

Chapter 2

Marketing study

This chapter begins with gathering the general information of single-lever mixer market such as customers, selling price, distribution channels, and competition situation. Then, the study will determine market size, marketing opportunity, and the expected market share. Market size is estimated from import volume in the past. While, marketing opportunity or future demand of single lever mixer is predicted by using past information with forecasting techniques. Finally, the expected market share of the project will be determined in order to estimate the expected sales of the project including planning capacity for setting up a factory.

2.1 Overview

2.1.1 Customer

Hotels, resorts, service apartments, office buildings, department stores, and housings of high-earning people are major customers of single lever mixer providers.

2.1.2 Price

Selling price of single lever mixer depends on several factors such as design, type, size, and finishing, etc. Generally, a complete set of import single lever mixer for wash basin costs 4,000-10,000 baht, while the price for using with bathtub is around 5,000-15,000 baht. Hence, the price of a complete set of single lever mixer that produced in Thailand should be not more than 3,000 baht for wash basin mixer and should not more 4,000 baht for baht mixer.

2.1.3 Distribution channel

Normally, import faucets are distributed through importers' showrooms and leading sanitary ware outlets. The number of showroom is around 10 places, while the number of leading outlets is around 40 outlets.

However, in case of project sales that required in high volume and competitive price, importers usually contact directly to designers or project owners.

2.1.4 Competition

There are dozens of importers in the market but the leaders of single lever mixer providers are Hago group, Chanpaiboon trading, Ideal standard, and Siam sanitary fitting. Hago group is a sole agent of "Grohe" faucets from Germany. Chanpaiboon is distributor of "Paini" and "Hansgrohe" from Italy. Ideal standard imports its faucets from Italy while Siam sanitary fitting imports its faucet from Japan under brand name of "TOTO".

Grohe is well known in quality of the product. The company always has special promotions for their customers. Furthermore, Hago group is now in process of launching its products from local factory that located in Rayong province, so price of their products should be decreased in the near future. However, even the factory is completed but several of their products, especially in luxurious and medium ranges, are still imported from mother factory in Germany. Major strengths of Grohe are its quality and brand's royalty from customers. However, the price of Grohe is rather high comparing with the other import faucets.

Ideal standard and COTTO have competitive advantages on size of company and the number of nationwide dealers. Furthermore, both of them have manufactured faucets in Thailand for several decades. Their products do not sell only in domestic market but also export to the other Asian countries.

Paini has competitiveness in pricing and warranty. Paini's price is lower than the other companies but warranty time is longer than the other brands in the market. Normally, warranty period of faucets is 5 years but Paini offers 10 years warranty for their products.

Regarding the other brands, they have different strengths and weaknesses so they can still survive in the market. Some of them are unique products. Some of them are good in service. However, most of them are limit on their distribution channel and capital investment, so their sales are considerably low when comparing with the leaders.

Competition between importers is rather high, because demand of the market is decreased due to many of construction companies faced the problem of lacking on their liquidity so they had to stop or postpone their projects. In addition, the effect from economics recession and the situation of over supply in housing are also the major cause of demand decreasing. Furthermore, product cost is extremely increased due to higher exchange rate after the government announced to float the Thai currency.

2.1.5 Market size

Actually, a total sale of single lever mixer is the best figure to show size of the market. But, due to sale is normally confidential information, therefore the study will estimate size of market from import volume in the past. However, after searching the information from organizations such as The Ministry of Commerce and The Customs Department of Thailand, we found out that there is no record in term of import volume of single lever mixer. Therefore, the study has to use the figures about the weight of import faucets and then transfigure them into import volume by using the following formula.

$$\text{Number of import faucets} = \frac{\text{Quantity of import faucets (kg)}}{\text{Average weight per set (kg)}}$$

Quantity of import faucets (kg) can be searched from the Customs Department of Thailand.

Import faucets weight 1-3 kilograms per set (Appendix-1). An average weight of import faucets is 2.15 kilograms per set. However, the study adjusts the figure to 2.5 kilograms for the additional weight from other packages (e.g. weight of pallets or containers, etc.) which are added in actual shipment.

And after surveying the market (Appendix-2), we found that 77.10% of import faucet is in form of single lever mixer. Therefore, volume of import single lever mixer in the past should be as follows.

Table 4 Volume of import single lever mixer during 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|--|-----------|-----------|-----------|-----------|-----------|
| Quantity of import faucet (kg) | 1,110,698 | 1,602,908 | 1,544,611 | 1,062,778 | 1,236,763 |
| Average weight per set (kg) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Number of import faucets (set) | 444,279 | 641,163 | 617,844 | 425,111 | 494,705 |
| Proportion of import single lever mixer | 77.10% | 77.10% | 77.10% | 77.10% | 77.10% |
| Quantity of import single lever mixers (set) | 342,539 | 494,337 | 476,358 | 327,761 | 381,418 |

In conclusion, the market size of import single lever mixer is around 300,000-400,000 sets per year. The minimum value of market is 900 million baht per year because the minimum price of import single lever mixer is around 3,000 baht.

2.1.6 Expected market share

Normally, the expected market share can be determined by market testing. The results of market testing show customer's preferences and sale opportunity of the product. For instance, if 30 of 100 interviewee answered that they will choose to buy our product, so we may expect that the market share of our product should be at 30%.

