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Capital Investment Program

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BY

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CHAPTER I

INTRODUCTION

There are many schools of thought regarding Capital Investment Programs. However, regardless of the method or methods employed, the goals and final objectives of management teams are the same. The Capital Investment decision is one of the most important financial conclusions an executive can make. This decision affects all aspects of a business, including production, marketing, financial, etc. The responsibility of a Capital Investment Program is vast, considering the impact on operations and the period of time it covers. Some major points that should be considered are the long-term effect, timing, fund raising, and the ability to compete.

The executive is required to make a commitment into the future due to the long period of time the Capital Investment covers. Of course, an investment into the future is based on expected future sales. Therefore, a long-term sales forecast is needed and must be accurate. A poor estimate will result in a serious consequence of either overinvestment or underinvestment. If a firm has not spent enough on fixed assets, it will lose a portion of its market share. If the firm has invested too much on fixed assets, it will incur unnecessary expense.

Another point of concern is the proper timing of assets. Properly forecasting the future demands that a firm's product is essential for proper timing of a Capital Investment. Many firms enter markets with "me too" products which, many times, follow the peak of the demand for the product. The result is a poor return on the investment.

Most Capital Investments require substantial expenditure. This necessitates the planning and arranging of financing many years in advance of the time the funds are needed for the investment.

The combination of all these factors will enable the firm to compete. A properly-laid, long-term plan for Capital Investment, based on a sales forecast of future investments, will enable the firm to earn an acceptable return on its investment.[1]

In this paper, I will review the major aspects of a Capital Investment Program, including capital budgeting, corporate goals or criteria, approval systems, and post evaluations. Another important aspect which will be reviewed is the measurement of an investment on a continuous basis through a Performance Reporting System. The Capital Investment and Performance Reporting Systems insure the future prosperity of the company.

The establishment of the correct criteria and followup by management through Post Evaluations and a Performance

Reporting System will return the benefits thereof to the stockholders. After all, the primary responsibility of management is to improve the return on the Shareholders' Equity and the Return on Assets. Of course, this can be achieved by earnings growth on assets presently employed or through the investment in new assets. To insure earnings growth, financial policies must be established and enforced based on the current and projected economic conditions.

In our present economy, with high interest rates and tight money, a Capital Investment must be carefully reviewed and justified. Inflation in the United States and other economies continues to run at a rapid rate and the prospect for a significant reduction has diminished. Management has found no magic remedies to deal with inflation. Most companies have found that it is best countered by better management. This includes the need for better and faster information which improves the quality of profits resulting in improved return on the assets employed. As to future investments, companies are placing more emphasis on proven products and markets. Some companies have had to postpone or abandon Capital Projects because of the high money cost, less credit availability, weakened balance sheets, or substantially-increased cost of the equipment needed.

In assessing investment during these times of inflation, management's attention must be directed toward realistic extimates of cash requirements, working capital levels, and the

replacement cost of fixed assets. Some companies have had to eliminate the "opportunity" investment and have had to stick to needed replacements or expanding of present capacities.

Capital Investment is long-term planning for making and financing proposed capital outlays. They are large, permanent commitments that influence long-term flexibility and earning power. The Capital Investment decision is among the most difficult, primarily because the future to be visualized is distant and difficult to predict.

A Capital Budget is the basis for a sound Capital Investment Program. In Chapter II, I will discuss the Capital Budgeting Process.

CHAPTER II

CAPITAL BUDGET

A capital budgeting decision involves a current investment from which benefits are expected to be received in the future.

Capital budgeting involves the generation of investment proposals, estimated cash flows from the proposals, evaulation of the proposals and the selection of projects based on established criteria. Projects can usually be classified under one of the following categories:

1. New Products
2. Capacity Increase
3. Cost Reduction
4. Replacement
5. Research and Development
6. Other

The last category would include safety, pilot plant, governmental regulations, etc.

Projects are screened at multiple levels by use of a delegation of authority. The larger the amount of capital required, the higher the level of approval is required. This topic is discussed in Chapter IV. The most important factor is that the same criteria be used throughout the entire corporation.

Although Return on Assets and Return on Equity are important ratios to a company, the cash flows from a project should be considered of prime importance when preparing a Capital Budget. Also, we must remember that the results obtained are only as good as the accuracy of our estimates. Cash flows are of prime importance, for cash invested now must produce greater cash returns in the future. Normally, the cash flows are related to the company's cost of capital. This will be discussed in a later chapter.

Project selections are normally initiated at the division level. In most large corporations, a central engineering staff is responsible for development of project cost and technology. Central engineering involvment occurs after the division vice president approves the project. In addition to cost and technology development, division or group accounting personnel are responsible for supplying the financial information and the resulting returns. The financial returns required, if any, depend on the project classification.

A project under Categories 1 and 2 would require an accounting rate of return and an internal rate of return. Category 3 projects would require a payback calculation. Projects under Categories 4 through 6 would not have a return in most cases. These methods of evaluation will be discussed in more detail in a later chapter. It should be made clear that, in reality, at this point, the returns and payback, as well as, the estimated cost of the project are only preliminary

estimates. When the project is submitted for final approval, final financial statements and costs will be included.

Since each division or group prepares its own list of capital requirements, a central or corporate function normally consolidates the request to form a Capital Budget. This function can be performed by the engineering group or the financial group. When the central location receives division or group requests, at that point, the requests are considered to be want lists. Naturally, each division wants to obtain as much capital support as possible.

The first pass at consolidation of the Capital Budget is to include all requests from a division. The consolidation should reveal the following information:

1. Timing of cash needed for investments
2. Cash flows from investments
3. Incremental return on additional assets employed for Financially-Justified Projects
4. Capital ratio of Financially-Justified to Nonfinancially-Justified Projects
5. Projects should be categorized into Mandatory and Discretionary Projects.

Once the information is obtained, several decisions can be made. First, a review of cash requirements and cash inflows can determine if a capital rationing program is needed or if and how financing and short-term investment should be

handled. A review of the incremental return on additional assets and the ratio of Financially-Justified versus Nonfinancially-Justified Projects determines if the corporate objective will be met for the capital budget and the long-term objectives of the company. The mechanics of these relationships will be discussed in more detail in a later chapter. Classification of projects as Mandatory or Discretionary may be useful if a capital rationing program is employed. Capital rationing occurs when there is a budget cut or constraint on the amount of funds that can be invested during a Capital Budget cycle, usually one year. Constraints are found in many companies, particularly in those which have a policy of financing all capital expenditures internally. Under capital rationing, a company will attempt to select the combination of investment proposals that will provide the greatest profitability.

An example of a rationing program follows:

PROJECT	RETURN ON ASSETS	INITIAL OUTLAY
A	27.5%	$650,000
B	26.0%	500,000
C	23.5%	100,000
D	18.0%	250,000
E	17.9%	400,000
F	17.0%	150,000
G	15.0%	300,000

Assume that a company has a budget ceiling of $1,500,000 for the current year and the above projects were submitted by the divisions. In this example, we are assuming that all projects submitted have a ROA; therefore, they are ranked in the

order of the highest return first. Based on our capital constraint, we select projects in the descending order of profitability until the budget is exhausted. In this example, we would select down through Project D, because the initial cash outlay at that point equals $1,500,000. The critical aspect of the capital-rationing constraint in this illustration is that capital expenditures during this period are limited by the budget cuting, regardless of the number of attractive investment opportunities. Realistically, a portion of the Capital Budget would be used for Mandatory Projects and the remainder would be rationed for Discretionary Projects.[2]

Once the budget has been reviewed, appropriate changes can be made, depending on the consolidated outcome and the objectives and constraints under which the company must operate. However, once the budget is approved, it should be used as a control device throughout the year. Of course, the budget must be flexible due to changes which occur throughout the year, but the overall Capital Budget funds assigned to each division should not be exceeded without proper approval.

In the following chapters, I will discuss in more detail the Capital Investment Program beyond this initial Capital Budget.

CHAPTER III

CORPORATE GOALS

Like any program, to be successful, guidelines and/or goals must be established. In the case of capital investments, a set of criteria must be established and used to measure results. The criteria used by most large corporations includes: Return on Gross Assets, Payback, and Discounted Cash Flow.

