



## CHAPTER 3

# MARKETING ANALYSIS

This chapter, a feasibility analysis of infectious wastes incinerating project, in terms of marketing will be performed. Purposes of this analysis are as to understand how large the infectious waste incinerating service. To see how to expand this market and to predict how much market share will have. After all this information has been collected, it is then possible to know the volume of infectious waste services and competitor's prices.

In the beginning, the company's situation is analysed by using situation analysis (SWOT Analysis) which is the process of collecting and analyzing information about ABC Company's strengths, weakness, opportunities and threats to help determine a company strategy. At first, will be analyzed ABC Company's opportunities and threats by apply PEST Analysis, Competitive Five Force (Porter Five Forces). Then will be determined the company strengths, weakness by using internal checklist, which is designed to include factors relevant for ABC Company. In addition, product life cycle will be analyzed.

After evaluating and summarizing the SWOT analysis, then a marketing strategy will be set, which cover marketing mix for this service. Next, the gap between the demand for infectious waste disposal and the supply of service will be shown. Finally, the forecasting demand for 10 year and sale forecast will be proposed.

### **3.1 External Analysis and Appraisal**

External analysis shows the process of analyzing the forces in the environment that affect to the company such as PEST analysis, and Porter five-force model as explain below.

### **3.1.1 PEST Analysis**

PEST Analysis is analyzing of the external factor influence ABC Company's choice of direction and action and ultimately it's organisational structure and internal processes. In this analysis, the external factor that concerned is remote environment which comprises factors that originate beyond, and usually irrespective of, any single firm's operating situation.

That environment presents company with opportunities, threats, and constraints which have been particularly important in the past and the extent to which there are changes occurring which may make any of these more or less significant in the future for the organisation and its competitors. Each environmental factor of ABC Company is shown in the following items.

#### **1) Political Factors**

Political and legal force influence is significant and not just limited to legislation a trading, pricing, dividing tax, employment and health and safety. In addition, the government controls much of the economy, being the nation's largest supplier, employer, customer and investor. The slightest shift in political emphasis can decimate a particular market almost overnight. The example of opportunities and threats by the government which affect ABC Company are as following.

##### **□ Change in policies due to a change in the ruling party.**

According to BE2535, Public Health Department states that the disposal of infectious waste is the responsibility of the local municipality. The local municipality can do all the incineration by themselves or commission a privately owned business to carry out the incineration for them. In addition, the Thai Government is more concerned with effects on environment, therefore new laws are introduced, which control environmental issues such as air pollution, wastewater, and etc.

From these causes, ABC Company will have more opportunities to increase sales because every hospital and related business have to incinerate their infectious wastes controlled air incinerator.

□ **Baht floating policy**

Baht floating policy make ABC Company buy raw material and equipment which higher prices. The following figure present exchange rate per US dollars.

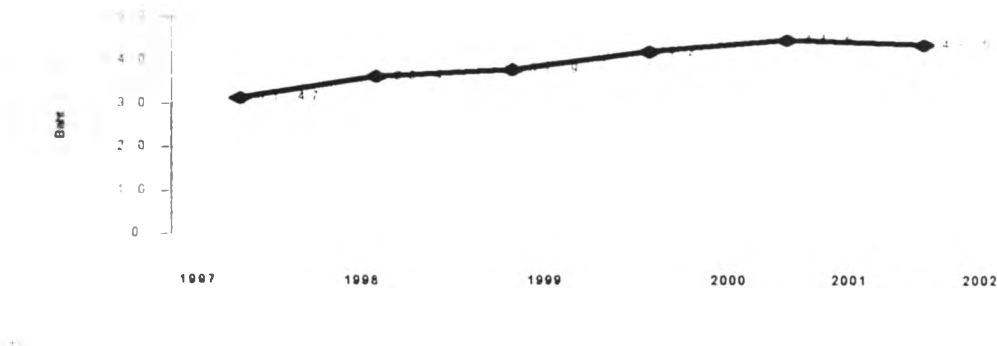


Figure 3.1: Exchange Rate

□ **Government Stability**

The changes of government for many times and lacking stability of present government affect ABC Company because it will decrease the confidence of foreign investors to invest in Thailand. This results in lacking of money in the Thai economy and increases the difficulty for company to find the capital sources to support company's finance.

□ **Tariff Barrier**

Policy against tariff barrier such as WTO agreement and economic cooperation in APEC which has founded to support free trading and economic cooperation decrease the tariff barriers. Consequently, ABC Company will have greater opportunity to expand in oversea.

□ **Environment protection**

Environment protection forces ABC Company to get ISO14000 in order to protect air pollution wasted water pollution and so on.

□ **Taxation Policy**

Taxation policy, which cut VAT to 7% from a previous 10% make this company, has more profits.

□ **Wage & Price controls**

Wage and price controls forces ABC Company pays the wage rate not less than the minimum wage rate. The minimum wage rate differs according to province as shown in following tables.

Table 3.1: Minimum Daily Wage Rates

<b>Minimum Daily Wage Rates</b>	<b>Baht</b>	<b>US\$</b>
Bangkok, Sumutprakan, Nonthaburi, Pathum Thani., Phuket, Nakon Pathom, and Samut Sakon	165	3.70
Phangga, Ranong, Chon Buri, Nakon Ratchasima, Saraburi, and Chiangmai	143	3.20
Other Provinces	133	2.98

Source: Ministry of Labor

According to Table 3.1, ABC Company has its head quarter in Bangkok and has factory in Sumutprakan Province so this company needs to pay minimum wage at least 165 baht per day.

## 2) Economic Factors

Economic factor affects ABC Company in several ways. For example, the current stage of business cycle, inflation, GNP, unemployment, and interest rate influence are explained below.

### □ Business Cycle

The cyclical changes that occur in an economics' overall level of business activities are called the business cycle (William F. Schaell and Joseph P. Guiltion: 1992, 23). The traditional business cycles go through four stages; prosperity (boom), recession (slow down), depression, and recovery. The swings in business activity occur because of factors such as variations in the overall supply of and demand for products, the ability and willingness of consumer to by product and of business to invest in new factory and equipment, the volume of customer spending, employment levels, interest rates, and government spending and tax policies. The following figure present Thailand business cycle.