However, performing the market testing is not selected for determining the market share of this project, because one of the study's objective is to find the most suitable product and raw material so we do not know the product specification until engineering study is proceeded. Consequently, market share of the project will be primarily estimated by considering current market situation with the assumption that our product is competitive, then a possible figure of market share is assessed for sale forecasting.

According to the above information in 2.1.4, the current market is quite difficult for penetration of new entrant. However, if we have competitive advantages (e.g. better quality, lower price, longer warranty, high variety, etc.) and effective marketing strategy, we expect that our market share should not less than 20%. (Because price of single lever mixer in the market is rather high when considering on current economic situation, therefore if we can produce single lever mixer in lower cost and sell it in lower price, we should have a lot of sales opportunity)

Nevertheless, in financial study, the study will show sensitivity analysis in case that the market share is lower than expectation.

2.2 Demand forecasting

Since there is no sufficient information and reliable forecasting about demand of single lever mixer, therefore we have to use the figures in table 4 to forecast the demand in the future. The figures derived from transformation of "import weight" to "import volume" as be shown in 2.1.5 thus the information that used are not absolutely accuracy. Furthermore, we found out some errors in records of the Customs Department of Thailand. In addition, the current economic situation is difficult to predict the demand in the future. Therefore, the selection on the most forecasting method should be considered according to available information and current situation.

Generally, in business forecasting, qualitative methods are more suitable for long term forecasting where there are high degree of uncertainty and lack of data (Mike Newton, Forecasting method selection, page 23, Logistic and operations Management, The University of Warwick).

However, the study will consider both quantitative and qualitative method and then select the most appropriate one for determining the demand of single lever mixer in future.

2.2.1 Quantitative method

Quantitative methods concern establishing a relation between variables by using historical data. Quantitative methods are commonly time series and regression analysis. Time series methods are about establishing a relation between a variable and time, while Regression is about developing a relation between variables.

At first, the figures relevant to the demand of import faucet such as number of new single house, number of hotel, etc. were brought to consider in

order to find the relationship between variables by performing regression analysis.

After getting the independent variable that has the significant relationship with the dependent variable (volume of import faucet), we will forecast the demand of single lever mixer in the future by using regression equation than we got from previous step.

2.2.1.1 Exploring data

This session consists of the information that may relate to the demand of single lever mixer in Thailand. These figures are number of new residents, number of hotel room, demand of sanitary ware, etc.

Table 5 Number of new house during 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|-----------------------------------|--------|--------|--------|--------|--------|
| Number of new single house (unit) | 46,882 | 48,883 | 48,909 | 44,877 | 41,305 |

Source: Bank of Government Housing, Thailand.

Table 6 Number of new home office 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|----------------------------------|--------|--------|--------|--------|--------|
| Number of new home office (unit) | 44,273 | 54,169 | 61,944 | 60,373 | 43,508 |

Source: Bank of Government Housing, Thailand.

Table 7 Number of new apartment 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|--------------------------------|--------|--------|--------|--------|--------|
| Number of new apartment (unit) | 42,446 | 67,941 | 60,477 | 60,744 | 59,561 |

Source: Bank of Government Housing, Thailand.

Table 8 Number of hotel room 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|----------------------------|---------|---------|---------|---------|---------|
| Number of new hotel (room) | 212,389 | 246,113 | 255,573 | 265,542 | 272,993 |