The Return on Gross Assets and Payback are used to measure the accounting return and the Discounted Cash Flow Method is used to measure the cash flow returned from a project. In this chapter, I will discuss the development and use of these various methods. A survey was made of various St. Louis companies to confirm and establish the most common methods mentioned above. Attachment I recaps the results of the survey.

The survey clearly identifies the Return on Assets (ROA), Payback (PB), and the Discounted Cash Flow (DCF), which uses the cost of capital rate, as the primary evaluation methods.

The first method, ROA, represents the ratio of Net Income to Total Gross Assets. This ratio measures the return on total investment in the project. Following are the advantages and disadvantages of this method.

ADVANTAGES

-- This measurement evaluates the capital investment on a stand-alone basis.

-- It is relatively easy to prepare and understand.

DISADVANTAGES

-- Does not appropriately consider cash flow from the investment or the timing thereof.

-- Does not recognize the time value of money.

The Payback Method is calculated by determining the number of years it will take the firm to recover its original investment from the cash flows before taxes and depreciation. The advantages and disadvantages of this method are as follows:[3]

ADVANTAGES

-- Represents little risk when payback is restricted to a minimal number of years.

-- Relatively easy to calculate and understand.

-- Considers cash flow from investment.

DISADVANTAGES

-- Could eliminate projects which mature in later years.

-- Does not recognize time value of money.

-- Does not consider cash flow over the life of a project.

In recent years, there has been a significant increase in the use of the Discounted Cash Flow Methods. These methods include the Internal Rate of Return (IRR), New Present Value (NPV), and Discounted Payback (DP). As indicated earlier, the DCF Methods require quantification of the incremental cash flows associated with an investment and identification of the minimum acceptable rate of return (usually equated to the company's cost of capital). If higher than the cost of capital, the return from the investment should cover the cost of funding and benefit the shareholders' investment. If less than the cost of capital, investment in the project would have the opposite results. Advantages and disadvantages of the DCF Methods are as follows:[4]

ADVANTAGES

-- Recognizes the time value of money, which takes into account that a dollar received today is worth more than a dollar received in the future. Today's dollar can be invested to earn a return during the intervening interval.
-- Recognizes cash flow over the life of the investment. Thus, the return is less influenced by accounting or tax considerations regarding capitalizing and expensing costs.

DISADVANTAGES

-- Is not easily understood and is relatively difficult to calculate.
-- This method can accommodate the evaluation of projects with different lives. But, there is an implicit

assumption that funds released from projects will be reinvested at the minimum expected return.

When evaluating a capital investment involving an acquisition, additional evaluation techniques must be applied. Currently, the acquisition market can be classified as a seller's market, with substantial premium offers and an aggressive acquisition posture on the part of large, long-established U. S. companies. Foreign companies have also become increasingly active buyers of U. S. companies. In view of this environment, it is essential that acquisition investment criteria be defined.

Like any capital investment, the first step in an acquisition program begins with a review of corporate objectives, strategies, strengths, weaknesses, and a review of the company's economic and technological environment. This type of review should produce a set of corporate objectives and goals for acquisitions. Additionally, an acquisition review should answer the following questions:[5]

-- What is the maximum price that should be paid?

-- What are the principal areas of risk?

-- What are the earnings, cash flow, and balance sheet implications of the acquisition?

-- What is the best way to finance the acquisition?

To answer these questions and many others, a preestablished plan of review should be developed, which should include:

-- The Acquisition Hurdle Rate

-- The Business Plan

-- A History of the Market

-- The Price/Volume Relationship

-- Inflation Effects

-- Risks

-- Opportunities

-- Financial Statements

-- Organized and objective methods for valuing acquisitions

-- The Purchase Price Impact on acquisition candidates

-- The Acquisition Impact on company ratios

-- The Impact on EPS

Once these items have been developed and reviewed, the acquisition can be properly evaluated.

When evaluating a capital investment or an acquisition, the cost of capital of the company should be compared to the expected future cash flows from the project.

Generally, cost of capital is calculated on the weighted-average basis of debt and equity. An example formula for

for calculating cost of debt and equity follows:

$$\text{Cost of Debt} = \frac{\text{Interest Expense}}{\text{Debt}} \times (1 - \text{Tax Rate})$$

$$\text{Cost of Equity} = \frac{\text{Per Share Dividend}}{\text{Per Share Stock Price}} + \text{Dividend Growth Rate}$$

The costs of debt and equity funds would be weighted based on the ratio of debt and equity to overall capitalization. For example:

20% Debt Financing X Cost of Debt = Weighted Cost of Debt

80% Equity Financing X Cost of Equity = Weighted Cost of Equity

Weighted Cost of Capital

This weighted cost of capital should then be used to measure the potential return of the investment. The return from the investment should cover the cost of funds which will, in turn, benefit the shareholders. If the future cash flows exceed the Cost of Capital Hurdle Rate, the project should be accepted.[6]

Once we have reviewed and chosen the evaluation methods and established the Hurdle Rates, a total "Capital Plan" can be developed. Based on the information available and the survey conducted, the accounting returns (ROA and DP) and a DCF Hurdle Rate should be established and used. As stated previously, the DCF should be compared to the cost of capital. Completely independent of this measure, the ROA and PB Hurdle Rates should be established to insure that the Corporate Return on Assets goal is met. As discussed in Chapter II,

Financially-Justified Projects must not only provide a return for the investment associated with that project, but, also, they must achieve a high-enough return to pay for Nonfinancially-Justified Projects. Therefore, a Financially-to-Nonfinancially-Justified ratio must be established to insure an overall return.

An illustration of an overall Capital Plan follows:

1. Financially-to-Nonfinancially-Justified of 2.5:1.0
2. Consolidated ROA Goal of 10%
3. Financially-Justified Hurdle Rate of 15%
4. Nonfinancially-Justified Return of 0%

Example:

Financially-Justified =	2.5	X	ROA of	15%	=	.375
Nonfinancially-Justified =	1.0	X	ROA of	0%	=	.000
	3.5					.375

.375 In Income ÷ 3.5 In Capital = 10.7%

This example states that, if, out of every 3.5 projects, 2.5 are Financially-Justified and achieve a 15% return, the consolidated ROA will be 10.7%.

In summarizing this chapter, the main point to be emphasized is the establishment of guidelines and criteria for capital investments.

The following is an overview of a capital investment program:

1. Evaluation Methods:

A. Financially-Justified Projects

1) Accounting Return on Gross Assets and Payback are the primary methods for evaluating the accounting return of the project.

a) New products and capacity increase projects will be evaluated by the ROA Hurdle Rate.

b) Cost-reduction projects will be evaluated by the PB Hurdle Rate.

2) Discounted Cash Flow Hurdle Rate will be measured against the projects' cash flows.

B. Nonfinancially-Justified Projects

These projects will be assumed to have a zero return. They will be evaluated on the basis of business need, safety, government regulations, etc.

2. Capital Plan:

Must establish a Financially-Justified to Nonfinancially-Justified Ratio that will achieve the consolidated company goal.

Once the corporate goals and objectives have been established, a Capital Project Approval System must be installed to insure adherence. The Capital Project Approval System will be discussed in Chapter IV.

INVESTMENT CRITERIA USED BY VARIOUS ST. LOUIS COMPANIES

CHROMALLOY AMERICA

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Incremental ROA	20%
	Discounted Cash Flow	20%
	Present Value Payback	5 years
Acquisitions	Net Present Value	20%

PFIZER

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Fully loaded ROA	15%
Acquisitions	Net Present Value	Prime Rate

PET, INC.

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Discounted Cash Flow	25% pre-tax
Acquisitions	Discounted Cash Flow	25%
	Return on Invested Capital-Fully Loaded	-

EMERSON ELECTRIC

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Incremental ROA	20%
	Discounted Cash Flow	20%
Acquisitions	Discounted Cash Flow	15%

ANHEUSER BUSCH

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Discounted Cash Flow	Cost of Capital
	Net Present Value	" "
Acquisitions	Rappaport Approach(NPV)	" "

RALSON PURINA

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Incremental ROA	None Established
Acquisitions	Payback	"
	Discounted Cash Flow	"

MONSANTO

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Net Present Value	Not Stated
Acquisitions	Incremental ROA	Not Stated

MALLINCKRODT

TYPE	EVALUATION METHODS	HURDLE RATE
Capital Projects	Fully Loaded ROA	15.0%
	Incremental ROA	15.0%
	Payback	3 years
	Discounted Cash Flow	None Established
Acquisitions	Various	-----

CHAPTER IV

CAPITAL PROJECTS APPROVAL SYSTEM

The review and approval of Capital Projects is a simple subject, but is one of great importance. After all, we must insure that projects submitted are meeting the guidelines and criteria that have been established. The first step in this process is to design a universal form for project approval (Project Application Form).