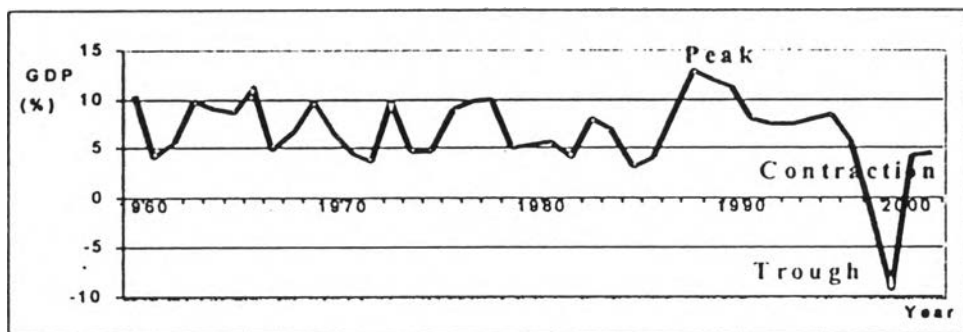


Figure 3:2: Thailand business cycle

Source: [www.bot.or.th](http://www.bot.or.th)

Thailand business cycles directly affect ABC Company. During upswings, the margin of the Company will grow. Furthermore, they can spend on sale promotion, which stimulates their customer. In the other hand, during the down swing in Thailand economic crisis, many hospitals tried to save more and spend less. For this reason, this Company would have lower profit in this period so it will spend less on a marketing research, new service development, and advertising in this that time.

□ **Gross National Product (GNP)**

GNP is the value of final goods produced within the country by using factors of production of that nationality, including all income from residents abroad. GNP trends of Thailand are shown in the following table.

Table 3.2: GNP of Thailand

Year	1997	1998	1999	2000	2001
GNP per Capital (Baht)	76,057	72,979	72,901	77,362	80,101

Source: [www.bot.or.th](http://www.bot.or.th) (2002)

GNP of Thailand has sustained growth, for this reason, Thai hospitals will have more income so they can be more expensive for infectious waste incinerating. Then ABC Company will have more profit. In contrast, GNP slow down means the income of Thai hospitals will reduce so this Company may have lower margins.

□ **Unemployment**

According to the Bank of Krungsri Audahya Public Company ([www.krugsir.com](http://www.krugsir.com)), the unemployment rate in 1999-2002 is shown in the following table.

Table 3.3: Unemployment Rated

Year	1999	2000	2001	2002
Unemployment rate	4.2	3.6	3.9	3.9-4.2

Source: ([www.krugsir.com](http://www.krugsir.com), 2002)

Unemployment affects the buying power of the unemployed and leads to higher tax for the employed, to pay for welfare, social services, unemployment compensation, food stamps and so on. This will reduce the effective buying

power of the employed. The fear of being laid off may lead employed people to save more and spend less (William Schaell and Joseph P. Guitinon : 1992, 36). For these reasons, ABC's customers will spend low expense so it will make low demand. Then it will cause of deflation. If deflation occurs this Company will have lower sales and profit.

#### □ Interest Rate

Thailand interest rates continue decline because the government has tried to stimulate consumption through expansionary fiscal policies allowing for an increase in budgetary deficit and accelerating budget disbursement during this fiscal year. The following figure shows Thailand interest rate.

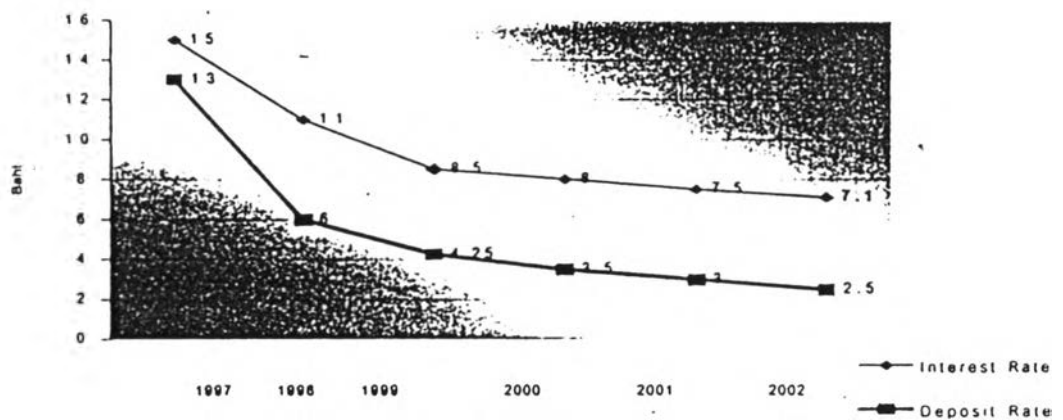


Figure 3.3: Thailand Interest Rate

Source: Bank of Thailand

Because Thai interest rate continues decrease, thus ABC Company can invest in new incinerating plant with lower interest rate.

#### □ Inflation Rate

Inflation is a risk in price levels. When price rise at faster than personnel incomes, there is a decline in consumer buying power.(William J. Stanton, Charles Futrell : 1987, 24). According to Bank of Thailand, the inflation rate continues decline so ABC Company should not rise their price of infectious

wasted incinerating service in this situation. The following table present Thailand inflation rate.

Table 3.4: Thailand Inflation Rate

Year	1999	2000	2001	2002
Inflation Rate	0.3	1.6	1.6	0.9

Source : [www.boi.go.th](http://www.boi.go.th) (2003)

### 3) Social and Cultural Factors

In general, social and culture factors, which affect ABC Company are, population demographic, income distribution, social mobility, lifestyle change, attitudes to work and level of education. The key social and cultural issues, which influence this company, are;

#### □ Population Demographic

The demographic factors, which influence ABC Company, are the rate of growth or decline of national population, change in the age of distribution of population, and the concentration of population in certain geographical areas. The following figure presents Thai population since 1992.



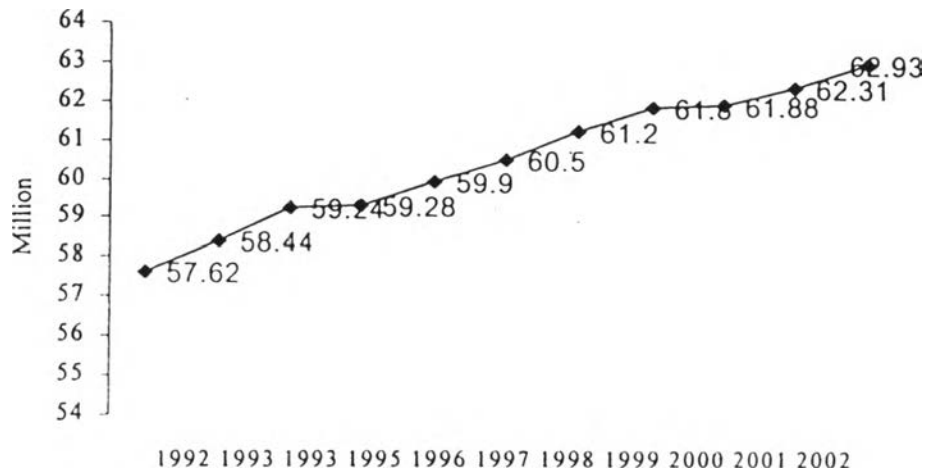


Figure 3.4: Thai population

When the number of Thai population grows, the number of infectious wastes also increases. In addition, the Thai population has more growth rate, number of Aids victims will increase, so the number of infectious waste will also rapidly expand. Then ABC Company will have more customers.

