

## **CHAPTER 2**

### **THEORETICAL FRAMEWORK**

#### **2.1. Feasibility Study**

As the name implies, a feasibility study is an analysis of the viability of an idea. The feasibility study focuses on helping answer the essential question of "should we proceed with the proposed project idea?" All activities of the study are directed toward helping answer this question. Feasibility studies can be used in many ways but primarily focus on proposed business ventures. Farmers and others with a business idea should conduct a feasibility study to determine the viability of their idea before proceeding with the development of the business. Determining early that a business idea will not work saves time, money and heartache later. A feasible business venture is one where the business will generate adequate cash-flow and profits, withstand the risks it will encounter, remain viable in the long-term and meet the goals of the founders. The venture can be a new start-up business, the purchase of an existing business, an expansion of current business operations or a new enterprise for an existing business.

The result of feasibility is then a project whose background conditions and aims have been clearly defined in terms of its central objective and possible marketing strategies, the possible market shares that can be achieved, the corresponding production capacities, the plant location, existing raw materials, appropriate technology and mechanical equipment and, if required, an environment impact assessment. The financial part of the study covers the scope of the investment, including the net working capital, the production and marketing costs, sales revenue and the return on capital invested. (Behrens & Hawranek 15)

In this theses, the rearmost analysis is broken further down to marketing and financial analyses. The marketing aspect analysis are the 4Cs : company, context, customer and competitors and the 4Ps : Product, Price, Place, Promotion. As one

might suggest, the financial part utilizes the de facto financial tools, namely Payback Period, Discounted Payback Period, Net Present Value (NPV) and Rate of Return (IRR).

## **2.2. Marketing Strategy**

### **2.2.1. Analyzing the 4Cs**

A substantial amount of analysis of customers, competitors, and the company itself occurs before decisions made concerning specific components of the marketing program. This reflects our view that successful marketing management decisions usually rest on objective, detailed and evidence based understanding of the market and environmental context. The analysis necessary to provide the foundation for a good strategic marketing plan should focus on four elements of the overall environment that may influence a given strategy's appropriateness and ultimate success.

The 4 Cs should be used when performing a market assessment and background evaluation of the situation at hand, as follows:

1. Context
2. Company
3. Customers, and
4. Competitors

Marketers have developed numerous analytical frameworks, data collection methods and statistical tools to help track and evaluate these elements. And ongoing developments in telecommunications and computer technology are making faster and more sophisticated analytical tools available almost daily.

#### **2.2.1.1. Context**

Consider macro-economic factors as well as other external factors (industry, consumer trends) including broad social, economic and technology trends – in which

the firm compete. Does marketing create needs? The distinction between needs and wants helps put into perspective the charge that marketers create needs or that marketing makes people want things they don't need. Neither marketing nor any other single social force can create needs deriving from the biological and emotional imperatives of human nature. On the other hand, marketing activities and many other social forces do influence people's wants. Indeed, a major part of the marketer's job is to help develop an attractive product or service, then stimulate customers wants for it buy convincing them it can satisfy one or more of their needs better than available alternatives.

#### **2.2.1.2. Company**

This analysis provide the foundation for good marketing strategy on company's own internal resources, capabilities and strategies. There are like as organization's mission/ objectives/ strategy, strengths and weaknesses, basis for competitive advantage, financial and other performance indicators, brand/product specifics.

#### **2.2.1.3. Customer Analysis**

- Target customer

In terms of market segmentation, targeting and positioning in marketing strategy because different people and organizations have different needs and seek different benefits, the entire global population is seldom a viable market for any single product or service.

- Consumer segmentation

The market for a product category is usually fragmented into several distinct market segments. Each segment consists of people or organizations that are relatively similar in their wants and the benefits they seek. But each segment desires different benefits from the same product category.

- Positioning

The other things must be considered when developing an effective marketing strategy is how the position the firm's offering to the target segments. That is, what combination of product features, price and other marketing program variables will both appeal to the target customer and differentiate the company's offering from the competition.

#### **2.2.1.4. Competitor Analysis**

Marketers have developed numerous analytical frameworks, data collection methods and statistical tools to compete with the other competitor. We have advantage competitive than the other company and that is demonstrably superior to competitive offerings on one or more dimensions, as follows:

- A well designed package can help preserve the product's quality and increase customer convenience.
- A strong brand identity provides assurance of consistent quality and performance from purchase to purchase.
- Warranties and guarantees reduce the customer's financial risk.
- And customer services during and after the sale help to ensure that buyers receive full value from their purchase.