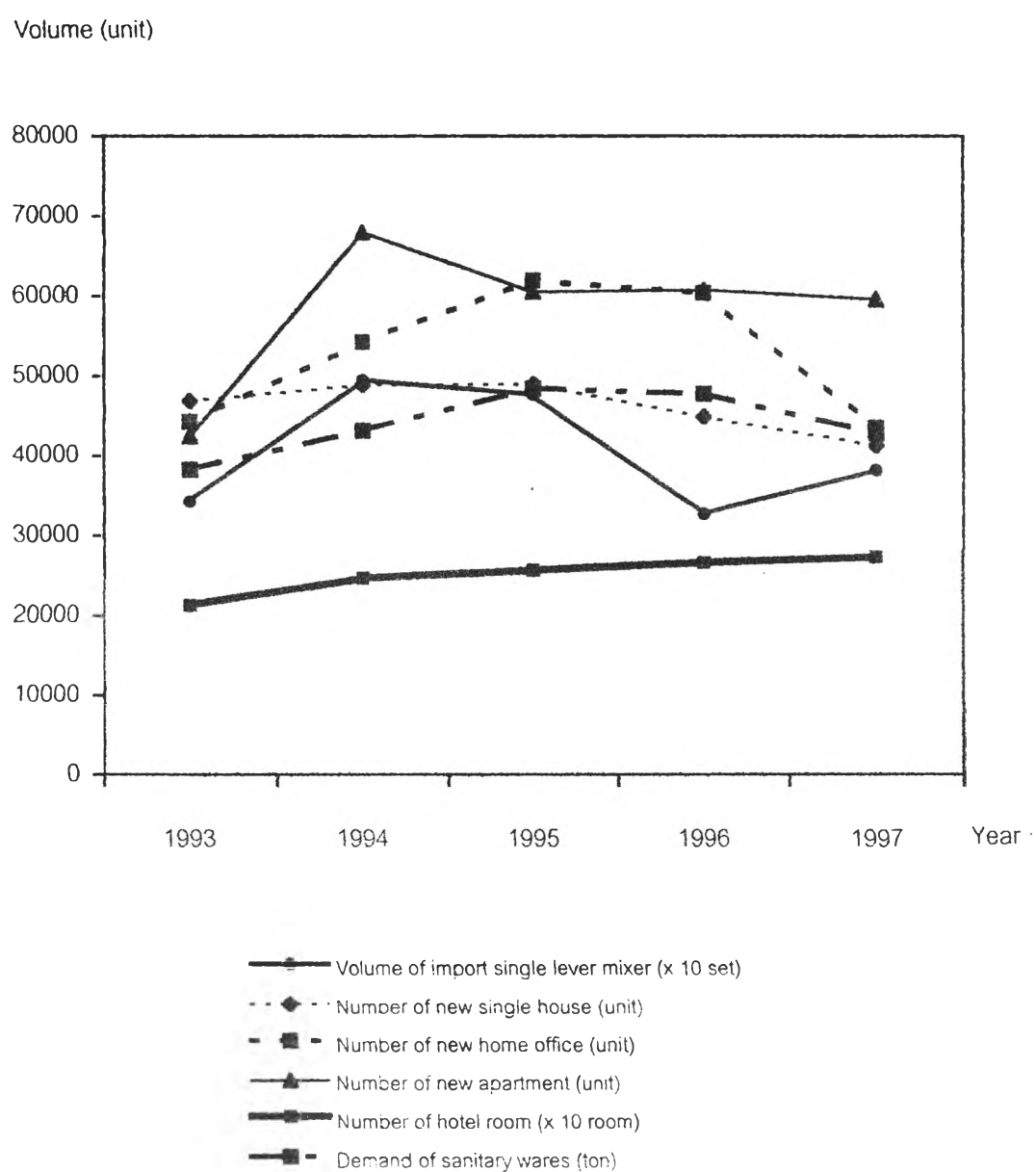
Source: Tourist Authority of Thailand

Table 9 Demand of sanitary wares 1993-1997

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|-------------------------------|--------|--------|--------|--------|--------|
| Demand of sanitary ware (ton) | 38,252 | 43,135 | 48,431 | 47,733 | 42,807 |

Source: IFCT, Thailand

Figure 4 Volume of import single lever mixer and relevant figures



2.2.1.2 Regression analysis

This study performs the regression analysis by using Microsoft Excel, and then we can get the simple linear regression equation:

$$E(y) = \beta_0 + \beta_1 x$$

When x = independent variable

Y = dependent variable

If the value of β_1 is zero, it means that the value of y does not depend on the value of x , so we can conclude that x and y are not linear related.

Therefore, we have to do the 't-test for significant in regression' to see whether we can conclude that $\beta_1 \neq 0$. The procedure of the t-test are illustrated as follow:

1. the hypothesis

$$H_0: \beta_1 = 0$$

$$H_a: \beta_1 \neq 0$$

2. the rejection rule

$$\text{Reject } H_0 \text{ if } t < -t_{\alpha/2} \text{ or if } t > t_{\alpha/2}$$

Where $t_{\alpha/2}$ is based on a t distribution with $n-2$ degrees of freedom.

If H_0 is rejected, we can conclude that there is a statistically significant relationship between x and y . Thus, we can use predict the future value of y if we know the future value of x by putting the value of x in this regression equation.

If H_0 cannot be rejected, we will have insufficient evidence to conclude that a significant relationship exists.

In this study, we will test for significance in regression with 95% confidence level, i.e., $\alpha = 0.05$. We collect data for 5 years, i.e., $n = 5$ and degrees of freedom = $5-2 = 3$.

From the t Distribution table (Appendix-3), with 3 degrees of freedom,

$$T_{0.025} = 3.182$$

Regression analysis for each independent variable

Import volume vs. Number of new house

The results of regression analysis after using Excel are as follows.

Input

| Year | Import single lever mixer (set) y | Number of new single house (unit) X |
|------|---|---|
| 1993 | 342,539 | 46,882 |
| 1994 | 494,337 | 48,883 |
| 1995 | 476,358 | 48,909 |
| 1996 | 327,761 | 44,877 |
| 1997 | 381,418 | 41,305 |

SUMMARY OUTPUT

| <i>Regression Statistics</i> | |
|------------------------------|-------------|
| Multiple R | 0.621627538 |
| R Square | 0.386420796 |
| Adjusted R Square | 0.181894395 |
| Standard Error | 69320.72747 |
| Observations | 5 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> |
|------------|-----------|-------------|-----------|----------|
| Regression | 1 | 9078985816 | 9.08E+09 | 1.889344 |
| Residual | 3 | 14416089770 | 4.81E+09 | |
| Total | 4 | 23495075585 | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|--------------|---------------------|-----------------------|---------------|----------------|
| Intercept | -285029.5803 | 502590.3613 | -0.56712 | 0.610294 |
| X Variable 1 | 14.93381546 | 10.86463706 | 1.374534 | 0.262955 |

From the above table, $t = 1.375$

With $1.375 < 3.182$, we cannot reject H_0 , i.e. we have insufficient evidence to conclude that the volume of import single lever mixer depend on the number of new single house.

