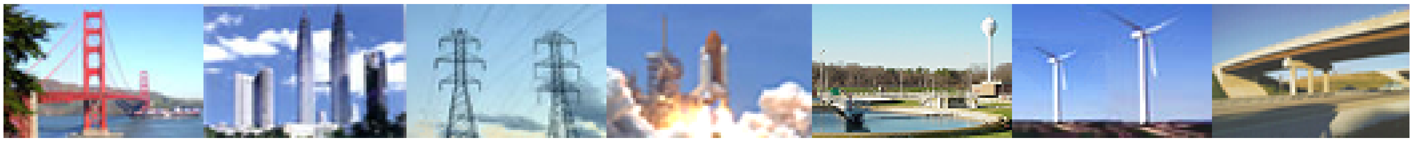

PDHonline Course P104 (8 PDH)

Project Cost Management

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Project Cost Management

Via

WEB BASED LEARNING

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Module 1
Basic Business Accounting

Concepts

Like projects, businesses are constantly monitored to determine the state of the company, potential deviations from the company plan and the causes for such deviations. The monitored data are presented in financial reports, both internal and external to the company, so that managers and investors alike can make decisions regarding future actions pertinent to the company. Before we examine the most widely used financial reports in business today, let's review some terms used in basic accounting.

Definitions

- Accounts Payable – Money that is owed by the company to its suppliers for goods and services received.
- Accounts Receivable – Money owed to the company by its customers and/or clients for goods and services provided.
- Cash Flow – The amount of cash that flows into and out of a company (or, for our purposes, a project).
- Cost – Money that a company must pay for materials, labor, services, etc. in order to conduct its business.
- Cost Driver – Any event that affects a cost item.
- Depreciation – The reduction in value of an asset over a period of time.
- Direct Cost – Costs that can readily be traced to a specific cost item.
- Fixed Cost – A cost that does not change over a given period of time or with respect to changes in volume.
- Gross Margin – The difference between revenue for goods sold and the cost of goods sold.
- Gross Profit – Similar to Gross Margin, but including cost accounting variances. Gross Profit = Gross Margin – cost accounting variances.
- Indirect Cost – Costs that cannot readily be traced to a specific cost item.
- Interest Income (Expense) – Net of interest earned on company financial accounts and paid on company financing.
- Long-term Assets – Assets that can be converted into cash over a period of time greater than one year.
- Long-term Liabilities – Financial obligations that are paid to creditors over a period of years.
- Net Income – The difference between revenue and all costs and expenses for the company.
- Notes / Notations – Notes generally accompany any financial statements. These notes clarify the basis and set of assumptions that were used in making the financial statements. **The notes are as meaningful as the statements themselves.**

- Operating Income – Net income from operations, excluding Other Income (Expenses) and Taxes. Gross Profit minus Operating Expenses.
- R&D Costs – The costs associated with research and development for new products and processes.
- Revenue – Cash received by a company in return for goods and services supplied. Often the same as Sales.
- Sales – Amount of goods and services that have been sold. Sales provide the potential for companies to recognize revenue. Often the same as Revenue.
- SG&A – Selling, General, and Administrative expenses. These are expenses not directly associated with production of the company's goods and services.
- Taxes – One of only three certainties in life.
- Variable Cost – A cost that changes in response to changes in cost drivers (time, production rate, etc.).

Financial Reports

- Allow us to asses the health of our business or project
- Internal Financial Reports:
  1. Show the financial state of the company or project.
  2. Periodic: typically weekly, monthly, quarterly and/or annually
  3. Gives us information for the decision-making process.
  4. Provides an assessment of management performance.
  5. Helps us to answer vital questions about our business:
     - Where are we in our cash flow cycle?
     - Are we making (or losing) money?
     - How much money?
     - What are the short-term and long-term outlooks?