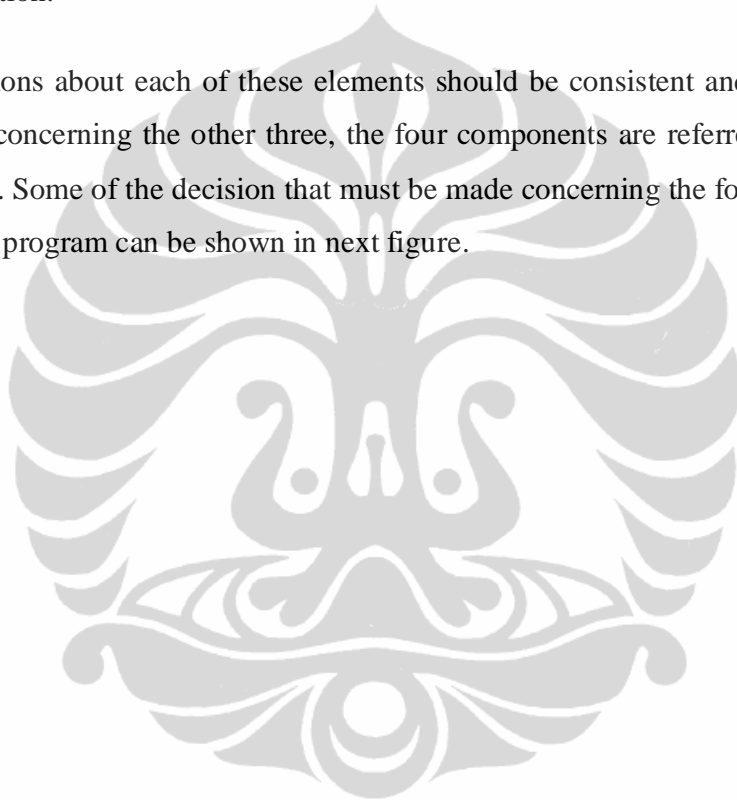
#### **2.2.2. Analyzing 4Ps**

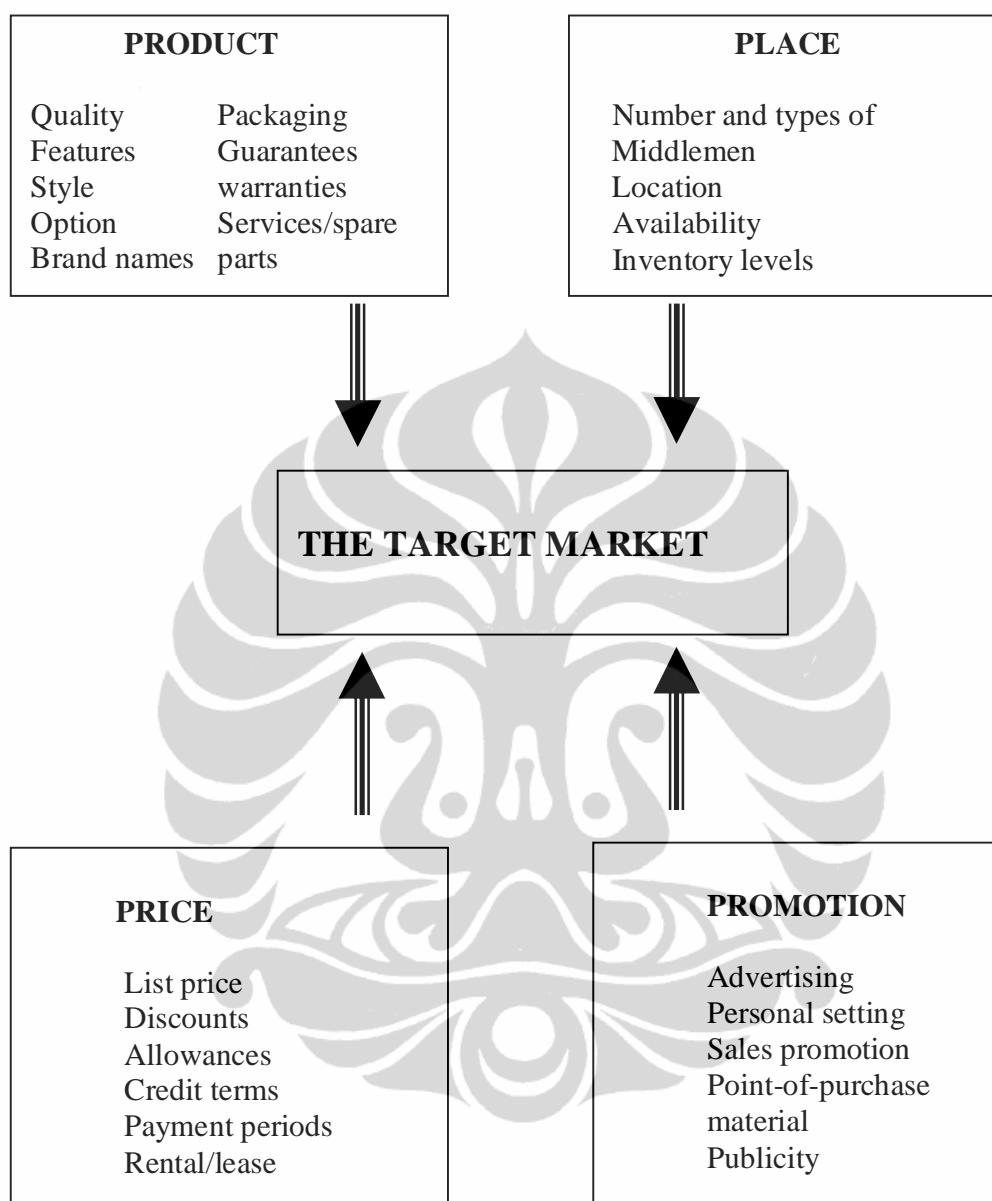
Once we have analyzed the 4Cs and identified a target customer segment, the marketing task becomes of designing an offering that will provide the firm with a unique position within that target market. The proposal should meet the potential customers wants and preference and establish a sustainable advantage over competitors. Many of tactical decisions are involved in designing a marketing program to achieve such a position, but those decisions can be sorted into four broad categories of variables over which a manager has some degree of control in the short