Import volume vs. Number of new home office

The results of regression analysis after using Excel are as follows.

Input

| Year | Import single lever mixer (set) Y | Number of new home office (unit) X |
|------|---|--|
| 1993 | 342,539 | 44,273 |
| 1994 | 494,337 | 54,169 |
| 1995 | 476,358 | 61,944 |
| 1996 | 327,761 | 60,373 |
| 1997 | 381,418 | 43,508 |

SUMMARY OUTPUT

| <i>Regression Statistics</i> | |
|------------------------------|--------------|
| Multiple R | 0.353612754 |
| R Square | 0.12504198 |
| Adjusted R Square | -0.166610694 |
| Standard Error | 82779.23416 |
| Observations | 5 |

| <i>ANOVA</i> | | | | |
|--------------|-----------|-------------|-----------|----------|
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> |
| Regression | 1 | 2937870760 | 2.94E+09 | 0.428736 |
| Residual | 3 | 20557204825 | 6.85E+09 | |
| Total | 4 | 23495075585 | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|--------------|---------------------|-----------------------|---------------|----------------|
| Intercept | 239599.3851 | 254521.6074 | 0.941371 | 0.415962 |
| X Variable 1 | 3.119633078 | 4.764403965 | 0.654779 | 0.559334 |

From the above table, $t = 0.655$

With $0.655 < 3.182$, we cannot reject H_0 , i.e. we have insufficient evidence to conclude that the volume of import single lever mixer depend on the number of new home office.

Import volume vs. Number of new apartment

The results of regression analysis after using Excel are as follows.

Input

| Year | Import single lever mixer (set) y | New Apartment (unit) x |
|------|---|------------------------------|
| 1993 | 342,539 | 42,446 |
| 1994 | 494,337 | 67,941 |
| 1995 | 476,358 | 60,477 |
| 1996 | 327,761 | 60,744 |
| 1997 | 381,418 | 59,561 |

SUMMARY OUTPUT

| <i>Regression Statistics</i> | |
|------------------------------|-------------|
| Multiple R | 0.617809975 |
| R Square | 0.381689165 |
| Adjusted R Square | 0.175585554 |
| Standard Error | 69587.49839 |
| Observations | 5 |

| ANOVA | | | | |
|------------|-----------|-------------|-----------|----------|
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> |
| Regression | 1 | 8967815791 | 8.97E+09 | 1.851929 |
| Residual | 3 | 14527259795 | 4.84E+09 | |
| Total | 4 | 23495075585 | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
|--------------|---------------------|-----------------------|---------------|----------------|
| Intercept | 112443.7247 | 216844.1763 | 0.518546 | 0.639898 |
| X Variable 1 | 5.014937637 | 3.685135164 | 1.360856 | 0.26677 |

From the above table, $t = 1.361$

With $1.361 < 3.182$, we cannot reject H_0 , i.e. we have insufficient evidence to conclude that the volume of import single lever mixer depend on the number of new apartment.

Import volume vs. Number of hotel room

The results of regression analysis after using Excel are as follows.

Input

| Year | Import single lever mixer (set) y | Number of Hotel (Room) x |
|------|---|--------------------------------|
| 1993 | 342,539 | 212,389 |
| 1994 | 494,337 | 246,113 |
| 1995 | 476,358 | 255,573 |
| 1996 | 327,761 | 265,542 |
| 1997 | 381,418 | 272,993 |

SUMMARY OUTPUT

| <i>Regression Statistics</i> | | | | |
|------------------------------|---------------------|-----------------------|---------------|----------------|
| Multiple R | | 0.090957254 | | |
| R Square | | 0.008273222 | | |
| Adjusted R Square | | -0.322302371 | | |
| Standard Error | | 88130.00928 | | |
| Observations | | 5 | | |
| <i>ANOVA</i> | | | | |
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> |
| Regression | 1 | 194379976 | 1.94E+08 | 0.025027 |
| Residual | 3 | 23300695609 | 7.77E+09 | |
| Total | 4 | 23495075585 | | |
| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
| Intercept | 330512.5631 | 469235.9584 | 0.704363 | 0.531961 |
| X Variable 1 | 0.295263637 | 1.866414152 | 0.158198 | 0.88435 |

From the above table, $t = 0.158$

With $0.158 < 3.182$, we cannot reject H_0 , i.e. we have insufficient evidence to conclude that the volume of import single lever mixer depend on the number of hotel.

Import volume vs. Demand for sanitary wares

The results of regression analysis after using Excel are as follows.

Input

| Year | Import single lever mixer (set) y | Demand of sanitary ware (ton) x |
|------|---|---------------------------------------|
| 1993 | 342,539 | 38,252 |
| 1994 | 494,337 | 43,135 |
| 1995 | 476,358 | 48,431 |
| 1996 | 327,761 | 47,733 |
| 1997 | 381,418 | 42,807 |

SUMMARY OUTPUT

| <i>Regression Statistics</i> | | | | |
|------------------------------|---------------------|-----------------------|---------------|----------------|
| Multiple R | | 0.26587518 | | |
| R Square | | 0.070689611 | | |
| Adjusted R Square | | -0.239080518 | | |
| Standard Error | | 85311.62059 | | |
| Observations | | 5 | | |
| <i>ANOVA</i> | | | | |
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> |
| Regression | 1 | 1660857760 | 1.66E+09 | 0.2282 |
| Residual | 3 | 21834217825 | 7.28E+09 | |
| Total | 4 | 23495075585 | | |
| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> |
| Intercept | 187874.4443 | 455039.0734 | 0.412875 | 0.707433 |
| X Variable 1 | 4.914914722 | 10.2886397 | 0.477703 | 0.665509 |

From the above table, $t = 0.478$

With $0.478 < 3.182$, we cannot reject H_0 , i.e. we have insufficient evidence to conclude that the volume of import single lever mixer depend on the demand for sanitary ware.