The Project Application Form will contain all pertinent information necessary to quickly determine the project type, cost, justification, return (if any), scope of project, and necessary approvals. Additionally, the Application Form will serve as a routing mechanism to insure that all appropriate approvals are obtained. Detailed information concerning all aspects of the project should be attached.

Information that should be included in the narrative of a project is as follows:

1. A project title and a brief description that identifies the project, what it does, its size and capacity, approximate start and completion dates, and why it is necessary.
2. An analysis of any critical issues or risks that affect the probability of success of the project. These

might include the state of the art presently known or used of competitors or other oganizations' technology; competitive action or reaction; raw material availability; water and energy needs; the environment; actual and anticipated governmental actions; and any other significant decision points that may affect the probability of success.

3. Justification of the project should be presented depending on project classification.

A. If the project is classified as one requiring an Accounting Return on Assets, the following should be calculated.

-- Incremental Sales for the first full year of operation

-- Incremental Gross Margin for the first full year of operation

-- Incremental After-Tax Profit for the first full year of operation

-- Incremental Return on Assets

-- Total Return on Assets

B. Justification for projects requiring a Payback calculation should include:

-- Average, annual before-tax cost savings

-- Years to pay back project cost via hard dollar cost savings

C. If a project is Nonfinancially-Justified, explain why it is required and the consequences of not undertaking it.

4. Estimate cost of the project, including both capital and expense requirements.

Once all the appropriate data has been collected and presented as part of the Project Application, an independent review should be performed.

The review function should be performed by an independent department. This will usually be a department in the corporate headquarters. The extent of the review will depend on the materiality of the Capital Project, but should include:

-- Verification of sales, cost of goods sold, division expenses and other cost, and the resulting income.

-- Review market data for determination of product potential.

-- Review competitors and competitive products

-- Review capital investment requirements, including inventory and accounts receivable.

-- Review and investigate alternatives to the Capital Project

-- Review for proper approval from the operating division and determine the final approval needed (see next section).

Once the review is complete, a recommendation should be made as to approval or nonapproval. In the following section, I will discuss the control of capital investment through the

use of delegation of authority.

The delegation of authority establishes the level of approval needed for a capital investment to be approved.

In most organizations, levels are established which allow approval by company management personnel whose levels of responsibility match their levels of authority. For example, an Operating General Manager may be given an approval level up to $50,000. This means that capital investment requests above $50,000 must be approved by a higher level of authority. This process of requiring higher levels of approval will advance through the organization until approvals are required by the Board of Directors.

The purpose of the delegation of authority is to insure that capital expenditures receive the review the amount of funds being requested deserve. In the next section, a system of capital investment control will be discussed.

A plan should be established to monitor capital expenditures. The purpose, of course, is to insure that expenditures on a consolidated basis are meeting the corporate goals. As stated before, with the continued high prospects of inflation rates and the increasing cost of money, a control plan is critical. A control plan will 1) help select projects more carefully based on business necessity and potential economic return and 2) better control capital spending within the reasonable limits of the approved Capital Budget. Using this

approach, the Incremental Return on Investment should be utilized, where applicable, to control expenditures. The reason is the Incremental Return is the true measure that helps improve the overall Return on Assets. The thrust here is to help identify the components that make up the Incremental Return on Assets so that better control can be established.

To help monitor the investments, the following instructions and form could be used. (Attachment I)

Through the use of this form, which should be prepared at least quarterly, adjustments can be made to the capital investment criteria to help reach the overall goal.

The development and implementation of these controls within the Capital Project Approval System will insure that the corporate goals will be met, based on the assumption that planned results will be achieved. To insure that the goals will be met in the long term, Post Evaluations should be performed. I will discuss this topic in the next chapter.

INSTRUCTIONS

1. Major Projects (Projects in excess of $100,000)

Individually list each major project that the group intends to submit for authorization during the year, to include the following information:

A. Project Description.

B. Direct Investment

The capital amount to be requested for approval on each listed project.

C. Additional Support Investment

Any additional investment that is required as a result of a project (e.g., service unit facilities). Normal allocated investment for existing service units or corporate investment will not be included.

D. Cash and Receivables

Incremental cash and receivables needed to support the investment.

E. Inventories

Incremental inventories needed to support the investment.

F. Total Incremental Investment

The total additional investment needed to support the entire project (total of Items B. through E. above).

G. Average Five-Year Incremental Income

The average additional net income that will be generated from the investment over the first five years. Excludes allocated corporate staff expenses.

H. Incremental Return On Investment

Item G. divided by Item F. above.

I. Major Projects Subtotal

At this point, the incremental investment, income, and ROA for all major projects should be calculated.

2. Blanket Projects (To cover all investments of less than $5,000)

All blanket projects should be entered as one total which includes direct investment and, where applicable, additional support investment and working capital. Incremental income and incremental ROA for blanket projects will be zero.

INSTRUCTIONS

(Continued)

3. Minor Projects (Projects in excess of $5,000, but less than $100,000)

All minor projects should be entered as one total which includes all direct investment, additional support and working capital investment. In the absence of more definitive information, assume that 50% of the minor project total will earn an average incremental ROA.

4. Blanket and Minor Projects Subtotal

The blanket and minor project lines should be totaled and an incremental ROA should be calculated.

5. Total Projects

The subtotals of major projects and blanket and minor projects should be totaled. Total group incremental ROA should then be calculated and entered on the form.

INCREMENTAL RETURN ON ASSETS
($000'S)

GROUP _____

PROJECT DESCRIPTION	INCREMENTAL DIRECT INVEST.	INCREMENTAL ADD'L SUP. INVEST.	INCREMENTAL CASH & RECEIV.	INCREMENTAL INVEN.	TOTAL INCREMEN. INVEST.	AVG. 5-YEAR INCREMEN. INCOME	INCREMEN. R. O. A.
MAJOR PROJECTS:							
MAJOR PROJECTS SUB-TOTAL							
BLANKET PROJECTS						- 0 -	- 0 -
MINOR PROJECTS							
BLANKET & MINOR PROJECTS SUB-TOTAL							
TOTAL PROJECTS							

CHAPTER V

POST EVALUATIONS

Post Evaluations are of most importance in determining the performance of an individual Capital Project. When a project is submitted, certain criteria must be met for approval. The long-term success of a company is dependent upon investments achieving the planned results. To insure that the investments are meeting the planned results and corporate goals, periodic checks should be performed.

The timing and number of reviews will vary. Normally, one complete business cycle is required to perform a proper review. This period of time is usually one year. Therefore, at least one year should elapse after the startup of the capital investment. The sooner the evaluation, the sooner corrective action can be taken, if necessary, to help the Capital Project reach its estimated results.

Some companies perform one, three, and five-year evaluations, to insure the project is on track and remains there through the first five years. This approach may be necessary, especially if there is not a Performance Reporting System to track the overall performance of the operation. If a Capital Project is a stand-alone operating unit, the Performance Reporting System would more than suffice. But, if the Capital

Project is part of a total unit, a separate Post Evaluation would be of benefit.

The scope of the review should vary, depending on the original project. But, each review should include a description of the business, details of the original project, results achieved to date, and expected future results. Financial results should be presented in the same format as the original project, which may include Return on Assets, Payback, and, possibly, an Internal Rate of Return (Discounted Cash Flow) calculation.

The format and scope seem relatively simple on the surface. This may be true, but the collection of data may be difficult, depending on the accounting systems and the nature of the projects. Care should be taken to present comparable data, so that results can be measured.

As stated before, the results of the Post Evaluation are most important to the future of the company. Therefore, their timing, accuracy, and completeness are very important for evaluation of the results and the future action which will affect the project.

In the next chapter, I will discuss the mechanism of a Performance Reporting System. As mentioned above, a Performance Reporting System will help post evaluate a project when it is a stand-alone unit and is a valuable measurement tool.

CHAPTER VI

PERFORMANCE REPORTING SYSTEM

The establishment and implementation of a Performance Reporting System is essential to control and improvement of a company's performance. To accomplish this, current information is necessary; therefore, a monthly statement by division or business unit is necessary.

