source: BPS Demographic and Health Survey 1991



CV - ALMAS
SUMMARY FINANCIAL STATEMENT
(million rupiah)

	1991	1992
Total Assets	5,378	6,028
Current Assets	3,238	3,562
Fixed Assets-Net	1,775	1,812
Liabilities	4,270	4,379
Current Liabilities	3,570	4,079
Long Term Liabilities	700	300
Shareholder's Equity	152	152
Net Sales	6,717	7,364
Operating Profit	1,323	1,414
Profit Before Taxes	295	378
Profit After Taxes	198	252
Current Ratio	90.69%	87.32%
Acid Test Ratio	18.83%	8.60%
Debt to Equity Ratio	574.64%	440.28%
Assets to Debt Ratio	117.40%	122.71%
Return on Total Assets	3.95%	6.14%
Return on Investment	3.95%	4.68%
Return on Net Worth	26.64%	25.29%
Asset Turnover	1.34	1.37
Receivable Turnover	15.93	22.46

**Appendix 3
LIST OF INTERVIEWS**

Name	Representing	Title
Dr. Biran Affandi	Klinik Raden Saleh	Gynecologist/Director
Dr. Muki Reksoprodjo	MMC and Cipto Hospitals	Gynecologist/Director
Dr. Chandra	Klinik Medikaloka	Gynecologist
Dr. Yan Tambayong	RS Mitra Keluarga	Director
Dr. Sofyan Syahbudin	RS Kanker Dharmais	Director- Medical Support
Dr. Sarsanto	RS Tebet	Gynecologist/Director
Dr. Remy Leimena	RS Cikini	Director - General Affairs
Dr. Kiagoes	RS Pondok Indah	Executive Director
Russ Vogel	URC/CHS	Technical Assistant
Patricia MacDonald	URC/CHS	Senior Scientist
Wilda Campbell	USAID	Family Planning Advisor
Bambang Samekto	USAID	Family Planning Advisor
Jane Wickstrom	AVSC	Asst. Director - SE Asia
Dr. Does Sampoerno	Pathfinder International	Country Representative
Dr. Anwar Azrul	PKMI	Director
Mary Leigh	MMC	Quality Assurance Officer
Loretta Dudek	Cabot Medical	Intl Administration Mgr.
Dr. Hadisujono	MMC	Medical Director
Mr. Johnny	CV Almas	Owner