term. The controllable elements of a marketing program are often referred to as the 4Ps:

1. Product,
2. Price,
3. Place and
4. Promotion.

Because decisions about each of these elements should be consistent and integrated with decision concerning the other three, the four components are referred to as the marketing mix. Some of the decision that must be made concerning the four elements of a marketing program can be shown in next figure.





(Source : Mullins & John 19)

**Figure 2.1. Decision within the four elements of the marketing mix**

### **2.2.2.1. Product decision**

The holy grail of any marketing program is designing products service that delivers the features and benefits that target customer's wants and that is demonstrably superior to compete offerings on one or more dimensions. It is also important to note, however, that there are many other product-related decisions that can either augment or decrease customers perceptions of the product's value.

- A well-designed package the product's quality and increase customer convenience.
- A strong brand identity provides assurance of consistent quality and performance from purchase to purchase.
- Warranties and guarantees reduce the customer's financial risk.
- And customer services during and after the sale help to ensure that buyers receive full value from their purchase.

### **2.2.2.2. Pricing decision**

Many managers believe that they don't have much control over the price of their products or services. In their view, price is dictated by firm's costs and by competitive forces. Thus, many firms base their pricing decision largely on what is necessary to recover their costs or match competitor. There is clearly some justification for such an approach given that firms cannot price their products or service below cost – at least not for long.

On the other hand, there is a danger that prices set solely on the basis of cost or competitive considerations will not reflect customer value. The price may be higher than the customer is willing to pay. Resulting in a loss of sales and market share. Alternatively, the price may be much lower than customers think the product is worth, resulting in low margins and the sacrifice of potential profits by the manufacturer.

Therefore, an appropriate price-setting process involves a consideration of a variety of strategic, cost and competitive factors and market research information reflecting the product's value as perceived by customers in the target market.

While determining an appropriate price level for a product or service is a complicated process, most firms do not charge the same list price to every customer all of the time. Instead, they develop a price structure that establishes guidelines for adapting the price to variations in costs and demand across different geographic territories, national boundaries, levels of the distribution channel, items within the product line and customer segments.

### **2.2.2.3. Place/Distribution Decision**

The importance of the distribution component of a marketing program is simple : customers won't buy your product or service unless it is readily available when and where they want to buy it. Effective distribution makes the right place at the right time to satisfy the target customer.