These statements should reflect income at two levels of measurement. Net Income as normally reported, within normal accounting conventions, will represent a measurement of the unit's economic performance. This level of measurement can be used as a comparison to other companies or industries in which the business unit participates. The other level of measurement will be at a division income level and will consist of revenue and expenses which are directly controlled or significantly influenced by each operating division manager. This level of measurement will result in a consistent unit of measure of each management team, for all business/operating divisions of the company.

The following summarize the philosophy/objectives of a Performance Reporting System.

1. The financial statements will measure, for the month and year to date, managerial and economic performance

against budget and prior year.

2. Managers will assume responsibility for the overall economic performance of their businesses.
3. Elements comprising the basis for managerial performance measurement will be substantially consistent, with respect to the manager's degree of control or influence exercised, throughout all businesses being reported upon.
4. Measurement bases will be oriented toward the income statement and assets and various returns thereon.[7]

   A. Managerial performance will be measured by:

      1) Income directly controlled or significantly influenced by actions of operating management.
      2) Gross assets directly controlled or significantly influenced by operating management.

   B. Economic performance will be measured at various levels characterized by the degree of control exercised by operating management.

      1) Additional levels of income statement performance measurement will include income contribution, operating profit, pretax income and net income.
      2) Total asset levels will be measured (direct, plus support asset balances).
      3) Returns on total assets employed will include:
         -- Pretax Income divided by total assets.
         -- Net Income divided by total assets.

5. Group administration and corporate staff division managers will continue to be directly measured against budget and prior year on specific performance statements.

6. Necessary assignment/allocation methods and associated percentages will be prepared based on the approved budget. Said methods and percents will remain unchanged for the year, unless revision is dictated by a material organization or policy or procedure change.

Summarized below are definitions of the key concepts and elements which comprise the multiple types and levels of performance measurement on the financial statements.

1. Managerial Performance Measurement:

   A. Division Income

      Consists of revenue and expense elements which are directly controlled or significantly influenced by each operating division manager. These elements are substantially consistent across all businesses/operating divisions of the company. They will also be considered controllable by business managers subordinate to division management, although some degree of allocation may be in order. Generally, these items include revenues and expenses which are normally displayed above income contribution. The following items are clarified, since they are

handled differently by many companies.

1) Central data processing cross charges for central/host computing equipment and processing costs and systems and programming support for "corporate/shared" systems will be excluded from division income. For purposes of this performance measurement system, central data processing expenses are not considered directly controllable nor significantly influenced by actions of operating management. All peripheral equipment, telecommunication equipment, and data transmission lines which are used by remote locations to interact with major corporate systems will be considered central data processing costs, if such costs are carried in the corporate central data processing budget and expense cross charge base.
2) Occupancy cross charges for the corporate center and group administration will be excluded.
3) Foreign currency translation gains and losses will be excluded on the theory that certain of of these elements (financing/exposure management, etc.) may not fall within the direct control of operating management.
4) Minority interest will be excluded because this is a condition of ownership and may not relate to the direct performance of the unit.

5) Computer equipment, software, and systems development and programming resources used directly by locations outside the corporate center for self-contained information and control systems will be presented as an expense above division income. For purposes of managerial performance measurement, these expenses are considered controllable or significantly influenced by operating management. This divisional statement line, entitled "Data Processing Direct", will include operating costs which are recorded directly on the books of the applicable business or division, plus cross charges for corporate systems development support that was requested by appropriate operating management.

B. Direct Assets

Consists of assets directly controllable or significantly influenced by appropriate operating management. These will include: a) cash and accounts receivable, b) inventories, c) direct property, plant, and equipment, d) construction in progress, and e) intangible assets. Amounts will come directly from the balance sheets of businesses which have stand-alone balance sheets. For other businesses, such balances will be reported according to assignment of assets from the accounts receivable

system, inventory level management program, property accounting and construction in progress (maintenance) systems and certain general ledger asset accounts. Group and division plant service center (support) investment will be assigned using formulae which correspond to the standard overhead transfer to inventory for such service center (support expenses. These assignments will be considered direct property to the divisions/ businesses which sell products manufactured at these locations. Service center investment which corresponds to non-inventoriable departmental expenses will not be reported as direct investment of any business unit. Investment in marketable securities under the direct control of the corporate treasury function will be considered temporary investments and, as such, will be reported on a corporate schedule. Securities carried on the books of a foreign affiliate will be reported as direct assets on the statement(s) for such foreign affiliate.

C. Return on Direct Assets (Division Income)

Results from division income divided by direct assets and is considered a measurement of the management performance of the business unit.

2. Economic Performance Measurement:

Several additional measures of economic performance for the income statement, assets employed, and the returns

thereon are as follow:

A. Income Contribution

Includes division income, plus other items that may not be directly influenced by operating management, but which provide substantial support of daily operations and/or required as a result of the business environment. Central data processing and occupancy cross charges, translation gains and losses, and minority interest will be presented between division income and income contribution.

B. Operating Profit

Provides full operating performance of each business and includes Income Contribution, plus expenses for services rendered by group administration and corporate staff functions. A variety of assignment/allocation methods will be used depending upon the indicators most clearly matching costs to services rendered.[8]

C. Pretax Income

Provides a before-tax measure of economic performance after assignment/allocation of nonoperating items.

D. Net Income

Provides an after-tax measure of economic performance using the planned and actual consolidated effective tax rate for all periods presented.

E. Total Assets Employed

Consists of direct assets (Item 1. B. above), plus allocated assets, which, for purposes of performance measurement, may be minimally influenced by operating management. These assets include corporate facilities and certain nondirect group and division plant support investments and will be assigned/allocated to business units using indicators which generally correspond to methods used to assign nondirect administration and corporate staff expenses.

F. Return on Gross Assets

1) Return on Assets (Pretax Income)

Comprises a measure of economic performance before application of budgeted and actual effective tax rates. This percent return results from dividing pretax income (Item 2. C. above) by total assets employed (Item 2. E. above.

2) Return on Assets (Net Income)

Is a measurement of after-tax economic performance and is the result of net income (Item 2. D. above) divided by total assets (Item 2. E. above).

This Performance Reporting System will enable management to control the company's results. To further explain and

clarify this system, attached is an example of a divisional statement format.

This statement gives the Return on Division Assets (RODA), Return on Pre-Tax Income (ROPTI) and Return on Net Income (RONI). Additionally, this format compares the monthly results to budget and prior year's amount. Also, year-to-date information is provided and compared to budget and prior year. The exact method of measurement will vary from company to company, but, normally, budget, prior year actual, and comparison to other divisions are used. That is why a division income measurement level is important for comparibility to other divisions. However, this format will give management flexibility to use one or all of the measure tools provided.

In the next chapter, I will utilize the criteria and tools developed in this paper to evaluate and establish criteria for a capital investment program of a St. Louis-based company.

PERFORMANCE REPORTING SYSTEM

XYZ CORPORATION

* FAVORABLE / UNFAVORABLE (-)
(MAY NOT FOOT DUE TO ROUNDING)

* D I V I S I O N A L   S T A T E M E N T S *

(DOLLARS IN THOUSANDS)