- External Financial Reports:
  1. Again, shows the financial state of the company.
  2. Again, periodic: typically though only quarterly and annually.
  3. Must be performed according to GAAP (Generally Accepted Accounting Principles).
  4. Provide information primarily to shareholders and potential shareholders; though also invaluable information for company members (us).
  5. Required by Banks for access to long-term loans and short-term working capital.
  6. Required for tax reporting purposes (national and local).

Reading and Understanding Financial Statements

When we talk about financial statements, we are generally referring to three statements that are widely used to show the financial state of a business. They are:

1. The Income Statement (P&L)*
2. The Balance Sheet*
3. The Cash Flow Statement*

* Notes / notations are generally used to supplement any or all of the three types of reports.

Income Statement (P&L)

Let us first direct our attention to the Income Statement, often referred to as a Profit and Loss Statement (or P&L). In external reporting, the Income Statement is generally called the *Statement of Operations*. For a given period of time, the income statement shows the company's net income and how that net income was calculated. Remember, we defined net income as total revenues minus total expenses. If this value is positive (revenues greater than matching expenses), then the company has made a profit. If this value is negative (revenues less than matching expenses), then the company has incurred a loss for the period.
It is important to note that the P&L statement does not reflect the actual amount of cash (surplus or deficit) at any specific time. Many start-up companies can have a great P&L yet go bankrupt due to poor cash flow. Rather, it shows whether or not the company was "profitable" for the given period. In order to accurately represent the profitability of the company, the revenues must be matched with the expenses associated with those revenues. For this reason, accountants use accruals to match revenues with expenses.

Let's walk through the P&L statement in Figure 1.1 and discuss each line item as it relates to a business.

Figure 1.1

Income Statement for Examples.com

	Period Actual	Period Budget	Period Prior Yr
Revenue	**116,099**	**112,050**	**82,797**
Cost of Goods Sold	55,039	53,800	43,259
Gross Margin	**61,060**	**58,250**	**39,538**
Operating Expenses:			
SG&A	19,060	18,835	17,123
R&D	13,523	12,980	12,645
Depreciation	940	900	870
Operating Income	**27,537**	**25,535**	**8,900**
Other Income (Expense):			
Interest Income	77	54	12
Interest Expenses	(350)	(238)	(200)
Gain (Loss) on Sales of Equipment	(29)	(20)	0
Total Other Income (Expense)	(302)	(204)	(188)
Income before Taxes	**27,235**	**25,331**	**8,712**
Taxes	9,260	8,613	2,614
Net Income	**17,975**	**16,718**	**6,098**

Explanation

1. The three columns above show results for the reporting period as well as the budget for the period and the results for the same period in the prior year in order to allow comparisons. The budget columns would not be shown for external reporting.
2. Gross Margin = Revenue (Sales) – Cost of Goods Sold.
3. Cost of Goods Sold: All costs that are directly related to the production of the company's goods or services. Examples are raw material costs and production labor.
4. Operating Expenses: Expenses not directly related to production of goods and services but required to support continuing operations of the company. Examples are SG&A, R&D and Depreciation.
5. Some examples of SG&A are: Salaries, bonuses, fringe benefits, advertising, travel, postage, telephones, etc.
6. Operating Income = Gross Margin – Operating Expenses.
7. Other Income (Expenses): Income and expenses not related to normal company operations. Examples are interest income from company investments, interest expenses on company financing, and Gain (Loss) on Sales of Equipment.
8. Income before Taxes = Operating Income + Other Income (Loss).
9. Taxes = Total tax liability on income before taxes.
10. Net Income = Income after taxes.