Sometimes the customer performs most of the physical distribution activities necessary to acquire a product or service, as when a family drives through the country to buy vegetables at farmer's roadside stand. In other cases a producer may distribute goods or service directly to end-users through a mail order catalogue or website, for instance. Most goods are, however, distributed through marketing channels consisting of a variety of middlemen, such as wholesalers, agents and retailers.

Would customers be better off buying direct from the producer and bypassing the middlemen ? Usually not. While middlemen can be eliminated, someone must still perform the necessary distribution activities. Middlemen often perform those activities at a lower cost than either the customer or the manufacturer could themselves.



Therefore, the distribution component of most marketing program focuses on issues like what types of institution – and how many of each- should be included at each level of the distribution channel, and how those channel members can be coordinated and motivated to effectively service the producer's ultimate customers.

#### **2.2.2.4. Promotion Decision**

Regardless of the superiority of a firm's product or service, or the attractiveness of its price, customers won't buy it unless they know it exists, the benefit it offers and where to find it. Thus, the final component of a marketing program consists of a variety of promotional tools aimed at informing target customers about the offering and persuading them to make a purchase. These tools include :

- Advertising
- Personal selling, and
- Sales promotion

The challenge, of course, is determining what combination of communication tools will be most effective in reaching potential customers, what message and appeals they should deliver and how extensive the communication must be for the firm to achieve its marketing objectives. The ultimate goal is to design and deliver an integrated marketing communications program in which all of the firm's promotional tools work together to deliver a consistent and compelling message to target customers. Once again, a solid understanding of the target segment's needs, choice criteria, and media viewing and reading habits is essential for making such decisions.

#### **2.2.3. Relation Between 4Cs and 4Ps**

When we are performing a marketing analysis, we should always be asking the same key questions:

- What are the major problems, opportunities, and threats facing the company?
- What's your strategy to address these issues?
- How much money will you need to make to make this strategy profitable?
- Why did you choose this strategy?
- How will you execute this strategy? What choices do you recommend for the marketing mix and tactics?

The 4 Cs and 4 Ps will help us organize these questions and are a great way to begin analyzing a situation. The 4 Cs should be used when performing a market assessment and background evaluation of the situation at hand. The 4 Ps should be used when you're ready to recommend a plan of action and create marketing mix specifics.

Once we have analyzed the 4Cs and identified a target customer segment, the marketing task becomes of designing an offering that will provide the firm with a unique position within that target market. The proposal should meet the potential customers wants and preference and establish a sustainable advantage over competitors.

Many companies today have a customer focus (or customer orientation). This implies that the company focuses its activities and products on consumer demands. A formal approach to this customer-focused marketing is known as SIVA (Solution, Information, Value, Access). This system is basically the four Ps renamed and reworded to provide a customer focus. The SIVA Model in figure 2.2. provides a demand/customer centric version alternative to the well-known 4Ps supply side model (product, price, place, promotion) of marketing management.

Product → Solution

Promotion → Information



**Figure 2.2. The SIVA Model**

The four elements of the SIVA model are:

1. **Solution:** How appropriate is the solution to the customer's problem/need ?
2. **Information:** Does the customer know about the solution? If so, how and from whom do they know enough to let them make a buying decision ?
3. **Value:** Does the customer know the value of the transaction, what it will cost, what are the benefits, what might they have to sacrifice, what will be their reward ?
4. **Access:** Where can the customer find the solution? How easily/locally/remotely can they buy it and take delivery ?

#### **2.4. Capital Budgeting**

In investment decision making, opportunity cost plays important role. Opportunity cost is earnings or cost-saving that sacrificed as a consequence of the of certain alternative. For example in old engine replacement with new machine, price sells old machine is must reckoned in consider investment at new machine.

In inveterate accounting principle, capital interest expenses by it self may not recorded as expense. In investment decision making, cost of capital by it self exactly must recorded.

Cost analysis in investment decision is more emphasized at cash stream, because when cash receiving in investment had time value of money. One rupiah that is being accepted now will more worth compared to one rupiah that accepted in the future. In

consequence,, though for calculation of company profit, expense is reckoned base accrual principle, nevertheless in calculation of investment election that reckon time value of money, expense that reckoned is cash expense.

#### 2.4.1. Criteria of Investment Assessment

In election of investment proposal, management needs accounting information as one of elementary important to take choice investment. Accounting information is packed into a decision model that have the shape of criterion of investment assessment to enable management selects best investment among available investment alternatives.