#### □ Life Style Change

Rising standards of living may result of changing in environment. For example, at present time most hospitals destroy their infectious wastes by incinerating more than the last ten years. These make more demand for infectious wastes incinerating service business.

#### □ Attitude to pollution and environment issue

Attitude to pollution and environmental issues affect ABC Company. However, this company continue do ISO 14000 in order to prevent any pollution and protect the environment.

#### 4) Technology Environment

According to William (1989: 30) “Technology has a tremendous impact on our life, our life styles, our consumption pattern, and our economic well being.” Furthermore, technological change can affect the activities of ABC organization as following topic.

##### □ Technology Change

Technology changes affect the type of product and service a company can provide, for example, by using controlled Air Incinerator, ABC Company can incinerate infectious wasted which does not destroy environment.

##### □ R&D innovation

Technology change influences the way of service. For instance, twenty years ago, infectious incinerating plants always use incinerators, which did not burn at high temperature. But now, this process do not use only incinerating process, they also can use Microwave technology or Controlled Air Incinerator to do this task.

##### □ Information Technology

Information Technology affects the way in which services are provided such as communication with suppliers and customers by e-mail and etc.

##### □ Industry

Technology changes also affect employees. In the past, ABC Company incinerated their infectious wasted by lower temperature, they have numerous employees but now they always incinerate infectious by controlled Air Incinerator so the number of customer increase then number of employees will grow.

### 3.1.2 Porter Five Force Analysis

One of the most important aspects of external analysis is the consideration of competitors. It is the factor directly influencing the capability of an organisation to position itself more or less effectively against its rivals. This analysis will use the “five-forces” approach proposed by Porter as a framework to examine the competitive environment of ABC Company.

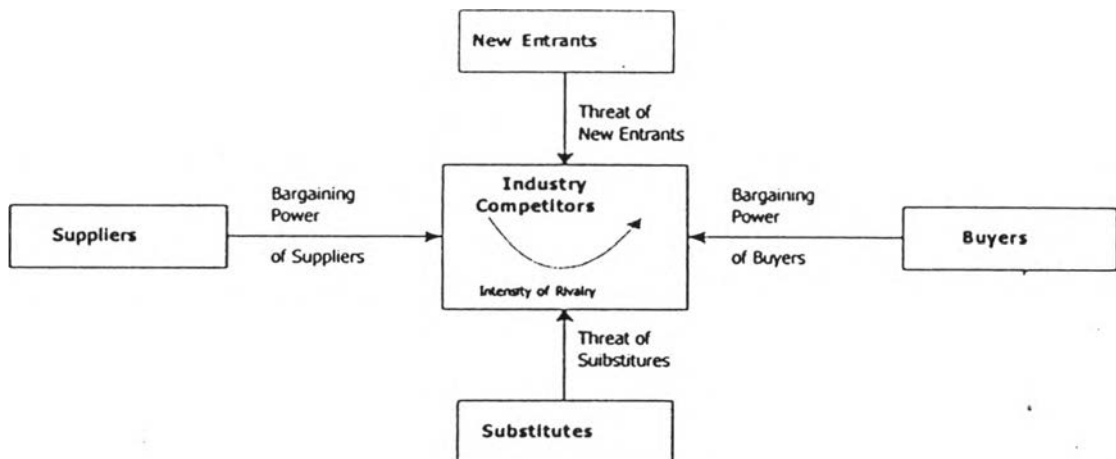


Figure 3.5 : Forces Driving Industry Competition

#### 1) The Rivalry Among Existing Competitors (Industry competitors)

Threat of competitor is very significant, according to Philip Kotler, (2000,218), a segment is unattractive if it already contains numerous, strong, or aggressive competitor. It is even more unattractive if the segment is stable or declining, if plant capacity additions are done in large increments, if fixed costs are high, if exit barriers are high, or if competitors have high stakes in staying in segment. These conditions will lead to frequent price wars, advertising battles, and new-product introductions and will make it expensive to compete. In case of ABC Company, there is no competitor in eastern of Thailand. However, infectious waste incinerating service business is now quite popular because people more concern with their quality of living. Therefore, competitions in this business will turns rapidly high.

## 2) Threat of New Entrants (Potential Entrant or Threat of Mobility)

New entrants conduct new capacity, they desire to gain market share and often substantial the resource. The threat to enter into an industry depends on the barriers to entry as follows.

### □ Economics of Scale

Economics of scale shows the inverse relation between unit costs of a product and the absolute volume per period. It deters new entrants by forcing to come in at large scale and risk strong reaction from existing competitors.

### □ Product Differentiation

Product differentiation means that the established businesses have strong brand identification and customer loyalties. Then new entrants must have to spend heavily to overcome existing customer loyalties.

### □ Capital Requirement

New entrants need to invest high financial resources. Generally, investment is required for working capital as same as production facilities.

### □ Switching Costs

Switching costs are one-time costs that customers would incur in changing from one supplier to another supplier. They include one time costs such as employee retraining costs, cost of new equipment, trials etc.

### □ Cost Disadvantages Independent of Scale

New entrance should consider cost disadvantages. They include competitive advantage that exiting competitors access such as proprietary product technology, favorable access to raw materials, favorable location, government subsidies and the experience or learning curve of the products etc.

### □ Government Policy

The government can restrict new entrants or exit manufacturers by licensing agreement, limitation of access to raw materials, pollution standard, safety standard etc.

For infectious waste incinerating service business, it is a low entry business: however, it is also easy to exit. According to Philip Kotler (2000: 219) “When entry and exit barriers are both low, firms easily enter and leave the industry, and the returns are stable and low.”

		Exit Barriers	
		Low	High
Entry Barriers	Low	Low, stable returns	Low, risky returns
	High	High, stable returns	High, risky returns

Figure 3.6: Barrier and Profitability

Source: Philip Kotler (2000: 219)

In addition, this business is not flexible and not high expenditure for investment so it is effortless to do business. The new entrants may share ABC’s market by cutting price down. However, if this Company emphasizes on quality of incinerating, customer service, and delivery, the customers will be willing to pay slightly more to obtain this better service from ABC Company.

### 3) Threat of Substitutes (New Products or Services)

Threat of Substitutes such as new products or service seem to be dangerous issues that going to impact ABC Company. The substitute service of infectious waste incinerating service business by Controlled Air Incinerator is Microwave Technology which faster and lower air pollution but, this technology is very expensive.

#### **4) The Bargaining Power of Suppliers**

According to Philip Kotler (2000,219), a segment is unattractive if the company's suppliers are able to raise price or reduce quantity supplied. Supplier tend to be powerful when they are concentrated or organized, when the costs of switching suppliers are high, and when the suppliers can integrate down-stream. The best defenses are to build win-win relations with suppliers or use multiple supply sources.

For ABC Company, suppliers such as oil's suppliers have more powerful. In addition, this Company is small so it will buy oil in high price. Furthermore, if OPEC increase oil price, cost of service of ABC Company also increased.