However, we can simply find the relationship between the two variables by considering the value of r^2 or coefficient of determination. The below table illustrates the r^2 of the relationship between the volume of import single lever mixer and various independent variables.

| Independent Variables | R^2 |
|----------------------------|---------|
| Number of new single house | 0.38642 |
| Number of new home office | 0.12504 |
| Number of new apartment | 0.38168 |
| Number of hotel room | 0.00827 |
| Demand for sanitary wares | 0.07068 |

From the above table, we can conclude that:

- 1) 38.64% of the variation in volume of import single lever mixer can be explained by the linear relationship between the number of new single house and volume of import single lever mixer.
- 2) 12.50% of the variation in volume of import single lever mixer can be explained by the linear relationship between the number of new home office and volume of import single lever mixer.
- 3) 38.17% of the variation in volume of import single lever mixer can be explained by the linear relationship between the number of new apartment and volume of import single lever mixer.
- 4) 0.83% of the variation in volume of import single lever mixer can be explained by the linear relationship between the number of hotel room and volume of import single lever mixer.
- 5) 7.07% of the variation in volume of import single lever mixer can be explained by the linear relationship between demand for sanitary wares and volume of import single lever mixer.

Summary

With reference to the results of regression analysis, we found that there is insufficient evidence to conclude that the linear relationship between independent variables (e.g. number of new house, number of new home office, number of new apartment, number of hotel room and demand for sanitary ware) and the volume of import single lever mixer.

2.2.2 Qualitative method

Since we can not find a variable that has a significant relationship with volume of import single lever mixer, therefore we have to use qualitative method to predict demand of import single lever mixer in the future.

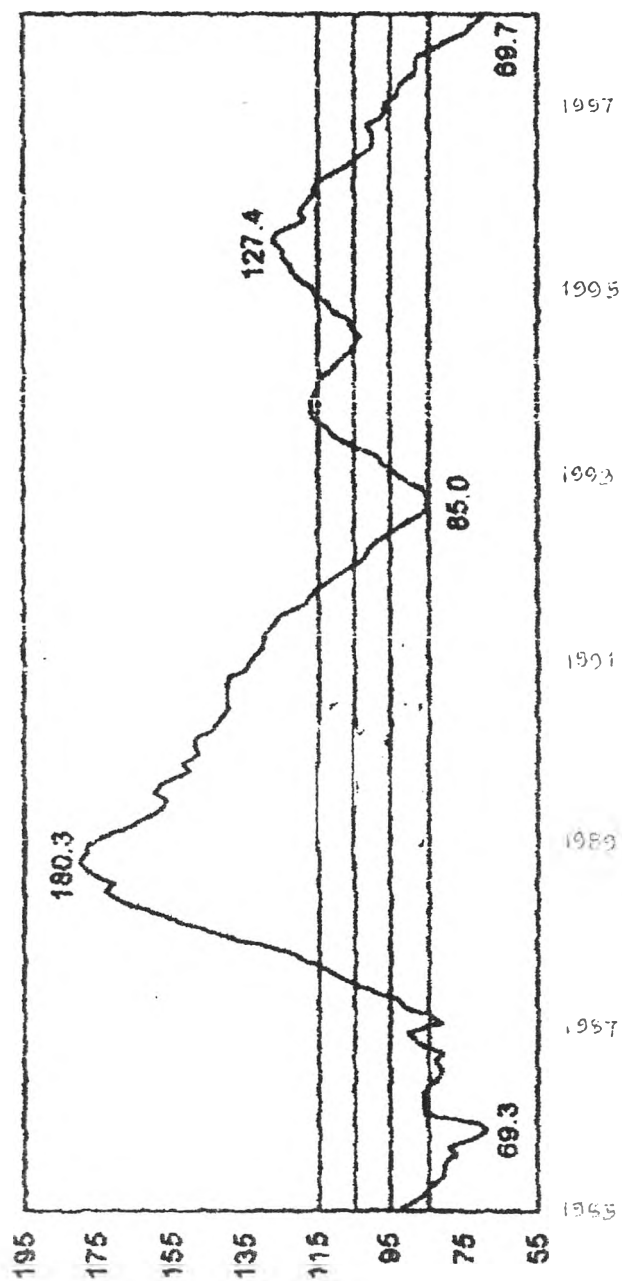
In estimating future demand, companies commonly use a three-stage procedure to prepare a sales forecast. The first stage is a macroeconomic forecast, then followed by an industry forecast, and finally a company forecast. The macroeconomic forecast calls for projecting inflation, unemployment, interest rates, consumer spending, business investment, government expenditures, balance trade, and so on. The end result is a forecast of gross national product, which is then used along with the other environmental indicators, to forecast industry sales. Then, finally sales forecast of the company is derived by assuming that it will obtain a certain market share (Phillip Kotler, "Marketing Management Analysis, Planning, Implementation, and Control", 8th, page 256, Prentice Hall, 1994).