The Balance Sheet

1. Shows all assets that the company owns.

2. Shows all financial obligations to its creditors:
   - Banks
   - Company Shareholders
   - Vendors

3. Total assets and total liabilities **must** match.

Company Assets and Investments

1. These entries are shown on the left-hand side (or top) of the report.
2. Current Assets – Those assets that are to be converted to cash within a one-year period. Examples are:
   - Raw materials to be converted into final product or services
   - Work-in-process
   - Inventories of finished goods
   - Accounts Receivable
3. Long-term Assets – Those assets that are converted into cash over a period of time exceeding one year. Examples are:
   - Property, Plant, and Equipment (PP&E)
   - Purchased Technology

Company Financing and Liabilities

1. These entries are shown on the right-hand side (or bottom) of the report.
2. These entries show the sources of money that paid for the assets on the left-hand side of the report.
3. Current Liabilities – Those financial obligations that are to be paid to creditors within one year. Examples are:
   - Accounts Payable
   - Leases (current portion)
   - Short-term bank loans
4. Long-term Liabilities – Those financial obligations that are structured to be paid over a period of years.
   - Bank Loans
   - Leases (net of current portion)
5. Equity – Statement of the ownership interests in the company. It includes the initial investments of shareholders as well as earnings that have not been paid out as dividends to investors.
   - Common Stock
   - Retained Earnings

Now let's look at the sample balance sheet in Figure 1.2 and discuss each line item as it relates to the business.

Figure 1.2

Balance Sheet for Examples.com

Assets		**Liabilities**	
Current Assets		Current Liabilities	
Cash	88,616	Accounts Payable	15,201
Accounts Receivable	20,349	Long-term Liabilities	
Inventory	6,596	Bank Debt	18,525
Long-term Assets		Equity	
Property, plant & equipment	2,680	Common Stock	80,054
		Retained Earnings	4,461
Total Assets	**118,241**	**Total Liabilities**	**118,241**

Explanation

Current Assets	
1. Cash	88,616
2. Accounts Receivable	20,349
3. Inventories	6,596
Long-term Assets	
1. Property, plant and equipment	
2. Less Depreciation	
3. Property, plant and equipment (net)	2,680
Current Liabilities	
1. Accounts Payable	15,201
Long-term Liabilities	
1. Bank Loans	18,525
Equity	
1. Common Stock	80,054
2. Retained Earnings	4,461

The Cash Flow Statement

1. Documents the change in cash for the accounting period.
2. Summarizes inflows (sources of cash) and outflows (uses of cash) for the business during the period.
3. Answers the questions:
   - Where did the cash come from?
   - And, how was the cash used?
4. Allows for comparison of the current period to the previous period.

Structure of Cash Flow Statement

1. **Cash Flows**: Cash flows are grouped according to phases of the cash flow cycle:
   - Cash Flows from Operating Activities
   - Cash Flows from Investing Activities
   - Cash Flows from Financing Activities
2. **Change in Cash**: The three cash flow values are then added together to arrive at the total change in cash for the period.
3. **Beginning Cash Balance**: This is simply the cash balance at the beginning of the period (or the ending cash balance from the previous period).
4. **Ending Cash Balance**: The change in cash is added to the beginning cash balance to arrive at the ending cash balance.

Now let's look at the sample cash flow statement in Figure 1.3 and discuss each line item as it relates to the business.

Figure 1.3

Cash Flow Statement for Examples.com

	Current Period	Previous Period
Cash Flows from Operating Activities		
Net Income	30,003	575
Adjustments to reconcile net income to net cash		
Depreciation	1,715	493
Net (increase) decrease in working capital	(11,744)	(391)
Net cash provided (used) by operating activities	19,974	677
Cash Flows from Investing Activities		
Decrease (increase) in long-term assets	(1,968)	(698)
Net cash provided (used) by investing activities	(1,968)	(698)
Cash Flows from Financing Activities		
Issue (repurchase) of equity	42,000	---
Issue (repayment) of debt	(7,313)	(563)
Net cash provided (used) by financing activities	34,687	(563)
Change in Cash	52,693	(584)
Beginning Cash Balance	3,114	3,698
Ending Cash Balance	55,807	3,114