There are some method to decide whether we need or not an investment or to select many investment alternative.

- Pay back Period
- Discounted Payback Period
- Net Present value (NPV)
- Internal Rate of Return (IRR)

#### 2.4.2. Pay back Method

In this method prescriptive factor acceptance or deduction an investment proposal is duration required just for closes return investment. In consequence,, with this method every investment proposal assessed base what/whether over a particular period desired by management , cash amount enters or cash thrift that obtained/got from investment can close investment planned.

$$\text{Pay back period} = \frac{\text{Investment}}{\text{Cash enters clean}} \quad (2-1)$$

**Weakness pay back method:**

1. This Method does not calculate time value of money.
2. This Method does not show next earnings after fundamental investment back again.

**Strength of pay back method:**

1. For big risk of investment and difficult predicted, then this method can know the period of time for investment return.
2. This Method applicable to assesses two investments that have rate of return and risk in common, so it's can be selected investment that its return duration quickest/fastest.
3. This Method is simplest tool for assessment of investment proposal

**2.4.3. Discounted Payback Period**

Discounted Payback Period is a method in determined time that will to repay investment that has been conducted will pass by current enters the future that already discounted. Every cash flow discounted back to beginning a period of first investment time conducted base a percentage that express concept of time value of money and uncertainty of cash flow in the future. This Percentage is the cost of capital from company itself. Bigger of uncertainty of the future cash flow then ever greater value of Capital. Similar to analyze payback period, this method also of a kind analysis about measurement break-even an investment.

**2.4.4. Net Present Value Method**

An investment's net present value (NPV) is the sum of the present values of the cash inflows generated by the investment, minus the present values of all cash outlays.

NPV from a project of is being determined by is counting/calculating present value from cash flow that obtained from operation by using advantage level that desired and then lessen it with initial net cash expenditure .

$$\text{NPV} = \text{present value from operation cash flow} - \text{initial net cash expenditure}$$

$$\text{NPV} = -I_0 + \sum \frac{CF_t}{(1+r)^t}$$

$I_0$  = investment value/initial outlays  
 $CF_t$  = cash flow at the end of period t  
 $r$  = discount rate  
 $t$  = project age.

(2-2)

If NPV from a project of positive, this condition means the present value of cash inflows exceeds the present value of cash outflows, and the investment is therefore attractive.

If NPV from a project of negative, this condition means the present value of cash inflows lesser than the present value of cash outflows,

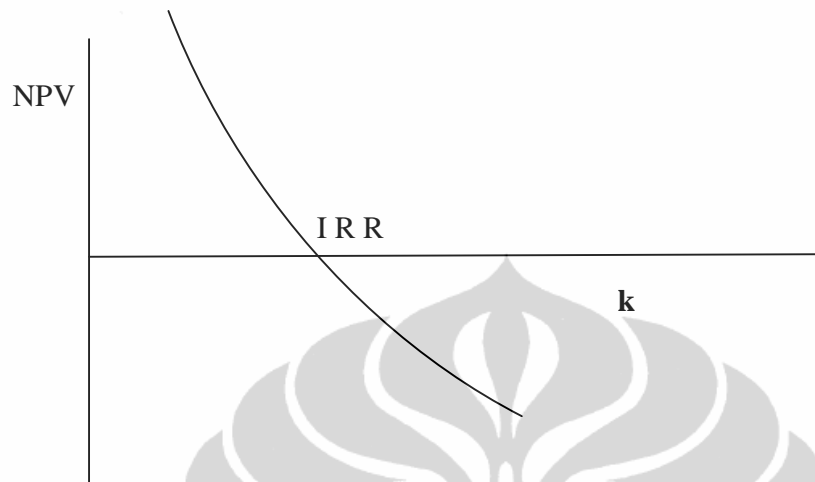
If NPV from a project of zero, this condition means the investment that will conducted does not change the value of the company.

#### 2.4.5. Internal Rate of Return (IRR)

The internal of Return is the rate of return earned on money committed to a capital investment and it is analogous to interest rates generally quoted in the financial marketplace. The effective annual interest rates that a bank promises on its savings accounts is the internal rate of return, and the annual percentage rate on loan (APR) is similar to the internal rate of return.