For this study, some key economics indicators, such as private investment index and Gross Domestic Product (GDP), are analyzed for macroeconomic forecast and then sales forecast of the project is derived by using the expected market share in 2.1.6.

After considering historical data such as Private-sector Investment Index and Gross Domestic Product, it is noticeable that Thailand's economics situation during the year 1983-1989 was similar to the economics situation at this time. Consequently, "Analogy" is one of qualitative method that can be used for forecasting demand of import faucet in the future. This method assumes that the economics situation for the next 5 years (1998-2002) should be as same as the pattern during the year 1985-1989 i.e. changing with the same growth rate. Hence, this study will use the growth rate of GDP during 1985-1989 to predict the growth rate of the demand of import faucet for the year 1998-2002.

Figure 5 Private Investment Index during the year 1985-1997.

(Source: IFCT, Thailand)



GDP growth in the past

With reference to statistic of the Office of National Economics and Social Development of Thailand, GDP of Thailand in the past was:

Figure 6 Growth rate of Thailand's GDP during 1985-1997

(Source: Office of the National Economic and Social Development Board, Thailand)

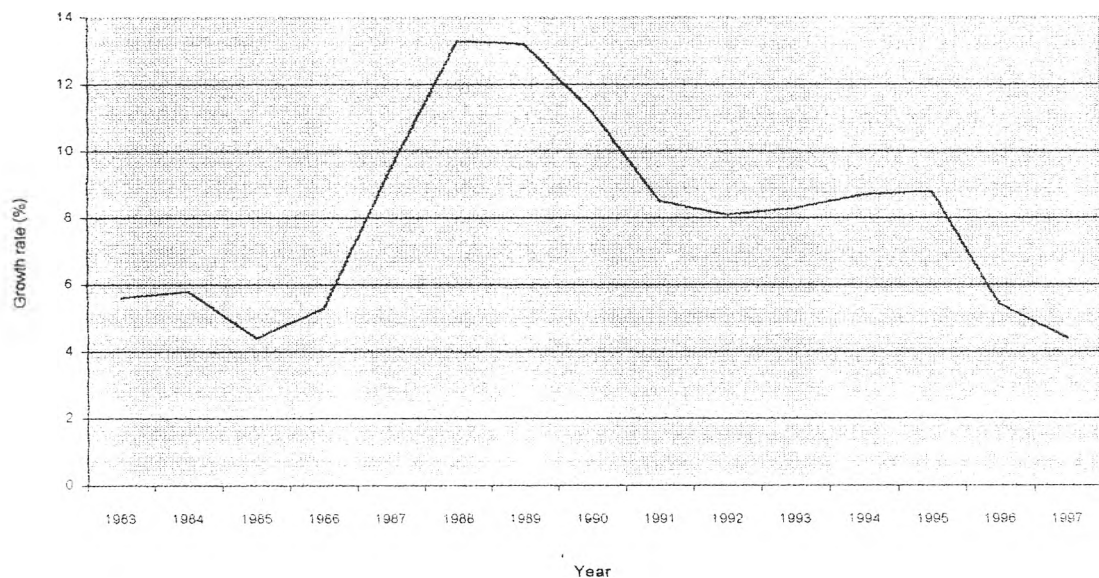


Table 10 GDP Growth rate during the year 1985-1989.

| Year | 1985 | 1986 | 1987 | 1988 | 1989 |
|----------------------|------|------|------|------|------|
| GDP. Growth rate (%) | 4.4 | 5.3 | 9.5 | 13.3 | 13.2 |

(Source: Office of the National Economic and Social Development Board, Thailand)

Forecasting of GDP for the next 6 years

With the use of analogy analysis, GDP growth rate of Thailand during the year 1998-2002 should be as follows.

Table 11 Expected growth rate of GDP for the year 1998-2002 (using analogy method)

| Year | 1998 | 1999 | 2000 | 2001 | 2002 |
|--------------------|------|------|------|------|------|
| GDP growth rate(%) | 4.4 | 5.3 | 9.5 | 13.3 | 13.2 |

However, from the latest forecasting, GDP for the year 1998 is -7% under IMF program (Major Business index of Thailand, Business Statistical Center, The Ministry of Commerce, 1998) and -8% under the forecasting of World Bank (Global Economic Prospects, Prospects after the East Asian crisis, December 1998). Therefore, in 1998, the average growth rate (-7.5%) will be used instead of growth rate $+4.4\%$. And according to the forecasting of financial institutions, Thai economy should recover in the year 1999. Thus, the growth rates in table-9 should be adjusted as follows.

Table 12 Expected growth rate of GDP of Thailand in 1998-2002 (after adjustment)

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---------------------|------|------|------|------|------|------|
| GDP growth rate (%) | -7.5 | 4.4 | 5.3 | 9.5 | 13.3 | 13.2 |

Expected demand of import single lever mixer in the next 6 years

From table-4, the expected demand of import single lever mixer in the year 1997 is 381,418 sets, thus, if we use analogy method and growth rate in table-12, the expected demand of single lever mixer faucet in the future can be shown as follows.