Explanation

- Cash Flows from Operating Activities:
  1. Net Income
  2. Adjustments to reconcile net income to net cash:
     - Depreciation
     - Net (increase) decrease in working capital
  3. Net cash provided (used) by operating activities

- Cash Flows from Investing Activities:
  4. Decrease (increase) in long-term assets
  5. Net cash provided (used) by investing activities

- Cash Flows from Financing Activities:
  6. Issue (repurchasing) of equity
  7. Issue (repayment) of debt
  8. Net cash provided (used) by financing activities

- Change in Cash – Change in cash for the period is simply the summation of the net cash flows from Operating, Investing and Financing Activities (or items 3, 5, and 8).

- Beginning Cash Balance – Cash balance at the start of the period. Note that this is the same as the ending cash balance for the previous period.

- Ending Cash Balance – Cash balance at the end of the period. This is the summation of the Change in Cash and the Beginning Cash Balance. This value will be carried over and used as the beginning cash balance on the cash flow statement for the next period.

Financial Reports Exercise

Review the following financial reports, and answer the following questions:

1. Did the company purchase any equipment in the year 2000?
2. Do total assets and total liabilities match?
3. Did the company experience top-line (revenue) growth or contraction from 1999 to 2000? How much?
4. Did the company experience bottom-line (earnings) growth or contraction from 1999 to 2000? How much?
5. Was cash flow positive or negative in 2000?
6. Did the change in accounts receivable have a positive or negative impact on cash flow?
7. Did the change in accounts payable have a positive or negative impact on cash flow?

FINANCIAL REPORTS EXERCISE
Balance Sheets
(Sheet 1 of 2)

The ONE Company, Inc.
Years Ended December 31, 2000 and 1999

Assets

	Year 2000	Year 1999
Current Assets		
Cash and Cash Equivalents	94,991	791,662
Trade Accounts Receivable	1,146,380	1,325,249
Notes Receivable from Trusts	0	500,000
Due from Stockholders	0	400
Inventories	630,209	568,581
Prepaid Expenses	52,682	5,972
Total Current Assets	**1,924,262**	**3,191,864**
Long-Term Assets		
Property, Plant, & Equipment		
Land	30,625	30,625
Building	835,230	835,230
Leasehold Improvements	767,945	767,945
Machinery & Equipment	5,885,977	5,564,403
Office Equipment	238,100	238,100
Vehicles	95,606	95,606
Equipment Held under Capital Lease	264,900	264,900
Equipment not in Service	0	51,078
Total PP&E	8,118,383	7,847,887
Less Accumulated Depreciation and Amortization	5,643,350	5,214,103
Net PP&E	2,475,033	2,633,784
Investment Assets	5,884	5,884
Total Long-Term Assets	**2,480,917**	**2,639,668**
Total Assets	**4,405,179**	**5,831,532**

FINANCIAL REPORTS EXERCISE
Balance Sheets
(Sheet 2 of 2)

The ONE Company, Inc.
Years Ended December 31, 2000 and 1999

Liabilities and Stockholders Equity

	Year 2000	Year 1999
Current Liabilities		
Accounts Payable	331,327	142,203
Accrued Liabilities		
Payroll	59,258	110,949
Payroll Taxes	10,813	14,277
State and Local Taxes	50,314	53,539
Employee Benefits	50,000	50,000
Current Portion of Long-Term Debt	368,964	249,229
Total Current Liabilities	**870,676**	**620,197**
Long-Term Liabilities		
Long-Term Debt less Principal Due Due Within One Year	992,610	816,009
Total Long-Term Liabilities	**992,610**	**816,009**
Stockholders Equity		
Common Stock	12,480	12,480
Additional Paid-in Capital	5,454	5,454
Retained Earnings	4,226,959	4,377,392
Less Cost of 131 Common Shares In Treasury in 2000	1,703,000	0
Total Stockholders Equity	**2,541,893**	**4,395,326**
Total Liabilities	**4,405,179**	**5,831,532**