The internal rate of return is formally defined as the discount rate that results in a net present value of zero. A higher discount rate results in a smaller net present value for a conventional investment. This relationship is illustrated in figure 2.2. The internal rate of return is the discount rate at the point where the net present value

profile line crosses the horizontal axis- the point at which the net present value is zero.



( Source : Seitz & Neil 53)

**Figure 2.3. Net Present Value Profile**

IRR can be formulated as :

$$NPV = \sum_{t=0}^n \frac{CF_t}{(1 + IRR)^t} - IO = 0 \quad (2-3)$$

Where :  
 CF<sub>t</sub> = Cash flow at the end of period t  
 IRR = Discount Rate  
 IO = Initial Outlay

If, IRR > Cost of Capital, shows investment that will be done can result higher return than what we expected before.

If  $IRR < \text{cost of capital}$ , shows investment that will be done can result smaller return than what we expected before

If  $IRR = \text{Cost of Capital}$  shows investment that will be done can result return same as what we expected.

#### 2.4.6. Weighted Average Cost of Capital (WACC)

Capital Cost analysis is an important analyzer in project financing. There are 3 important things why we need to know capital cost, as follows :

1. To maximize value of the firm, all types of costs in running business included cost of capital, must be done at minimum cost.
2. Decision in cost of capital require cost of capital estimation
3. Some other management decisions that require information about cost of capital.

Firms that use discounted cash flow techniques, such as internal rate of return and net present value methods, tend to use single cost of capital. But using a single cost of capital for all projects can be hazardous. Firms may also make adjustment in the cost of capital for factors other than the type of project. For example, firms investing in project in foreign countries will sometimes make an adjustment for the additional risk of the foreign project, such as exchange rate risk, inflation risk, and political risk.

The cost of capital is generally based on an assessment of the firm's overall cost of capital. The firm first evaluates the cost of each source of capital – debt, preferred stock, and common equity. Then each cost is weighted by the portion of each source to be raised. This average is referred to as the **weighted average cost of capital (WACC)**.



WACC is calculated by multiplying the cost of each capital component by its proportional weight and then summing:

$$\text{WACC} = \frac{E}{V} \times Re + \frac{D}{V} \times Rd \times (1-Tc)$$

Where:

Re = cost of equity

Rd = cost of debt

E = market value of the firm's equity

D = market value of the firm's debt

V = E + D

E/V = percentage of financing that is equity

D/V = percentage of financing that is debt

Tc = corporate tax rate

#### 2.4.7. Real Options

The process of evaluating the desirability of long-term investment proposals is referred to as “capital budgeting.” Making optimum capital budgeting decisions (e.g., whether to accept or reject a proposed project), often requires recognizing and correctly accounting for flexibilities associated with the project. Such flexibilities are more formally termed *real options*. From a valuation standpoint, these options are valuable because they allow decision makers to react to favorable or unfavorable new situations by dynamically adjusting the capital budgeting decision process. Unfortunately, the value of real options is not explicitly considered in conventional procedures (such as discounted cash flow (DCF) models) used to evaluate long-term investment proposals. In some sense, therefore, real options can be viewed as an extension of DCF that incorporates a simple model of strategic learning.

Real Options is opportunities that are embedded in capital projects that enable managers to alter their cash flows and risk in a way that affects project acceptability (NPV). Also called *Strategic Options*.

#### Major Types of Real Options

- **Abandonment Option**  
This option is to abandon or terminate prior to end of planned life.
- **Flexibility Option**  
This option is to adopt a flexible approach in firm's operations, like production.
- **Growth Option**  
This option is to develop follow-on projects, expand markets, plant, operations and so on.
- **Timing Option**  
This option is to determine when various actions are taken.

Example:

- ❑ Mr. Willig, an entrepreneur, want build ice hotel, and estimated the annual cash flow to be \$ 2 million, based on initial investment of \$12 million. He felt than 20% was appropriate discount rate.
- ❑ From this case, we get NPV :  $-\$12,000,000 + \$2,000,000/0.20 = -\$2 \text{ million}$
- ❑ Most entrepreneur would reject the project, but real option help us to analyze it. There was 50% probability that annual cash flow will be \$3 million and a 50% will be \$ 1 million. The NPV calculation are here :
  - Optimistic forecast** :  $-\$12 \text{ million} + \$3 \text{ million}/0.20 = \$3 \text{ million}$
  - Pessimistic forecast** :  $-\$12 \text{ million} + \$1 \text{ million}/0.20 = -\$7 \text{ million}$
  - Average of NPV :  $50\% \times \$3 \text{ million} + 50\% \times (-\$7 \text{ million}) = -\$2 \text{ million}$
- ❑ However, he has the **OPTION to EXPAND by dynamically adjustment** turning out the optimistic forecast into 10 locations, so the true NPV would be :
  - 50% X \$3 million X 10 + 50% X (-\$7 million) = \$ 11.5 million**
- ❑ Conclusion, Mr. Willig decided that option to expand to get the true NPV \$11.5 million.