RUN DATE 10/24/80

---MONTH OF SEP 1980---			--------IMPROVEMENT *--------				--DESCRIPTION--	---1980 Y-T-D---		PRV YR	---------IMPROVEMENT *---------			
ACTUAL	BUDGET	PRV YR	----BUDGET----		----PRV YR----			ACTUAL	BUDGET	ACTUAL	----BUDGET----		----PRV YR----	
AMOUNT	AMOUNT	AMOUNT	AMT	%	AMT	%		AMOUNT	AMOUNT	AMOUNT	AMOUNT	%	AMOUNT	%
2,959	2,889	2,394	70	2.4	565	23.6	SLS-LESS CR ADJ	26,173	25,837	22,531	336	1.3	3,642	16.2
22	0	0	22	.0	22	.0	TRSF SALES	101	0	15	101	.0	86	573.3
22-	0	0	22-	.0	22-	.0	TSF COST OF SLS	101-	0	15-	101-	.0	86-	573.3-
2,959	2,889	2,394	70	2.4	565	23.6	GROSS REVENUE	26,173	25,837	22,531	336	1.3	3,642	16.2
22	21	16	1-	4.8-	6-	37.5-	DISCOUNTS	173	184	157	11	6.0	17-	10.8-
135	117	105	18-	15.4-	31-	29.5-	FREIGHT	1,172	1,044	976	128-	12.3-	196-	20.1-
157	138	121	19-	13.8-	37-	30.6-	REVENUE ADJS	1,345	1,228	1,133	117-	9.5-	213-	18.8-
2,802	2,751	2,273	51	1.9	528	23.2	NET SALES	24,828	24,609	21,398	219	.9	3,429	16.0
2,112	2,038	1,648	74-	3.6-	464-	28.2-	STD PROD COST	18,721	18,230	15,980	491-	2.7-	2,741-	17.2-
286	284	241	2-	.7-	46-	19.1-	PLANT OVERHEAD	2,469	2,532	2,219	63	2.5	250-	11.3-
285-	279-	217-	6	2.2	68	31.3	OVHD TRANSFER	2,452-	2,483-	2,136-	31-	1.2-	316	14.8
29-	5-	2	24	480.0	31	1550.0	VAR-DIRECT	96-	43-	20-	53	123.3	76	380.0
18	0	0	18-	.0	18-	.0	VAR-ALLOCATED	0	0	0	0	.0	0	.0
2,102	2,038	1,674	64-	3.1-	429-	25.6-	PRODUCT COST	18,642	18,236	16,043	406-	2.2-	2,599-	16.2-
700	713	599	13-	1.8-	99	16.5	NET MARGIN	6,186	6,373	5,355	187-	2.9-	830	15.5
25.0	25.9	26.4		.9-		1.4-	NET MARGIN %	24.9	25.9	25.0		1.0-		.1-
32	30	12	2-	6.7-	20-	166.7-	R & D	250	262	76	12	4.6	175-	230.3-
220	213	165	7-	3.3-	55-	33.3-	SELLING	1,783	1,904	1,635	121	6.4	148-	9.1-
99	94	79	5-	5.3-	19-	24.1-	DISTRIBUTION	838	846	776	8	.9	62-	8.0-
117	135	184	18	13.3	68	37.0	ADMINISTRATION	1,122	1,196	1,222	74	6.2	100	8.2
1	2	1	1	50.0	0	.0	AMORTIZATION	12	12	12	0	.0	0	.0
26	34	26	7	20.6	0	.0	D/P-DIRECT	256	279	258	23	8.2	2	.8
495	508	467	12	2.4	26-	5.6-	DIVISION EXP	4,261	4,499	3,979	238	5.3	283-	7.1-
17.7	18.5	20.5		.8		2.9	DIVSION EXP %	17.2	18.3	18.6		1.1		1.4
205	205	132	1-	.5-	73	55.3	DIV INCOME	1,925	1,874	1,376	51	2.7	547	39.8
7.3	7.5	5.8		.1-		1.5	DIV INCOME %	7.8	7.6	6.4		.1		1.3
26	34	26	7	20.6	0	.0	CENTRAL D/P CHG	256	279	258	23	8.2	2	.8
1	2	1	1	50.0	0	.0	TRANS GAIN/LOSS	12	12	12	0	.0	0	.0
1	2	1	1	50.0	0	.0	MINORITY INT	12	12	12	0	.0	0	.0
177	167	104	8	4.8	73	70.2	INC CONTRIB	1,645	1,571	1,094	74	4.7	549	50.2

PERFORMANCE REPORTING SYSTEM

XYZ CORPORATION

* FAVORABLE / UNFAVORABLE (-)
(MAY NOT FOOT DUE TO ROUNDING)

* DIVISIONAL STATEMENTS *

(DOLLARS IN THOUSANDS) RUN DATE 10/24/80

---MONTH OF SEP 1980--- ACTUAL AMOUNT	BUDGET AMOUNT	PRV YR AMOUNT	--------IMPROVEMENT * -------- ----BUDGET---- AMT	%	----PRV YR---- AMT	%	--DESCRIPTION--	---1980 Y-T-D--- ACTUAL AMOUNT	BUDGET AMOUNT	PRV YR ACTUAL AMOUNT	--------IMPROVEMENT * -------- ----BUDGET---- AMOUNT	%	----PRV YR---- AMOUNT	%
6.3	6.1	4.6		.0		.0	INC CONTRIB %	6.6	6.4	5.1		.0		.0
20	33	24	14	42.4	4	16.7	GROUP EXP ALLOC	215	271	160	56	20.7	55-	34.4-
99	82	83	17-	20.7-	16-	19.3-	CORP EXP ALLOC	744	711	658	32-	4.5-	85-	12.9-
58	52	3-	5	9.6	61	2033.3	OPER PROFIT	686	589	276	98	16.6	409	148.2
2.1	1.9	.1-		.2		2.2	OPER PROFIT %	2.8	2.4	1.3		.4		1.5
8-	5	6	13	260.0	13	216.7	INTEREST EXP	36	49	52	13	26.5	16	30.8
2	3	0	1	33.3	2-	.0	OTHER (INC) EXP	23	26	13	3	11.5	10-	76.9-
64	44	9-	19	43.2	72	800.0	PRETAX INCOME	627	514	211	114	22.2	415	198.7
2.3	1.6	.4-		.7		2.7	PRETAX INC %	2.5	2.1	1.0		.4		1.5
35	23	5-	11	47.8	39	780.0	NET INCOME	334	272	111	63	23.2	222	200.0
1.2	.8	.2-		.4		1.5	NET INCOME %	1.3	1.1	.5		.2		.8
							DIRECT ASSETS							
5,005	2,613	4,528	2,392	91.5	477	10.5	PROPERTY&INTANG	5,005	2,613	4,528	2,392	91.5	477	10.5
2,844	1,491	2,573	1,353	90.7	271	10.5	CASH & REC	2,844	1,491	2,573	1,353	90.7	271	10.5
4,907	2,571	4,440	2,336	90.9	467	10.5	INVENTORY	4,907	2,571	4,440	2,336	90.9	467	10.5
12,756	6,675	11,541	6,081	91.1	1,215	10.5	DIRECT ASSETS	12,756	6,675	11,541	6,081	91.1	1,215	10.5
859	4,141	777	3,282-	79.3-	82	10.6	ALLOC PROPERTY	859	4,141	777	3,282-	79.3-	82	10.6
13,615	10,816	12,318	2,799	25.9	1,297	10.5	TOTAL ASSETS	13,615	10,816	12,318	2,799	25.9	1,297	10.5
1.6	3.1	1.1		1.5		.5-	RODA	15.1	28.1	11.9		13.0		3.2-
.5	.4	.1-		.1-		.6-	ROPTI	4.6	4.8	1.7		.2		2.9-
.3	.2	.0		.1-		.3-	RONI	2.5	2.5	.9		.0		1.6-

CHAPTER VII

CASE STUDY

In previous chapters, I have discussed the various aspects of a capital investment program. In this chapter, I will review the financial statement of a major, St. Louis-based corporation. The corporation will be referred to as the XYZ Corporation to protect the confidentiality of the information used. The information gathered will be used to develop a Capital Investment Program.

The XYZ Corporation is engaged in the development, manufacture, distribution, and marketing of fine chemicals, drugs, and allied products. The Company has three major industry segments which are:

1. Health Care Products

   Drug chemicals, ethical and proprietary drugs, X-ray contrast media, radiopharmaceuticals, disposable medical devices, and laboratory chemicals and equipment

2. Specialty Chemical Products

   Industrial chemicals, catalysts and printing inks

3. Food, Flavor, and Fragrance Products

   Flavors, specialty bakery and food ingredients, and fragrances

Products of each of the business segments are manufactured and marketed in the United States and in foreign countries.

The Company's Return on Average Gross Assets (ROA) has steadily decreased from a high of 9.5% in 1976 to 8.8% in 1979. During that period, the two key ratios influencing ROA, asset turnover, and percent earned on Net Sales have generally declined, except for an improved asset turnover in 1978 and a higher Return on Net Sales in 1979. The improved profitability in 1979 resulted primarily from higher interest income and an improved Net Margin percentage.