<u>FINANCIAL REPORTS EXERCISE</u>
Statement of Operations

The ONE Company, Inc.
Years Ended December 31, 2000 and 1999

	Total Amounts		as % of Net Sales	
	Year 2000	Year 1999	2000	1999
Net Sales	**8,804,871**	**9,690,376**	100.00	100.00
Cost of Goods Sold	6,979,303	7,500,071	79.27	77.40
Gross Profit	**1,825,568**	**2,190,305**	20.73	22.60
Operating Expenses	1,045,915	1,062,806	11.88	10.97
Operating Income	**779,653**	**1,127,499**	8.85	11.63
Other Income				
Interest and Dividends Earned	32,630	41,335	0.37	0.43
Miscellaneous	38	28,292	0.00	0.30
Loss on Disposal of Equipment	0	(17,241)	0.00	(0.18)
Interest Expense	(67,990)	(63,795)	(0.77)	(0.66)
Total Other Income (Expense)	**(35,322)**	**(11,409)**	(0.40)	(0.11)
Net Income	**744,331**	**1,116,090**	8.45	11.52

FINANCIAL REPORTS EXERCISE
Statement of Cash Flows

The ONE Company, Inc.
Years Ended December 31, 2000 and 1999

	Year 2000	Year 1999
Cash Flows from Operating Activities		
Net Income	744,331	1,116,090
Adjustments to Reconcile Net Income to		
Net Cash Provided by Operating Activities		
Depreciation and Amortization	429,247	497,548
Loss on Disposal of Equipment	0	17,241
Changes in Operating Assets and Liabilities		
(Increase) Decrease in Accounts Receivable	178,869	(43,524)
(Increase) Decrease in Inventories	(61,628)	73,658
(Increase) Decrease in Prepaid Expenses	(46,710)	339
(Increase) Decrease in Amount Due from Stockholders	400	(400)
Increase (Decrease) in Accounts Payable	189,123	(206,595)
Decrease in Accrued Liabilities	(59,475)	(141,886)
Net Cash Provided (Used) by Operating Activities	1,374,157	1,312,471
Cash Flows from Investing Activities		
Purchase of Property, Plant, and Equipment	(270,495)	(62,595)
Decrease in Notes Receivable	500,000	0
Proceeds from Sales of Equipment	0	3,589
Net Cash Provided (Used) by Investment Activities	229,505	(59,006)
Cash Flows from Financing Activities		
Borrowings on Long-Term Debt	572,000	0
Reduction of Long-Term Debt	(275,664)	(273,547)
Cash Paid for Purchase of Treasury Shares	(1,703,000)	0
Distributions Paid	(893,669)	(972,928)
Net Cash Provided (Used) by Financing Activities	(2,300,333)	(1,246,475)
Change in Cash	**(696,671)**	**6,990**
Beginning Cash Balance	**791,662**	**784,672**
Ending Cash Balance	**94,991**	**791,662**

FINANCIAL REPORTS EXERCISE SOLUTION

1. Did the company purchase any property, plant and equipment in the year 2000?
   Yes, $321,574 worth ($5,885,977 - $5,564,403).

2. Do total assets and total liabilities match?
   Yes, $4,405,179 to $4,405,179.

3. Did the company experience revenue growth or contraction from 1999 to 2000? By how much?
   A contraction of $885,505 ($8,804,871 - $9,690,376).

4. Did the company experience net income (earnings) growth or contraction from 1999 to 2000? By how much?
   Earnings contracted by $371,759 ($744,331 – $1,116,090).

5. Was cash flow positive or negative in 2000?
   Positive by $1,374,157

6. Did the change in accounts receivable have a positive or negative impact on cash flow?
   A positive $178,869 impact on cash flow.

7. Did the change in accounts payable have a positive or negative impact on cash flow?
   A positive $189,123 impact on cash flow.