#### **5) The Bargaining Power of Buyers**

Because government hospitals are major customers of ABC Company so they always have high power for bargaining price of service. Furthermore, there are many competitors in this business and prices of service also depend on distance and volumes of infectious wasted. For these reasons, many government hospitals always bargain price of service and need longer credits.

### **3.2 Internal Analysis**

Internal analysis involves conducting a dispassionate audit of the company's strengths and weaknesses. Typically, every area of the business that can significantly influence the long-term survival and success of the business should be analyzed.

According to Lloyd L. Byars (1991 : 64) "Some of the areas that most business should analyze include the following: Financial position, Product position, Marketing capability, Research and development capability, organizational structure, Human resources, Condition of facilities and equipment, past objectives and strategies, and etc". In this thesis will evaluate internal organization of ABC Company by using the internal checklist. In addition, The following checklist is designed to include factors relevant for all types of industry; service & manufacturing, consumer & industrial, national & international. (Warwick Manufacturing Group , 2002: 1)

## 1. Marketing Checklist

Closely allied with an organization's service position is its marketing capability (i.e. its ability to delivery the right service at the right place at the right time and at the right price). (Byars, 1991 : 64) Typical questions that need to be answered in assessing ABC Company's market capability is shown in the Marketing Checklist.

Table 3.5 : Marketing Checklist

Item	Check List	Scores
Marketing	• Record on new product or service launches; successful, ahead or behind the competition?	+
	• Record on advertising campaigns.	0
	• Market share and size of markets; what are the trends, is the company getting stronger or weaker both in overall terms and with respect to the competition?	+
	• Skills of sales force; how many esquires are converted to orders?	+
	• Relationship with customers.	+
	<b>Total</b>	<b>+4</b>

Source : Applied from Warwick Manufacturing Group

For Marketing Checklist, ABC Company always records its new service launches and this company does not pay enough attention on advertising campaigns and sales promotions so it is given a "0 "score. Also, there are not many customers and this company still has satisfactory market share then it's score is a "+".

In addition, this company has high skills of sales force, it has very high converted to orders thus this score is "+". In view of relationship with customers, ABC Company

has good relationships with customers so this score is as “+”. In summary, the total score of Marketing Checklist is “+4”.

## 2. Research & Development

In general, every organization, whether it has a formal research and development department or not, must be concerned about its ability to develop new products or service. As same as ABC Company, in which research and development is significant, some questions that need to be answer is shown in the following Research & Development Checklist.

Table 3.6 : Research & Development Checklist

Item	Check List	Scores
Research & Development	<ul style="list-style-type: none"> <li>• Link between R&amp;D and Marketing; are current R&amp;D in line with market predictions?</li> </ul>	-
	<ul style="list-style-type: none"> <li>• Link between R&amp;D and Manufacturing; are products designed for ease of manufacture?</li> </ul>	-
	<ul style="list-style-type: none"> <li>• Investment; what are the trends year on year, how does this compare with the competition?</li> </ul>	0
	<ul style="list-style-type: none"> <li>• Record on R&amp;D with respect to new products and development of existing products?</li> </ul>	-
	<ul style="list-style-type: none"> <li>• Delivery performance on R&amp;D; is there simultaneous design, are new products ahead or behind the competition, how does R&amp; D compare on time to market, performance to plan?</li> </ul>	-
	Total	- 4

Source: Applied from Warwick Manufacturing Group

According to the checklist, It recommended that research and development of ABC Company is insufficient because there is no link between R&D and Marketing and Manufacturing so these score are as “-”. In addition, this company has only focus on infectious wasted incinerating service but it does not concentrate on new related



service such as radioactive waste, and etc. For investment; when compared with the competition, there are not quite differences from the competitors so this score is as "0". In addition, ABC Company does not have a Research & Development department but the Engineering department is responsible for this task. However, they do not concentrate on new services but they always develop technology for incinerators so they do not record it as R&D and has unsatisfactory delivery performance therefore, it is scored as "-". The total score is as "-4", meaning that ABC Company should address this problem immediately.

### 3. Service

For a business to be successful, it must be acutely aware of its product or service position in the market place. Without this type of information, no business can survive very long in today's competitive environment. Therefore, we need to answer many questions in assessing an organization's service. The Service Checklist is shown in the following items.

Table 3.7 : Product or Service Checklist

Item	Check List	Scores
Service	<ul style="list-style-type: none"> <li>• Analysis by market, area, product or service groups, outlets etc.</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Profit margins by individual product or service &amp; in total; compared to internal targets &amp; the competition.</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Life cycles of service; is there a good mix between new &amp; old?</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Price elasticity of demand; how sensitive is demand to price?</li> </ul>	0
	<b>Total</b>	<b>+3</b>

Source: Applied from Warwick Manufacturing Group

ABC Company has only one service; however, profit margin continues to increase and new laws force every hospital to incinerated all the infectious wasted, which does not effect air pollution. So the demand of incinerating services still grows.

ABC Company always analyses its service by market and area. Now this company service on eastern of Thailand and Sumutprakan so it market share is quite large. Therefore, this score is “+”. In addition, since 1999 profit of this service continue to grow thus it score is as “+”. For life cycle is is still in the growth stage, so this score is as “+”. However, prices of service depend on both distance between ABC plant and its customers. Furthermore, price is not very sensitive to demand. Therefore this score is as “0”. In summary, the total scores for service is very well are as +4.

#### 4. Plant, equipment & other facilities

The condition of an organization' plant, equipment and other facilities can either enhance or hinder its competitiveness. Several questions that need to be answered in this area are shown in the Plant, equipment & other facilities Checklist.

Table 3.8 : Plant, equipment & other facilities Checklist

Item	Check List	Scores
Plant, equipment & other facilities	<ul style="list-style-type: none"> <li>• Land &amp; buildings; location, age, owned or leased, value, condition, suitability for use?</li> <li>• Plant &amp; equipment; age, relationship between capacity &amp; demand, suitability, incorporation of new technology, maintainability?</li> <li>• Value of assets; with respect to competition, size of business?</li> </ul>	<p style="text-align: center;">0</p> <p style="text-align: center;">+</p> <p style="text-align: center;">+</p>
	<b>Total</b>	+2

Source: Adapted from Warwick Manufacturing Group

In view of plant equipment and other facilities, It is recommended that land and buildings which is shown in the following figure is acceptable. At the moment, ABC Company has a 3-year contract with Sumutprakan Hospital to set up an incinerator within the hospital.

It is suggested that after the contract expires the company should move the incinerator to its own facility in order to get a better location. Thus the score is “0”.



Figure 3.7: ABC Plant in Sumutprakan

The capacity of the plant and equipment of ABC Company is high and have new technology so this score is “+”. In case of the value of asset, the company has suitable assets compared with the size of the business, so the score is “+”. The total score of plant, equipment and other facilities checklist is “+2”.