Return on Average Shareholders' Investment increased from 15.1% in 1975 to 16.7% in 1976. In 1979, however, Return on Average Shareholders' Investment was 15.2%, reflecting a steady, downward trend from the percentage return in 1976. Income from total operations increased by 12.3% and 6.2% in 1977 and 1978, respectively, while Average Shareholders' Investment increased by 15.5% and 12.2%, respectively. Earnings from total operations in 1979 improved by 12.6% over the prior year, but the Return on Average Shareholders' Investment was below 1978 by 0.2%. This resulted principally from lower 1979 income relating to discontinued operations of a division which was sold and higher shareholders' investment (13.8%), which excludes the gain on sale of the division.

On an incremental basis (additional income divided by additional assets), from 1975 through 1979, ROA reached a high

in 1976 (13.3%), but was 7.9%, 4.9%, and 8.7% in 1977, 1978, and 1979, respectively. Incremental ROA for 1977 reflected a lower investment turnover and a decline in Return on Net Sales. In 1978, investment turnover improved substantially, but Incremental Return on Net Sales was far below 1977, resulting in a further reduction in ROA. Incremental ROA improved substantially in 1979 on a higher Return on Net Sales, offset partially by a lower investment turnover. The lower turnover resulted from a 11.3% Net Sales increase over 1978, contrasted to a 12.8% increase in Average Gross Assets. Much of the asset increase resulted from investment proceeds from the sale of a division. Each year since 1976, Incremental ROA was below the prior year's overall ROA and was substantially under the Company's 10% consolidated ROA goal. It should also be pointed out that performance in the recent past was far below the Incremental ROA for 1972, 1973, and 1974 of 10.3%, 31.6%, and 23.1%, respectively.

Certain factors which had a significant influence on the decline in the ROA and the Return on Average Shareholders' Investment from 1976 through 1979 would include:

1. A significant skewing of authorizations toward Nonfinancially-Justified, nonproductive capital. This skewing increases the asset base and, also, reduces future profitability through increased depreciation and other expenses.

2. Funds were authorized for major projects which did not meet guidelines or the current average ROA. Although there are business reasons for making such investments, the expected return may be insufficient to preserve the consolidated ROA.
3. Major projects approved in the past did not achieve planned results.
4. Acquisition of other businesses which are earning substantially below the consolidated Corporation ROA.

A recap of the financial ratios of the XYZ Corporation is presented on attached Schedules I and II. Schedule III recaps key ratios and financial information for the period from 1970 through 1979. Schedule IV reflects the Corporation's key ratios in a graph form.

As the review of the financial ratios revealed, the Company's key returns have been declining. This is the result of the Incremental Returns being below the Corporate Average Return. Our objective here will be to establish criteria and a Hurdle Rate for the accounting return and the cost of capital to insure, if achieved, improvement in the key ratios. First, we will review the Accounting Rate of Return for Incremental Gross Assets.

The key to improving the Corporation's overall return is to establish a return on additional assets employed which will help improve the consolidated returns. At this point, we will

establish the Corporate long-range goal for consolidated ROA at 10%. Currently, per Schedule III, the average ROA for 1979 is 8.8%. If we assume that the current assets employed will continue to achieve 8.8%, we must require future investments to obtain a higher return to bring the Corporate Consolidated Return up to an overall average of 10%.

In determining the appropriate Hurdle Rate, we must consider future cost of capital invested. The calculation would be as follows:

1979 Total Return on Average Assets (excluding Interest)	9.4%
Future Interest Rate After Taxes (At 12.5%, assuming payback over ½ of life)	3.1%
Required Rate of Return on Incremental Gross Assets	12.5%

This calculation tells us that we must achieve an overall 12.5% ROA on additional assets employed. As discussed in Chapter III, we must consider nonfinancial capital investments. Once the ratio of Financially-Justified to Nonfinancially-Justified is established, the Hurdle Rate can be established. The following reflects the range of Hurdle Rates that can be used, depending on the amount of capital employed for Financially-Justified Projects.

Project Hurdle Rates needed to meet required return on Incremental Gross Assets:

Incremental ROA	Hurdle Rates for Financially-Justified Projects			
	2.5:1	2:1	1.5:1	1:1
12.5%	17.5%	18.8%	20.8%	25.0%

To illustrate the above, assume the Corporation chose a ratio of 2.5 for Financially-Justified Projects to 1.0 for Nonfinancially-Justified Projects. Based on the above financial assumptions, this means a Hurdle Rate of 17.5% would be needed on Financially-Justified Projects to achieve an overall 12.5% ROA on incremental assets.

EXAMPLE:

	Ratio	Year 19XX Investment	Net Income	ROA
Financially-Justified	2.5	$2,500	$438	17.5%
Nonfinancially-Justified	1.0	1,000	---	---
TOTAL		$3,500	$438	12.5%

The example illustrates that the Company achieved a 17.5% on Financially-Justified Projects and 12.5% ROA on total investments. Of course, as the ratio changes, the required ROA will change, as depicted in the preceding chart. In this case, the achievement of 12.5% overall would not only pay for the cost of funds invested, but would also help improve the Consolidated Corporate Return. In addition, the Hurdle Rate must be changed when there is a substantial change in the interest rate on borrowed funds.

The Cost of Capital Rate of Return is used in the Discounted Cash Flow calculation, as discussed in Chapter III.

The purpose is to insure that funds invested return through cash flows a sum equal to or greater than the cost of capital.

The Cost of Capital consists of two elements. They are the Cost of Debt and the Cost of Equity. These two elements are used to finance the Company. The relationship of the two plays an important role in the Hurdle Rate and the Hurdle Rate should be changed when this relationship changes.

The following is the calculation of the Cost of Debt and Equity:

Cost of Debt

Assumed interest rate of 12.5%, after tax = 6.3%

Cost of Equity (COE)

$$COE = \frac{\text{Dividend Per Share}}{\text{Market Value}} + \text{Dividend Growth Rate} =$$

$$COE = \frac{1.20}{32} + 16.0 = 19.8\%$$

Now, we have calculated the Cost of Debt at 6.3% and the Cost of Equity at 19.8%. The following table determines the weighted average of each element and the Hurdle Rate needed, depending on Financially-Justified Capital Ratio to Nonfinancially-Justified.

WEIGHTED AVERAGE COST OF CAPITAL

Debt/Equity Ratio	Debt	Equity	Total	Hurdle Rates - FJ/NFJ Ratios 2.5:1	2:1	1.5:1	1:1
.1/.9	.6%	17.8%	18.4%	25.8%	27.6%	30.7%	36.8%
.2/.8	1.3%	15.8%	17.1%	23.9%	25.7%	28.5%	34.2%
.3/.7	1.6%	13.9%	15.5%	21.7%	23.3%	25.8%	31.0%

The Company's current ratio of debt to equity is .2/.8. Therefore, using the same criteria of 2.5:1, we would use 24.0% as our Hurdle Rate for the Cost of Capital. Again, this means the Discounted Cash Flow from a Financially-Justified Project must equal or exceed 24.0%.

Attached are Schedules V, VI, and VII which illustrate the change in the Return on Assets and the Return on Equity, depending on the method of financing. In each case, the following assumptions are given:

1. 11.9% growth in assets
2. 12.5% ROA on gross asset additions
3. 16.0% dividend growth rate

Case 1 (base case) indicates an increase in ROA to 10.0% by 1984, assuming no additional long-term debt or equity financing. Also, the Return on Equity (ROE) has a gradual increase, which would be expected.

Case 2 employs additional long-term debt financing at a 13% interest rate. The method of financing slowed the ROA growth rate, but the ROE increased because of the lower equity balance due to the debt borrowing.

Case 3 converts debt to equity financing which increased the ROA due to increased profit with less interest. The ROE has a slower growth rate because of the larger equity balance by the debt conversion.

The Cost of Capital Hurdle Rate of 24.0% must also be calculated on each project. The timing of funds flowing from a project will change the Rate of Return from the project. Schedule VIII compares the timing of cash flow from a project in three cases which have the same ROA over a five-year period. Again, the timing of income (cash flows) from the project is the only difference. As we can see, the sooner the cash flow is received (Case 3), the higher the Rate of Return.

Based on the information gathered on the XYZ Corporation, the following Capital Program should be established.

1. Evaluation Methods:

   A. Financially-Justified Projects:

      1) Accounting Return on Gross Assets and Payback will be the primary evaluation methods.

         a) New products and capacity increase projects:

            -- Hurdle Rate of 17.5% by third year and a five-year average of 17.5%

         b) Cost-Reduction Projects:

            -- Payback before depreciation and taxes should be in 2.5 years (equal to 17.5%).