The biggest benefit of considering real options in the capital budgeting process is that they help decision makers reach optimal investment decisions. In this regard, real options complement or extend, not replace, traditional DCF decision models. Some embedded real options may lead to completely different investment decisions compared to those based solely on a traditional DCF analysis.

Put another way, a less attractive investment proposal may be worth significantly more once we recognize its hidden treasures—investment flexibility based on the existence

*of real options.*

In principle, because they can help optimize the capital budgeting process, real options should always be considered when making long-term investment decisions. Once managers grasp the concepts and are familiar with the basic framework for valuing projects embedded with real options, we would expect practice to change to the point where such options are routinely considered in the analysis of capital budgeting projects.

Not long ago, DCF models were new to many managers who typically relied more on simple decision models, such as payback or accounting rate of return (ARR), for making capital budgeting decisions. Today, NPV has become a common financial management tool. Because of their role as management advisors, management accountants now need to become knowledgeable about what real options are and how they can extend DCF models in a meaningful way.

Real options have a flipside, too. The major cost of incorporating real options is that the decision process can quickly become quite complex. We assumed that the only factor that affected the choice of vehicles was the passage of a new energy bill within one year. Other sources of risk can be associated with this investment decision. For instance, we might consider possible fluctuations in the price of gas or innovations in the automobile industry. The more factors we consider, the more complex the analysis becomes. When we attempt to incorporate more factors into the capital budgeting valuation framework, the more “noise” we introduce, making the results of our analysis potentially less accurate.

Second, incorporating real options into the analysis typically requires an array of probability estimates, one for each possible event, outcome, or scenario. For example, we assumed a 40% probability that the proposed energy bill would pass. In practical terms, this assessment may turn out to be the largest source of uncertainty.

Third, a typical capital investment project may have many embedded real options simultaneously, and it may be impractical to consider all of them. Nevertheless,

real-life decisions are inherently complex; these complexities do not go away simply because we choose to ignore them in the decision models we use. Put another way, complexity of the situation only makes real options analysis a bit less reliable.

Now that we have presented an analysis of costs and benefits, we predict that real options analysis will become one of the common tools managers and accounting professionals use to evaluate long-term investment projects. Thus, management accountants need to learn as much as they can about real options so they can use them in their decision making.

## **2.5. Sensitivity Analysis**

Risk is deviation between return expected and return happened. The first questions that arise in discussing the riskness of an investment are often “What can go wrong?” and “What are the critical variables? Both of this questions can be answered through sensitivity analysis. Sensitivity analysis is the computation of present value or other profitability measures for multiple values of at least one variable that will effect the investment. Suppose, a capital investment is affected by sales volume and salvage value. Net present value would be computed for numerous combinations of sales volume and salvage value.

Risk Analysis consist of 3 types that is :

### **1. Risk in company**

This Risk in company is total risk from portfolio of company [of] plant asset entire. The interested parties to risk this is the manager, tax creditor and banking.

## 2. Market Risk

Market Risk depicts company risk in capital market scope. And the party that very have interest to risk this is the stockholder

## 3. Project Risk

Project Risk is total risk from project if project are operated. This Risk gives uncertainty picture were that evaluation and to analyze influence from each variable when other variable fixed.

Some people believe that analysis of NPV is technique capital Budgeting that excitement. At its fact, because approach NPV uses cash flow before profit, use all cash flow, and discounted cash flow properly and quickly, then very difficult to find theoretical mistake at technique referred. Nevertheless cash flow that projected at proposal capital budgeting is always seen draw, so decision to run project are referred will be quick taken. Nevertheless, cash flow that has been projected often not walk at its practices, and company ends at bankruptcy.

In order to company gets technique NPV that have the potency then needed approach of sensitivity analysis. Where this approach of sensitivity analysis explains how sensitive calculation change Net Present Value that constituted by assumptions.