## 5. Raw Material & finished goods stocks

One of the important items is Raw Material & finished goods stock, which ABC Company should not ignore. The following questions is need to be answered for the Raw Material & finished goods checklist.

Table 3.9: Raw Material &amp; finished goods Checklist

Item	Check List	Scores
Raw Material & finished goods stocks	<ul style="list-style-type: none"> <li>• Relationship with suppliers; bargaining power, number of suppliers, partnership deals, reliance on particular suppliers, vulnerability to exchange rate?</li> <li>• Stock turnover; trends year on year and with respect to competition?</li> <li>• Obsolescence &amp; deterioration.</li> <li>• Stores facilities &amp; record accuracy.</li> </ul>	<p style="text-align: center;">-</p> <p style="text-align: center;">0</p> <p style="text-align: center;">0</p> <p style="text-align: center;">0</p>
	Total	-1

Source: Applied from Warwick Manufacturing Group

Raw material of this business is oil, ABC Company is small company so it can not bargain for price of oil. In addition, crude oil price are dependent on OPEC, which is out of the control of the company. For another factor, there is not effect for ABC Company because it is service business so there is no problems for finish good such as deterioration.

In case of store facilities and record accuracy. ABC Company has warehoused in their plant for infection waste and ash, which is acceptable facility. However, I suggest this it should improve in the factor. In summary, total score is “-1” thus ABC Company should pay attention on this topic.

## 6. Distribution

For a business to be successful, it must concentrate on distribution. Therefore, we need to answer many questions in assessing an organization's distribution. The distribution checklist is shown in the following items.

Table 3.10: Distribution Checklist

Item	Check List	Scores
Distribution	<ul style="list-style-type: none"> <li>• Delivery service standards; what is the company's reputation &amp; how does this compare to the competition?</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Delivery facilities; can the warehouse &amp; fleet cope with demand, is it cost effective?</li> </ul>	0
	<ul style="list-style-type: none"> <li>• Availability of products by area; is this consistent or are some markets serviced better?</li> </ul>	+
	<b>Total</b>	+2

Source: Applied from Warwick Manufacturing Group

Delivery service of ABC Company is good reputation so this score is "+". In addition, delivery facility such as the warehouse is cost effective but it should improve in quality thus this score is "0" as shown in the following figure.

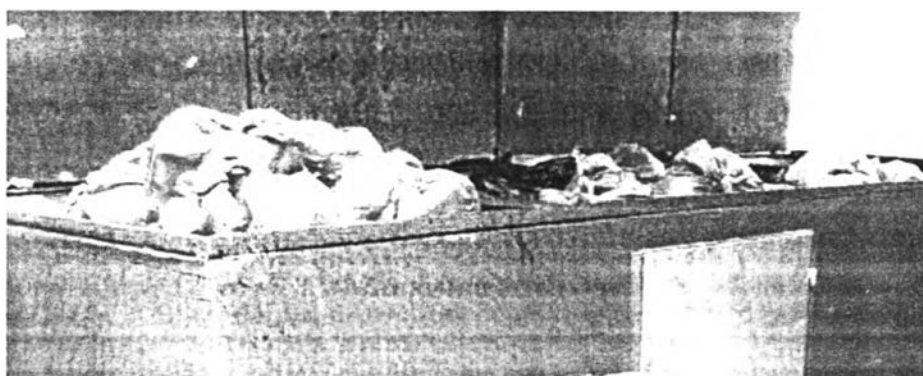


Figure 3.8: Current infectious wastes storage

Furthermore, this Company has availability of service by area in Sumutprakan and eastern of Thailand thus this score is “+”. The total score is +2.

## 7. Finance

Financial position of a business plays a crucial role in determining what it can or cannot do in future. By the way, financial information of ABC Company is shown in the following Financial Checklist.

Table 3.11: Financial Checklist

Item	Check List	Scores
Finance	<ul style="list-style-type: none"> <li>• Relationship with investors (banks, shareholders), creditors &amp; debtors; what is the availability of short &amp; long term funds, ability to raise funds, level of bad debt?</li> </ul>	+  0
	<ul style="list-style-type: none"> <li>• Cash flow control; good or bad, contribution of individual products?</li> <li>• Record of performance; Return On Investment ROI, accounting ratios?</li> </ul>	0
	<b>Total</b>	+1

Source: Applied from Warwick Manufacturing Group

For financial checklist found that ABC Company have good relationship with investors For cash flow control, it is acceptable. For record of performance, ROI is also acceptable. The total score of financial checklist is “+1”.

## 8. Management & staff

All the activities of an organization are significantly influenced by the quality of the management and staff. Thus to accurately assess its strengths and weakness, an

organization must make an objective evaluation of all level of management and the staffs. Some typical questions of interest in this area are shown in the Management & staff Checklist.

Table 3.12: Management & staff Checklist

Item	Check List	Scores
Management & staff	<ul style="list-style-type: none"> <li>• Skill &amp; attitudes; ability to adapt to change, empowered?</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Industrial relations &amp; turnover; strength of unions &amp; type of agreement (single or multiple), high or low staff turnover?</li> </ul>	+
	<ul style="list-style-type: none"> <li>• Training &amp; recruitment; investment in training, record on recruitment?</li> </ul>	0
	<b>Total</b>	<b>+2</b>

Source: Applied from Warwick Manufacturing Group

Skill and attitudes of ABC employees are very good, the employees have ability to adapt to change so this score is as “+”. In addition, they have low staff turnover, the score also “+”. However, there is low employee training thus this score is “0”. The summary score is +2.

## 9. Business Management & organization

All businesses produce and market their products through a business management and organizational structure. This structure can either help or hinder an organization in achieving its objectives. However, to assess a firm’s strengths and weaknesses, we need to answer several questions from the Business Management & organization Checklist.

Table 3.13: Business Management &amp; organization Checklist

Item	Check List	Scores
Business Management & organization	<ul style="list-style-type: none"> <li>• Organization structure; does it match current needs, centralized or decentralized?</li> </ul>	-
	<ul style="list-style-type: none"> <li>• Culture, management style &amp; philosophy; is this suited to the business, do actions match the spoken philosophy?</li> </ul>	0
	<ul style="list-style-type: none"> <li>• Communication; formal or informal, effective?</li> </ul>	0
	<ul style="list-style-type: none"> <li>• Quality; policy, qualification to recognized standard, costs, record on improvement?</li> </ul>	0
	Total	-1

Source: Applied from Warwick Manufacturing Group

Organization structure of ABC Company is a functional structure. However, this company does not has research & development department, but mechanical department also respond it still they need to repair an incinerator so research and development will involve technical and machinery but not concentrate on new product or service.

Management style is centralization on the chief executive so this it score is “-.” For communication in company usually use informal communication so it’s score is as “0”.

ABC Company considers of quality but sometime they do not pay attention on qualification to recognize standard. They contemplate only cost. However, this company lack for considering of recording on improving so this score is “0”. In summary, for business management and organization of ABC Company has total score is as “-2”, which is the weak point of this company.