      2) Discounted Cash Flow will be the supplementary evaluation method for projects exceeding $500,000.

         -- Hurdle Rate of 24.0%

B. Nonfinancially-Justified Projects:

These projects will be evaluated on the basis of business need, safety, government regulations, etc.

2. Capital Plan

Will be based on 2.5 to 1 Financially-to-Nonfinancially-Justified Ratio.

3. Post Evaluations

Will be performed on all Financially-Justified Projects after one year and three years of operation.

There is always flexibility in any Capital Plan, but, if the above criteria were achieved, the XYZ Corporation would improve its ROA and ROE and, eventually, achieve the overall Corporate goals. In order for the Company to achieve these goals, it is important that it continues to earn the present Return of 8.8%. Of course, an increase in this Return on existing assets would help the Company achieve its objectives sooner.

In this chapter, I have identified the Company's key ratios; established Hurdle Rates; through examples, showed the effect of higher returns on additional assets employed; and established a Capital Program that would help to achieve an overall improvement in the consolidated Return on Assets and Return on Equity.

SCHEDULE I

XYZ CORPORATION

Return on Average Gross Assets, Net Sales, and Average Shareholders' Equity

	1975	1976	1977	1978	1979
Total Operations					
1. Return on Average Gross Assets	8.8%	9.5%	9.3%	8.9%	11.2% 8.8%(1)
A. Asset Turnover	1.009(3)	1.048	1.033	1.084	1.069(4)
B. Return on Net Sales	8.7%	9.1%	9.0%	8.2%	10.5% 8.3%(1)
2. Return on Average Shareholders' Equity	15.1%	16.7%	16.3%	15.4%	19.3% 15.2%(1)
Continuing Operations					
1. Return on Average Gross Assets	8.6%	9.3%	9.1%	8.6%	8.7%
A. Asset Turnover(2)	1.066(3)	1.095	1.071	1.120	1.069(4)
B. Return on Net Sales(2)	8.1%	8.5%	8.5%	7.6%	8.1%
2. Return on Average Shareholders' Equity	14.0%	15.6%	15.3%	14.4%	15.0%
Incremental Ratios - Total Operations					
1. Return on Average Gross Assets	5.7%	13.3%	7.9%	4.9%	8.7%
A. Asset Turnover	0.462(3)	1.257	0.928	1.519	0.953(4)
B. Return on Net Sales	12.4%	10.6%	8.4%	3.2%	9.2%
2. Return on Average Shareholders' Equity	12.0%	25.7%	13.3%	8.2%	14.1%

(1) Excludes Gain on Sale of the Division.
(2) Excludes direct assets of Division sold.
(3) Gross assets include proceeds from $30 million convertible debentures issued in November, 1975. Excluding these proceeds, R.O.A. would have been 9.3%, 9.1% and 8.7% for total operations, continuing operations and incremental - total operations, respectively.
(4) Gross assets include proceeds of $25 million from sale of the Division in June, 1979. Excluding the net impact of these proceeds, R.O.A. for total operations, continuing operations and incremental - total operations would have approximated 9.0%, 9.1% and 10.6%, respectively.

XYZ CORPORATION
INCOME STATEMENT AND BALANCE SHEET INFORMATION
($000)

CHAPTER VII
SCHEDULE II

	1975	1976	1977	1978	1979
l Operations					
Income	$ 18,539(1)	$ 24,183	$ 27,163	$ 28,841	$ 41,068
(Excludes Gain on Sale)					32,486*
% Incr.	12.3 %	30.4 %	12.3 %	6.2 %	42.4 %
					12.6 %*
s Assets	234,342	273,115	309,678	341,225	393,262
% Incr.	24.6 %	16.5 %	13.4 %	10.2 %	15.3 %
age Gross Assets	211,226	253,729	291,397	325,452	367,244
% Incr.	20.2 %	20.1 %	14.8 %	11.7 %	12.8 %
eholders' Equity	132,386	156,655	177,053	197,494	228,820
% Incr.	17.5 %	18.3 %	13.0 %	11.5 %	15.9 %
age Shareholders' Equity	122,548	144,521	166,854	187,274	213,157
% Incr.	16.1 %	17.9 %	15.5 %	12.2 %	13.8 %
inuing Operations					
me from Continuing Oper.	17,176	22,550	25,560	26,940	31,932
% Incr.	11.7 %	31.3 %	13.3 %	5.4 %	18.5 %
Sales	213,113	265,953	300,912	352,648	392,470
% Incr.	8.3 %	24.8 %	13.1 %	17.2 %	11.3 %
s Assets(2)	223,101	262,701	299,047	330,694	393,262
% Incr.	26.3 %	17.7 %	13.8 %	10.6 %	18.9 %
age Gross Assets(2)	199,985	242,901	280,874	314,871	367,244
% Incr.	21.9 %	21.5 %	15.6 %	12.1 %	16.6 %

eholders' Equity - same as above

XYZ CORP

SCHEDULE OF OVERALL AND INCREMENTAL RETURN ON AVE

FOR YEARS 1970 T

($000'

	1970	1971	1972	1973	1974	T 197
SALES	$ 91,731	$100,117	$114,891	$156,284	$196,733	$ 6
INCOME	6,019	7,075	8,621	11,857	16,506	
RAGE GROSS ASSETS	121,488	131,456	142,954	155,603	175,752	7
URN ON AVERAGE GROSS ASSETS	5.0 %	5.4 %	6.0 %	7.6 %	9.4 %	
ETURN ON NET SALES	6.6 %	7.1 %	7.5 %	7.6 %	8.4 %	
SSET TURNOVER	0.76	0.76	0.80	1.00	1.11	
INCREASE OVER PRIOR YEAR NET SALES	-	9.1 %	14.8 %	36.0 %	25.9 %	
NET INCOME	-	17.5	21.9	37.5	39.2	
AVERAGE GROSS ASSETS	-	8.2	8.7	8.8	12.9	
RAGE SHAREHOLDERS' INVST.	$ 65,052	$ 70,521	$ 79,599	$ 91,830	$105,536	$ 4
URN ON AVE. SHRHLDRS' INVST.	9.3 %	10.0 %	10.8 %	12.9 %	15.6 %	
INCREASE OVER PRIOR YEAR NET INCOME	-	17.5 %	21.9 %	37.5 %	39.2 %	
AVE. SHRHLDRS' INVST.	-	8.4	12.9	15.4	14.9	
REMENTAL INFORMATION: ET INCOME	-	$ 1,056	$ 1,546	$ 3,236	$ 4,649	$
VERAGE GROSS ASSETS	-	9,968	11,498	12,649	20,149	
VERAGE SHRHLDRS' INVST.	-	5,469	9,078	12,231	13,706	
IN. ON AVE. GROSS ASSETS	-	10.6 %	13.4 %	25.6 %	23.1 %	
IN. ON AVE. SHRHLDRS' INVST.	-	19.3 %	17.0 %	26.5 %	33.9 %	

NOTES: Net sales reflect continuing operations amounts for all periods presented.
Net income includes total income from operations, excluding extraordinary items and on sale of the Division.
Gross assets and shareholders' investment reflect amounts reported in annual report

CHAPTER VII
SCHEDULE III

SS ASSETS AND SHAREHOLDERS' INVESTMENT
1979

1975	1976	1977	1978	1979	TOTAL 1975-1979	TOTAL 1970-1979
$213,113	$265,953	$300,912	$352,648	$392,470	$1,525,096	$2,184,852
18,539	24,183	27,163	28,841	32,486	131,212	179,487
211,226	253,729	291,397	325,452	367,244	1,449,048	2,176,301
8.8 %	9.5 %	9.3 %	8.9 %	8.8 %	9.1 %	8.2 %
8.7 %	9.1 %	9.0 %	8.2 %	8.3 %	8.6 %	8.2 %
1.01	1.05	1.03	1.08	1.07	1.05	1.00
8.3 %	24.8 %	13.1 %	17.2 %	11.3 %		
12.3	30.4	12.3	6.2	12.6		
20.2	20.1	14.8	11.7	12.8		
$122,548	$144,521	$166,854	$187,273	$213,157	$ 834,353	$1,240,891
15.1 %	16.7 %	16.3 %	15.4 %	15.2 %	15.7 %	14.4 %
12.3 %	30.4 %	12.3 %	6.2 %	12.6 %		
16.1	17.9	15.5	12.2	13.8		
$ 2,033	$ 5,644	$ 2,980	$ 1,678	$ 3,645	$ 15,980	$ 27,627
35,474	42,503	37,668	34,055	41,792	191,492	262,619
17,012	21,973	22,333	20,419	25,884	107,621	157,778
5.7 %	13.3 %	7.9 %	4.9 %	8.7 %	8.3 %	10.5 %
12.0 %	25.7 %	13.3 %	8.2 %	14.1 %	14.8 %	17.5 %