Table 13 The expected demand of single lever mixer for the year 1998-2003 .

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---------|---------|---------|---------|---------|---------|
| Expected growth rate (%) | -7.5 | 4.4 | 5.3 | 9.5 | 13.3 | 13.2 |
| Expected demand of single lever mixer (set) | 352,812 | 368,336 | 387,858 | 424,705 | 481,191 | 544,708 |

According to the expected market share in 2.1.6, the expected sale of project will be as follows.

Table 14 The expected sale of the project during the year 1998-2003.

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---------|---------|---------|---------|---------|---------|
| Expected demand of single lever mixer (set) | 352,812 | 368,336 | 387,858 | 424,705 | 481,191 | 544,708 |
| Market share (5) | 20% | 20% | 20% | 20% | 20% | 20% |
| Expected sale of the project | 70,563 | 73,668 | 77,572 | 84,941 | 96,238 | 108,941 |

2.3 Marketing opportunity

Export market

Export market is an alternative to increase sale of the project. Volume of export is shown in table-18.

Export volume

Because the volume of export faucet is provided in weight basis, therefore we have to transfigure these figures into the number of export faucet by using the same method as we use in transfiguring import volume.

Thus,

$$\text{Numbers of export faucets} = \frac{\text{Quantity of export faucets (kg)}}{\text{Average weight per set (kg)}}$$

If the average weight per set of export faucet is as same as the average weight per set of import faucet (which is 2.5 kg per set), the number of export faucet during the past 5 years should be as follows.

Table 15 Volume of export faucets during the year 1993-1997.

| Year | 1993 | 1994 | 1995 | 1996 | 1997 |
|--------------------------------|--------|--------|---------|---------|---------|
| Quantity of export faucet (kg) | 95,094 | 89,562 | 150,679 | 231,205 | 562,301 |
| Average weight per set (kg) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Number of export faucets (set) | 38,038 | 35,825 | 60,272 | 92,482 | 224,920 |

From the above table, the number of export faucet has been increased years by years. Major export markets are Singapore (189,545 tons or approximately 75,818 sets in 1997) and Vietnam (92,995 tons or approximately 37,198 sets in 1997).

When we consider the key indicators of these countries, GDP growths of these countries referred to BOI's statistics (Business Statistics, Thailand Board of Investment, 1998) are as follows.

| | <u>GDP growth (%)</u> |
|-----------|-----------------------|
| Singapore | 5.6 |
| Vietnam | 8.8 |

The above figures show that economics of Singapore and Vietnam is quite positive when comparing to the other countries in Asia. In addition, currently there is no single lever mixer manufacturers in these two countries, therefore we have a good chance to penetrate in this market. Furthermore, the effectiveness of AFTA in the future will cause the lower import tariff among Asian countries, which can help us gain competitive advantages over the competitors who are not the member of AFTA. Consequently, we expect to have market share from these two markets around 20% of total.

With reference to the world merchandise trade for 1998-2000 (World Bank, November 1998), import growth of East Asia and Pacific is forecasted as follows.

| | <u>1998</u> | <u>1999</u> | <u>2000</u> |
|-------------------|-------------|-------------|-------------|
| Import growth (%) | -5.2 | 5.7 | 8.2 |

If import faucet of Singapore and Vietnam changes in line with the above figures, export faucet to Singapore and Vietnam should be as follows.

Table 16 The expected sale of the project in Singapore and Vietnam.

| Year | 1997 | 1998 | 1999 | 2000 |
|---|---------|---------|---------|---------|
| Growth (%) | | -5.2 | 5.7 | 8.2 |
| Export faucet to Singapore (set) | 75,818 | 71,875 | 75,972 | 82,202 |
| Export faucet to Vietnam (set) | 37,198 | 35,264 | 37,274 | 40,330 |
| Total (set) | 113,016 | 107,139 | 113,246 | 122,532 |
| Expected market share (%) | 20% | 20% | 20% | 20% |
| Expected sales volume of the project in Singapore and Vietnam (set) | 22,603 | 21,428 | 22,649 | 24,506 |

The expected sales in Singapore and Vietnam for the year 2001-2003 are set at 24,506 sets as same as the expected sale in the year 2000, thus total sale of the project will be:

Table 17 Total sale of the project for the year 1998-2003

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|--|--------|--------|---------|---------|---------|---------|
| Expected sales volume for local market (set) | 70,563 | 73,668 | 77,572 | 84,941 | 96,238 | 108,941 |
| Expected sales volume for Singapore and Vietnam market (set) | 21,428 | 22,649 | 24,506 | 24,506 | 24,506 | 24,506 |
| Total sales volume (set) | 93,166 | 96,317 | 102,078 | 109,447 | 120,744 | 133,447 |

Table 18 Export faucets of Thailand During the year 1993-1997.