### 3.3 SWOT Analysis

After considering of both internal and external analysis so SWOT (strengths, weaknesses, opportunities, and threats) analysis of ABC Company is shown in the following.

Strength	Weakness
<ul style="list-style-type: none"> <li>• It market share in eastern of Thailand is quit well and profit of this service is continue grow.</li> <li>• Life cycle is stay on growth stage.</li> <li>• Plant and equipment have high capacities, and have new technology</li> <li>• Good delivery service</li> <li>• Satisfactory with service by area</li> <li>• Staff have good skill and attitude</li> <li>• Low staff turnover</li> <li>• Few competitor in current eastern area</li> </ul>	<ul style="list-style-type: none"> <li>• Ineffective research and development</li> <li>• Can not control price of raw material</li> <li>• Short term relationship with supplier</li> <li>• Not satisfy relationship with supplier</li> <li>• Organization structure is not effective</li> <li>• Culture in company is “powerful”</li> </ul>

Opportunity	Threat
<ul style="list-style-type: none"> <li>• New law force every hospital incinerates infectious wasted by not effect air pollution. So demand of infectious wastes incinerating service will grow.</li> <li>• Interest Rate continues decline so ABC Company can pay lower interest rate.</li> <li>• Social need more pay attention on air protection</li> <li>• Technology development such as Controlled air incinerator help ABC Company can incinerate infectious waste easier and has lower dust</li> </ul>	<ul style="list-style-type: none"> <li>• There are higher new entrants in the future because this business need low investment and not flexible technology.</li> <li>• Competitive environment due to aggressive competitors in the future.</li> <li>• Suppliers have more powerful and ABC Company can not control oil's price.</li> <li>• Substitute product such as Microwave technology can increase infectious waste faster and lower air pollution but now it still expensive.</li> <li>• Customers have more powerful to bargaining price.</li> </ul>

### 3.4 Product Life Cycle

According to Walker, Boyd and Larreche, the product life cycle is concerned with the sales history of a product of service. The concept holds that a product's sales change predictably over time and that products go through a series of five distinct stages: introduction, growth, shakeout, maturity, and decline. Each of these stages provides distinct opportunities and threats, thereby affecting the company's strategy as well as its marketing programs. The key characteristics of each stage of the product life cycle are summarised by Walker, Boyd and Larreche are shown in following table.

Table 3.14: Summary of Product Life-Cycle Characteristics

Stage Characteristics	Introduction	Growth	Shakeout	Mature	Decline
Market growth rate	Moderate	High	Levelling off	Insignificant	Negative
Technical change in product design	High	Moderate	Limited	Limited	Limited
Segments	Few	Few to many	Few to many	Few to many	Few
Competition	Small	Large	Decreasing	Limited	Few
Profitability	Negative	Large	Low	Large for high market share holders	Low

In case of ABC Company, they stay in growth stage. Philip Kotler suggested the objectives and strategies for growth stage as:

<b>Growth Stage</b>	
<b>Objectives:</b>	<b>Maximise market share</b>
<b>Strategies:</b>	
<b>Product/service</b>	<b>Offer product extensions, service, warranty</b>
<b>Price</b>	<b>Price to penetrate market</b>
<b>Distribution</b>	<b>Build intensive distribution</b>
<b>Advertising</b>	<b>Build awareness and interest in the mass market</b>
<b>Sales promotion</b>	<b>Reduce to take advantage of heavy consumer demand</b>

The objectives and strategies for Growth Stage will help ABC Company to consider of their products life cycle and try to make the right strategic dimension. In order to get more sales, ABC Company should offer service extensions or warranty such as warranty for quality of air pollution testing from incinerating service and so on. In

addition price of service should not expensive in order to penetrate both current and new market. For distribution, ABC Company should build intensive distributor and develop new channel distribution such as online service. In addition, this company should invest for advertising and interest in the mass market together with reduce sale promotion to take advantage of heavy consumer demand.

### **3.5 Target marketing**

After select the focus strategy, ABC Company will select market segment of this business. In general, there are three steps in target marketing, first is market segmentation, secondary is market targeting, and finally is product positioning as explain below.

#### **3.5.1 Market Segmentation**

According to Malcolm McDonald “ Segmentation is about identifying specific groups of customers whose needs you understand in depth and for whom you develop specific offers with differential advantage over the offer of competitors” The objective of market segmentation is as below;

- Better matching of customer needs
- Enhanced profits
- Enhanced opportunities for growth
- Retain customers
- Targeted communications
- Market segment share

In general, major segmentation variables for consumer marketing are geographic, demographic, psychographics, and behavioristic. In case of this business, prices of incinerating service depend on distance and volumes of infectious wastes. For example, if customer placed near infectious incinerating plant, price of service always cheaper than longer distance. Therefore, segmentation of infectious service business cans separates by area as show in the following figure.

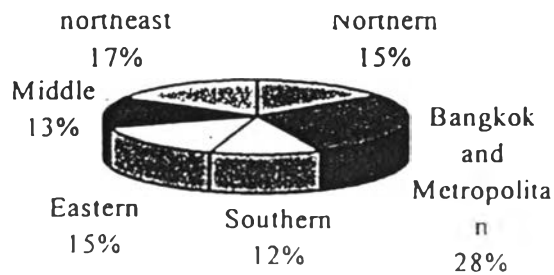


Figure 3.9: Market Segmentation

Source: Applied from Pollution Controlled Department

Market segmentation of infectious waste incinerating service business can separate by region. For Bangkok and Metropolitan area is 28%, northern of Thailand, market segment is 17%, northeast 15%, middle of Thailand 13%, eastern 14% and southern 12%.

### 3.5.2 Market Targeting

The marketing target that the firm chooses must support the marketing objective. Strengths and opportunities must be used to analyze whether the firm can do the business with the target or not. The marketing target that the firm chooses must also give some profits. In addition, market targeting has 3 different types which as different detail as explain below.

#### □ Undifferentiated Marketing

This approach is not to recognize the different market segments in the market. It tries to design a product/service that will appeal to everyone. Furthermore, it depends on the ground of cost economics and not practiced much and more.

#### □ Differentiate Marketing

This strategy where a firm decided to operate in two or more segments of the market but designs separate product/service that will appeal to everyone. Furthermore, differentiated marketing typically creates more sales than differentiated marketing. This approach will increase cost of modification, production cost, administration costs, inventory costs and etc.

### □ Concentrated Marketing

For this strategy, firm goes after a large share of one or a few markets. From this strategy, it can earn the firm high rates of return on investment, but also involves higher normal risks (Warwick Manufacturing Group ; 2002, 15)

ABC Company uses concentrated marketing strategy, it selects both the eastern of Thailand and Sumutprakan, since ABC Company has current plants of infectious waste incinerator placed in Sumutprakan and there are many customers nearby. Furthermore, ABC Company focuses on major hospitals and industry in this zone.