CAPITAL PROGRAM WITH 17.5% HURDLE RATE
PRO FORMA BALANCE SHEET

CASE 1

	1980	1981	1982	1983	1984
nt Assets	$196,649	$220,050	$246,236	$275,538	$308,326
urrent Assets	243,293	272,113	304,347	340,399	380,696
Accum. Depr.	72,426	86,032	101,249	118,269	137,304
lon-Curr. Assets	170,867	186,081	203,098	222,130	243,392
al Assets	$367,516	$406,131	$449,334	$497,668	$551,718
nt Liabilities	$ 57,713	$ 65,314	$ 72,326	$ 78,765	$ 84,643
Term Debt	54,665	54,665	54,665	54,665	54,665
holders' Equity	255,138	286,152	322,343	364,238	412,410
. Liab. & S.H. Equity	$367,516	$406,131	$449,334	$497,668	$551,718
Income	$ 37,767	$ 44,295	$ 51,597	$59,766	$ 68,902
rn on Gross Assets					
isting	8.2%	8.2%	8.2%	8.2%	8.2%
	12.5	12.5	12.5	12.5	12.5
Total	8.6	9.0	9.4	9.7	10.0
rn on Equity	15.6	16.4	17.0	17.4	17.7

IPTIONS:

11.9% growth in assets.
12.5% R.O.I. on gross asset additions.
No additional long-term debt or equity financing.
Financing needs satisfied by increases in current liabilities.
16.0% dividend growth rate.
The 1980 debt/equity ratio is .2/.8.

CAPITAL PROGRAM WITH 17.5% HURDLE RATE
PRO FORMA BALANCE SHEET

CASE 2

	1980	1981	1982	1983	1984
ent Assets	$196,649	$220,050	$246,236	$275,538	$308,326
Current Assets	243,293	272,113	304,347	340,399	380,696
: Accum. Depr.	72,426	86,032	101,249	118,269	137,304
Non-Curr. Assets	170,867	186,081	203,098	222,130	243,392
tal Assets	$367,516	$406,131	$449,334	$497,668	$551,718
ent Liabilities	$ 57,713	$ 65,314	$ 72,326	$ 78,765	$ 84,643
-Term Debt	92,940	95,428	98,262	101,293	104,535
eholders' Equity	216,863	245,389	278,746	317,610	362,540
l. Liab. & S.H. Equity	$367,516	$406,131	$449,334	$497,668	$551,718
Income	$ 35,279	$ 41,634	$ 48,764	$ 56,735	$ 65,660
rn on Gross Assets	8.0 %	8.5 %	8.9 %	9.2 %	9.5 %
rn on Equity	17.3	18.0	18.6	19.0	19.3

MPTIONS:

11.9% growth in assets.
12.5% R.O.I. on gross asset additions before additional interest.
Additional long-term debt financing @ 13% interest.
The 1980 debt/equity ratio is .3/.7.
16.0% dividend growth rate.

CAPITAL PROGRAM WITH 17.5% HURDLE RATE
PRO FORMA BALANCE SHEET

CASE 3

	1980	1981	1982	1983	1984
nt Assets	$196,649	$220,050	$246,236	$275,538	$308,326
urrent Assets	243,293	272,113	304,347	340,399	380,696
Accum. Depr.	72,426	86,032	101,249	118,269	137,304
on-Curr. Assets	170,867	186,081	203,098	222,130	243,392
al Assets	$367,516	$406,131	$449,334	$497,668	$551,718
nt Liabilities	$ 57,713	$ 65,138	$ 72,042	$ 78,451	$ 84,391
Term Debt	39,665	39,665	39,665	39,665	39,665
holders' Equity	270,138	301,328	337,627	379,552	427,662
. Liab. & S.H. Equity	$367,516	$406,131	$449,334	$497,668	$551,718
ncome	$ 38,367	$ 44,895	$ 52,197	$ 60,366	$ 69,502
n on Gross Assets	8.7 %	9.1 %	9.5 %	9.8 %	10.1 %
n on Equity	15.0	15.7	16.3	16.8	17.2

PTIONS:

11.9% growth in assets.
12.5% R.O.I. on gross asset additions.
Conversion of long-term debt ($15 million) to common stock during 1980.
Additional financing needs satisfied by increases in current liabilities.
16.0% dividend growth rate.

XYZ CORPORATION
CAPITAL INVESTMENT CRITERIA
CHANGE IN TIMING OF CASH FLOWS

SUMPTIONS:
AVERAGE ROA = 17.5%
INVESTMENT = 1,000
DEPRECIATION = 5 YEARS

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
SE 1 (ROA 17.5%)					
NET INCOME	$ 160	$ 160	$ 175	$ 190	$ 190
INVESTMENT TAX CREDIT	100	-	-	-	-
DEPRECIATION	200	200	200	200	200
CASH FLOW	$ 460	$ 360	$ 375	$ 390	$ 390
DISCOUNTED VALUE	$ 357	$ 217	$ 175	$ 141	$ 110
	IRR = 28.9%				
SE 2 (ROA 17.5%)					
NET INCOME	$ -	$ 100	$ 205	$ 260	$ 310
INVESTMENT TAX CREDIT	100	-	-	-	-
DEPRECIATION	200	200	200	200	200
CASH FLOW	$ 300	$ 300	$ 405	$ 460	$ 510
DISCOUNTED VALUE	$ 241	$ 193	$ 208	$ 189	$ 169
	IRR = 24.8%				
SE 3 (ROA 17.5%)					
NET INCOME	$ 300	$ 250	$ 155	$ 110	$ 60
INVESTMENT TAX CREDIT	100	-	-	-	-
DEPRECIATION	200	200	200	200	200
CASH FLOW	$ 600	$ 450	$ 355	$ 310	$ 260
DISCOUNTED VALUE	$ 448	$ 251	$ 147	$ 94	$ 60
	IRR = 34.1%				

CHAPTER VIII

CONCLUSION

In this paper, I have emphasized the importance of a Capital Investment Program and its effects on the key financial ratios of a corporation. As stated in the Introduction, a capital investment decision affects all aspects of a business; but, more importantly, the commitment of funds into the future is vital to the long-term success of the company.

All successful corporations have all or most of the key elements described in this paper which are needed for an effective Capital Investment Program. A Capital Budget plus corporate goals and objectives are the foundation for an effective program. Once the Budget is complete and corporate goals are set, the Project Approval System must be properly utilized to insure the objectives of the programs are met. Of course, obtainment of these objectives will insure accomplishment of the corporation's short-term and long-term goals. As pointed out previously, projects submitted with the expectation of achieving desired results for the total corporation may vary, depending on the actual results achieved. Failure to obtain desired results will cause the total consolidated results to fall short of corporate objectives. Therefore, the Post Evaluation process plays an important role in insuring the corporation's achievement of long-term goals.

As outlined in the paper, the Performance Reporting System keeps track of individual business units. This system is also an important aspect of helping the corporation achieve its long-term objectives. This measurement differs from Post Evaluations in that the Performance Measurement System evaluates the entire business unit versus an individual Capital Project.

The proper establishment of a Capital Investment Program and the monitoring of its results will insure the long-term growth and prosperity of the corporation.

FOOTNOTES

[1]Weston, Fred J. and Brigham, Eugene F., Managerial Finance, The Dryden Press, 1978, pp. 283-285.

[2]Weston, Fred J. and Brigham, Eugene F., Managerial Finance, The Dryden Press, 1978, pp. 283-285.

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[5]Rappaport, Alfred, "Strategic Analysis for More Profitable Acquisitions", Harvard Business Review, (July-August 1979), pp. 99-110.

[6]Weston, Fred J. and Brigham, Eugene F., Managerial Finance, The Dryden Press, 1978, pp. 695-712.

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