| Countries | 1993 | 1994 | 1995 | 1996 | 1997 |
|------------------|-------|-------|--------|--------|--------|
| U. ARAB EMIRATES | | 63 | | 149 | 56,937 |
| AFGHANISTAN | | | | | 1,496 |
| AUSTRIA | | | | 64 | |
| AUSTRALIA | 19 | 190 | 106 | 398 | 12,151 |
| BANGLADESH | | 220 | | 28 | 672 |
| BELGIUM | | | | 18 | |
| BURUNDI | | 5 | | | |
| BRUNEI | 3,040 | 2,185 | 1,318 | 469 | 3,213 |
| BRAZIL | | | | 2,956 | 815 |
| SWITZERLAND | | | 112 | 1,064 | |
| CANADA | | 2 | | | |
| COOK ISLAND | | | | | |
| CHINA | 350 | 326 | 3,980 | 16,561 | 11,994 |
| COLOMBIA | | 51 | 58 | | |
| COSTARICA | | | | | 11 |
| CYPRUS | | 7 | | | |
| GERMANY | 2,695 | 124 | 42 | 2 | 46,334 |
| EGYPT | 464 | 3,719 | | | |
| SPAIN | | 40 | | | 114 |
| FIJI | 2,117 | 913 | 1,105 | 877 | 916 |
| FRANCE | 426 | | | 18 | 960 |
| U.K. | | 2,188 | 7 | 244 | 12,865 |
| GREECE | 1 | | | 3,717 | |
| HONG KONG | 2,107 | 3,575 | 3,006 | 2,240 | 48,419 |
| INDONESIA | 396 | 1 | 1,248 | 2,952 | 4,866 |
| INDIA | | 42 | | | |
| ISRAEL | 2,100 | | | | |
| ITALY | | | | 2,718 | 2,992 |
| JAMAICA | | | 32 | | |
| JAPAN | 146 | 32 | 356 | 130 | 416 |
| KAMBODIA | 4,187 | 4,757 | 11,969 | 10,522 | 8,892 |
| SAINT KIT | | 88 | | | |
| KOREA | 1,725 | 5 | 152 | 19 | 1,539 |

Export faucets of Thailand During the year 1993-1997 (continue)

| Countries | 1993 | 1994 | 1995 | 1996 | 1997 |
|--------------|--------|--------|---------|---------|---------|
| KUWAIT | | | 564 | | |
| LAO | 3,539 | 6,297 | 10,441 | 4,603 | 3,875 |
| LEBANON | | | 154 | | 9,893 |
| SRI LANKA | 71 | 20 | 5,520 | 277 | 1,635 |
| MYANMA | | 1,803 | 24,200 | 11,124 | 13,740 |
| MACAO | | 105 | | | 6,881 |
| NORTHERN | | 4 | | | |
| MALDIVES | 357 | 237 | 40 | 99 | 525 |
| MALAYSIA | 1,446 | 2,777 | 1,024 | 1,003 | 3,831 |
| NORWAY | | | | | 123 |
| NEPAL | | | 70 | | 886 |
| NEW ZEALAND | | | | 907 | 3,951 |
| NIGERIA | 531 | | | | |
| PAKISTAN | | 22 | | | |
| PANAMA | | | 3 | | |
| PHILIPPINES | 1,074 | 91 | 967 | 879 | 7,027 |
| QATAR | | | 157 | | |
| SAUDI ARABIA | 3,057 | 1,431 | 2,746 | 18,376 | |
| SEYCHELLE | 88 | | | | |
| SINGAPORE | 39,225 | 44,369 | 59,470 | 30,861 | 189,545 |
| SIERRA LE | 1,836 | | | | |
| SENEGAL | | | | | 424 |
| SYRIAN AR | 170 | | | | |
| TAIWAN | 1,914 | 826 | | | 9,763 |
| TANZANIA | | | | | 32 |
| USA | 4,851 | 5,510 | 1,526 | 3 | 1,573 |
| VIETNAM | 17,022 | 7,537 | 18,540 | 116,987 | 92,995 |
| SOUTH AFRICA | | | 1,449 | 940 | |
| OTHER | 140 | | 317 | | |
| TOTAL (kg) | 95,094 | 89,562 | 150,679 | 231,205 | 562,301 |

Source: The Customs Department of Thailand.

2.4 Summary on marketing study

Demand of single lever mixer cannot forecast by using quantitative methods because there is insufficient and unreliable data in the past. After trying to establish a relationship between demand and the other variables by regression analysis, the results show that there is no significant relationship between demand of single lever mixer and other related variables. Consequently, we have to use qualitative method to forecast the demand in the future. After considering the economic situation in the past, we found out that during the year 1985-1989 Thailand faced similar situations (e.g. economics recession, devaluation of Thai currency, etc.) to present, therefore we use analogy method to forecast the demand of single lever mixer in the future. The result of forecasting shows that domestic demand is 70,000-100,000 sets per year. Next, the study considered the potential of export market and found that there is possibility to export our goods to Singapore and Vietnam. The expected sale in these two countries is 22,000-25,000 sets per year. Total expected sales of the project are:

| | <u>1998</u> | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|---|-------------|-------------|-------------|-------------|-------------|-------------|
| Expected sales volume for local market (set) | 70,563 | 73,668 | 77,572 | 84,941 | 96,238 | 108,941 |
| Expected sales volume for Singapore and Vietnam market(set) | 21,428 | 22,649 | 24,506 | 24,506 | 24,506 | 24,506 |
| Total sales volume (set) | 93,166 | 96,317 | 102,078 | 109,447 | 120,744 | 133,447 |