### 3.5.3 Product/Service Positioning

Product/Service Positioning is as an image of the product/service, which ABC Company tries to differentiate from its competitors. For the success of positioning, ABC Company should understand the target customers and their expectation. Then they should build that expectation to be the image of the service. The important thing is the image must be different from the competitors. In addition, ABC's service positioning is good quality but reasonable price.

		Price		
		High	Medium	Low
Quality	High		ABC's service	
	Medium			
	Low			

Figure 3.10: ABC's Service Positioning

In addition, the differential advantage means the service that the target customers receive from the firm is unique, so the customers get special satisfaction. In case of ABC Company, they have some services different such as free training and providing the infectious waste bins to its customers, and etc.

## 3.6 Marketing Mix

According to William Zikumd and Michael D' Amico ( 1984:12) the term marketing mix describes the result of management's efforts to creatively combine interrelated and interdependent marketing activities. Faced with a wide choice of media, message, prices, distribution methods, and other marketing variable, the marketing manager must select and combine the "ingredient" of the organization's marketing mix.

To achieve organizational objectives, the marketing executive must be constantly engaged in fashioning a mix of marketing procedures and policies. This marketing mix element are product/service, price, place (distribution), and promotion. These are commonly referred to as the " 4 P's of marketing"

### 3.6.1 Product or Service

The term of "Product" is defined as an idea, a physical entity(a good), a service, or anything that can be offered to a market for attention, acquisition, user, or consumption that might satisfy a want or need. It includes physical objects, services, persons, place, organizations, and ideas(Philip Kotler and Gary Armstrong : 1991,274).

For ABC Company, its service is infectious waste incineration by using Controlled Air Incinerator, which controls emission of TSP, SO<sub>2</sub>, NO<sub>x</sub>, CO, HCL, VCM. In addition, infectious waste incineration of ABC Company can pass the Emission Air standard from incinerator Stacks from Ministry of Public Health so it will not affect the environment.

### 3.6.2 Price

Price is significant in the marketing mix. Furthermore, price is the only one of the marketing mix that creates sales revenue, the other elements are all costs. (Warwick Manufacturing Group: 2002,16) In general, factors to consider when setting price are as following topics.

## **a) Internal Factors**

Generally, business should have a marketing objective. For example, survival, current profit maximization market-share leadership, product quality leadership or other objective. In case of ABC Company, the marketing objective is to expand their market share and profit margin because the marketing mix strategy of this company is to provide the good quality service at a reasonable price.

## **b) External Cost**

### **□ Market and Demand**

ABC Company should consider of costs to set the floor for prices, and the market demand to set the ceiling. Generally, pricing varies according to different types of market, which consists of many of buyers and sellers, price set by market, not by individual seller. Furthermore, ABC Company should consider consumers perceptions of price an value and they should analyzing price/ demand relationship. Each price that the company might change will lead to a different level of demand have different impact on marketing objective.

### **□ Competitors Price and Offer.**

ABC Company need to learn the price and quality of each competitor's offers.

### **□ Other External Factors**

ABC Company should consider of economic conditions, reseller conditions and government also.

## **c) General Pricing Policy Approaches**

In general, pricing approaches are as below.

### **□ Analyse Competitor's Price and offer**

The company needs to learn the price and quality of each competitor's offer. This approach can use as an orienting point for its own pricing. Three Considerations in setting a price are;



- Product Cost
- Consumer perception of product value
- Competition

#### □ **Cost –Based Pricing Approach**

These approaches have 2 techniques

##### 1) **Cost- Plus Pricing**

These techniques involve making a standard mark up to cost of the products. (Phillip Kotler 1986,352) Mark up differs considerably among good. However, this method ignores current demand and is not likely to lead to optimal price.

##### 2) **Breakeven Analysis and Target Profit Pricing**

These approaches, the firm tries to determine the price that will produce the profit it is seeking by use the concept of a breakeven chart.

#### □ **Buyer- Based( Perceived-Value) Pricing**

This approach base on buyer's perceptions of value, not the seller's cost, as the key pricing. In addition, non-price variables in the marketing mix are used to build up perceive value in the buyer's minds. Price is set to capture the perceived value.

#### □ **Competition –Based Pricing Approach**

These approaches have 2 techniques.

##### 1) **Going Rate- Pricing**

Firm bases its price largely on competitor's price with less attention paid to its own costs of demand. This approach is very popular pricing method.

##### 2) **Seal – Bid Pricing**

- Competitive –oriented pricing where firm bids for jobs

- Based on expectations of how competitors will price rather than on a rigid relation to firm's cost or demand.
- The net defect of not wanting to price too low or high can be described in term of the expected profits of the particular bid. (Warwick Manufacturing Group:2002,16)

The price of service of ABC Company is base on competitor's prices. This company always sets it prices similar to competitors Price of service can separate into 2 groups.

Distance	Price ( Baht/kg)		
	ABC Company	X Company	Y Company
<b>Group 1: For high volume (hospital and clinics).</b>			
Less than 100 km	12	12	10
100-200 km	13	13	11
More than 200 km.	14	14	-
<b>Group 2 :</b> For Industrial ( Low Volumes)	100,000 baht per year.	100,000 baht per year.	-

### 3.6.3 Place

Place in the four Ps is involve with where the product or service should be made available to the customer. This usually means choosing a range of places, none of which are the place of manufactures. Distribution is therefore the key element of "Place". Furthermore, distribution involves all those activities to do with transferring the goods from the producer to the consumer.

In general, there are many way to distribute product such as

- Producer → Customer
- Producer → Industrial distributor → User

- Producer → Agent → User
- Producer → Agent → Industrial distributor → User

(William J. Stanton, Michal J Etzel, Bruce J. Walker; 1991,311)

For ABC Company use direct channel.



This direct Channel accounts for a greater baht volume of business products than any other distribution structure. In addition, the customers are not many customers but they always buy in large volumes so ABC Company can directly sell to them.

### 3.6.4 Promotion

Promotion is one of the four major elements of the company's marketing mix. The instruments of marketing communications are advertising, sales promotion, publicity and personnel selling. The promotion of ABC Company is shown in the following topics.

#### a) Advertising

Advertising is any period form of non-personal presentation and promotion of ideas, goods or services. Advertising provides ABC's customers with information about infectious waste incinerating service, which help create attention, interest and desire in a service. In addition, advertising is to create awareness of a brand, to keep a service constantly in the mind of a customer, to stimulate interest in a product/service or brand to give out information about what a service can do for the customer and to build the selective demand. Therefore, ABC Company will advertise on local radio in Eastern of Thailand and on Internet.

### □ Sales Promotion

Sales Promotion refers to short-term incentives to encourage purchase or sales of a product or service. In case of ABC Company, it will give an infectious wastes bin for their customers.

### □ Publicity

Publicity is non personnel stimulation of demand for a product, service, or business unit by planting commercially significant news about it in a published medium or obtaining favorable presentation of it upon radio, television, or stage that is not paid for by the sponsor. For ABC Company , it also present its service by radio. In addition, it will set free training course for infectious waste's knowledge for public.

### □ Within each category

Within each category are found promotools such as sales presentations, trade shows, specialty advertising, catalogs, contents, premiums, coupons, trading stamps, fairs, demonstrations, press kits, and etc. (Warwick Manufacturing Group, 2002,8). ABC Company will sent personnel sell to major hospital and industrial company in order to present it services.

## 3.7 Competitor Analysis

For incinerating service business, there are about 2 major companies in the Sumutprakan and East of Thailand. To gain competitive advantage, the ABC Company should know competitors' weakness to overcome competitor at a particular point. Then conduct rating factors for evaluating competitors based on the company's judgement. In this case will evaluate two main competitors in incinerating service business in eastern of Thailand. The names of the competitors are kept as confidential data then their names are represented as competitor X and Y Company

Table 3.15: Competitor Analysis

Weight Factor	Weight Score	ABC Company	Competitor	
			Company X	Company Y
Quality of burning	15	14	14	10
Price	20	18	15	18
Technology	10	10	9	7
Environmental Effect	20	19	18	15
Raw Material Price	10	7	8	9
Service	10	8	8	8
Deliverly	10	7	7	6
Other	5	4	4	3
<b>Total</b>	<b>100</b>	<b>87</b>	<b>83</b>	<b>76</b>

According to Table 3.15, the quality of burning, technology and delivery of ABC company have the highest scores. For price, the cost leadership is company Y. In case of environment effect, ABC Company has the most environmental protects. For raw material company Y has the highest scores. In case of service and delivery Company X has equally score as ABC Company so ABC Company should have new strategy to develop its service and delivery.

### 3.8 Demand of Infectious Wastes

According to I-Tech Center (2002), volume of infectious wastes in Sumutprakan and the eastern of Thailand is shown in the following table.

Table: 3.16: Volume of infectious in Sumutprakan and eastern of Thailand

Year	1998	1999	2000	2001	2002
Volume of Infectious waste (Tons/day)	4.5	4.80	5.06	5.34	5.66

Source: Trend Intertrade

### 3.9 Forecasting Demand

Forecasting is the most critical area of incinerating management. The forecasting demand enable better planning for service so the company is able to meet demand. In this thesis, linear forecast will be used to predict infectious waste demand for next 10 year. This technique draws a straight line through the time series to produce a best fit. This is normally done by the least square method, through other mathematical techniques are also available. The least square criterion requires that the line fitted to the data should be the one which minimize the sum of the squares of the vertical deviations of the data points from the line. Some of the points are likely to be above the line, and therefore positive, and some below the line, and so negative. These would cancel each other out if one were merely to minimize the sum of the deviations by using the square of the deviations this is avoided.

In fitting a line of the form  $Y = aX + b$  to the time series data so as to justify the least square criterion, there is the problem of how closely the straight line corresponds to these data. The goodness of fit is measured by the coefficient of correlation ( $R$ ) or the square of this quantity ( $R^2$ ), which is the coefficient of determination. In practice, the  $R^2$  which coefficient is used most frequently. If the fit of the straight line correspond to those data is very poor, the value of  $R^2$  approaches zero. If the fit is very good, the value will be close to 1.

Within the infectious waste incinerating business, the accurate predictions using linear trend lines requires very high coefficient determination. They should be above 0.90 and preferably higher.

Fitting the trend line of infectious wastes data produce the following result.

$$Y = 0.286 X + 4.214$$

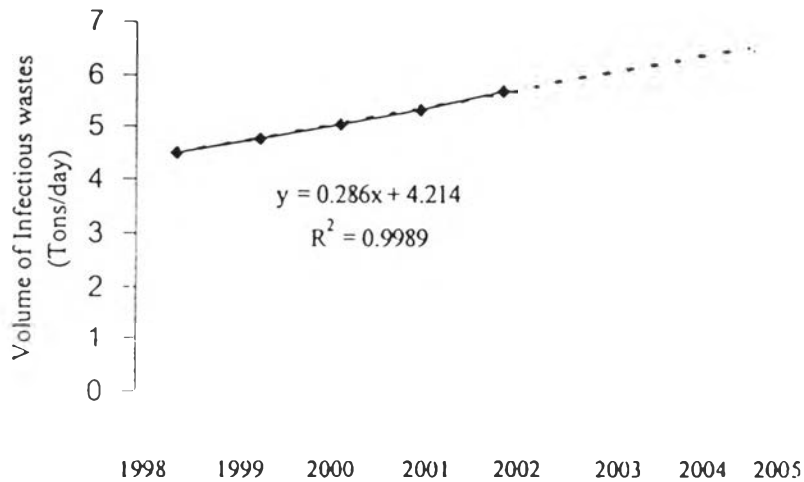


Figure 3.11; Forecasting Demand

This indicates that a trend line starting at 4.214 tons per day and growing by 0.286 infectious wastes per year(X) produce a quite good fit with the actual volume of infectious wastes in each year since the coefficient is 0.9989 is very high. To forecast traffic in one need to add the passengers for each year of the 5 years from 2003-2007 is shown in the following table.

Table 3.17: Forecasting demand

Year	2003	2004	2005	2006	2007
Volume of Infectious waste (Tons/day)	5.94	6.22	6.51	6.80	7.08

Trend projections are simple and easy to use but they can be used only if the data exhibit some regularity without wide fluctuations.

### 3.10 Supply

In general, many hospitals dispose their infectious wastes by many methods. Some hospitals dispose with general wastes. Some burn these wastes by using their own incinerator. And some use private companies to incinerate their infectious waste. According to I-Tech Center (2002) “ 40% of infectious wastes was dispose by

Controlled Air Incinerator, 25% use their own incinerator which often do not pass environmental standards from incinerator Stack from Ministry of Public Health, 5% use landfill, and 30% dispose with general wastes". However, the new Law forces, all hospitals incinerate all infectious in incinerator which confirm to air pollution standards. The current supply of infectious waste, which is incinerated by Controlled Air pollution, is shown in the following table.

Table 3.18: Supply of infectious waste incinerating

Year	1999	2000	2001	2002
Average of Volume of Infectious waste (Tons/day)	2.100	2.211	2.327	2.450

Source: Trend Intertrade (2002)

According to table 3.18, supply of infectious incinerating around 2.1-2.45 ton/day. Consequently, Gap of this service is 3.55-3.9 ton/day.

### 3.11 Sale Forecasting

According to total demand estimation and market segmentation, ABC Company has selected to penetrate the market in the east of Thailand. ABC Company wants market share 50% of total market. Therefore, sale forecast for infectious wastes incinerating service are as below.

Table 3.19: Sale forecast

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Volume of Infectious waste Tons/day)	1.78	1.86	1.95	2.04	2.12	2.21	2.23	2.38	2.47	2.55