Financial Statements

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Introduction

- Some basic knowledge of accounting and financial statements is necessary for a chemical professional to be able to analyze a firm's operations, discover whether the firm is making a profit and whether a company will continue to make a profit.

- Financial reports of a company are important sources of data used by management, owners, creditors, investment bankers, and financial analysts.

- Accounting systems have input business transactions in the form of receipts and invoices. These events are entered chronologically in a journal and are then classified and posted in an appropriate account in a ledger. Periodically, perhaps once a month but at least once a year, the accounts are closed and a summary is issued as an income statement and a balance sheet

Flow of Information through an Accounting System

Business transaction takes place

↓

Business document is prepared

↓

Information is entered chronologically in a JOURNAL

↓

Debits and credits are posted to accounts in a LEDGER

↓

Financial statements are prepared and presented in

INCOME STATEMENT and BALANCE SHEET

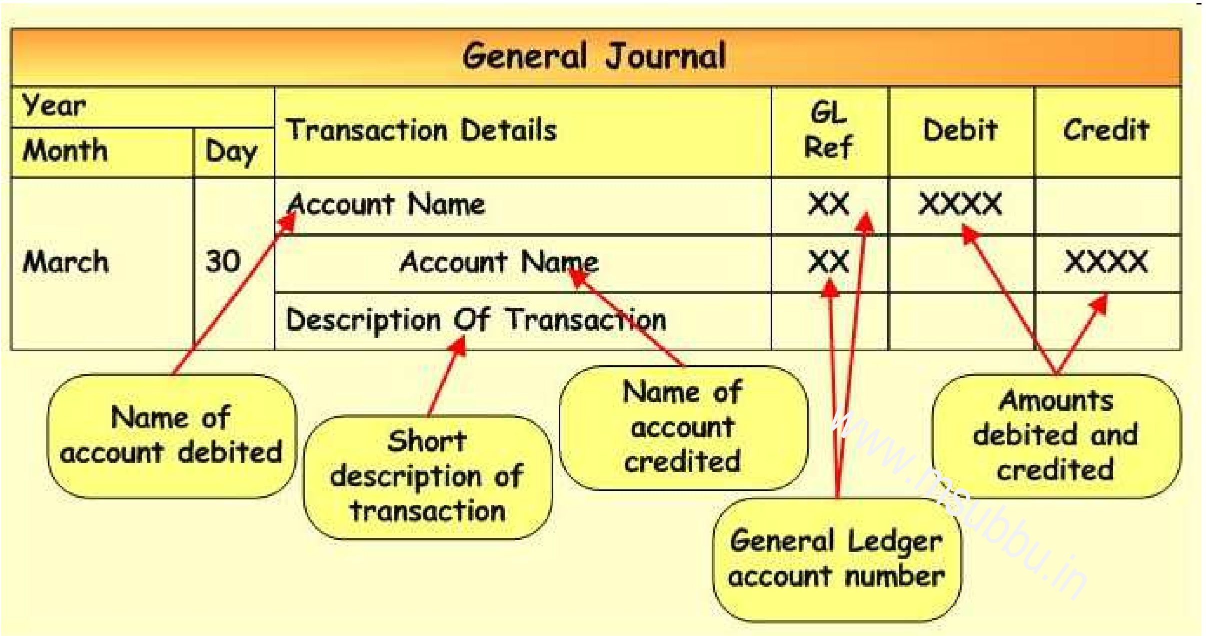
↓

Formal reports are issued to stockholders and government agencies

Debits and Credits

- Whenever economic events occur, the accounting equation changes and the events are recorded in books.
- The left side of the account book page has been arbitrarily designated the debit side, and the right side the credit side. This convention is true regardless of the type of account.

Journal and Ledger Entries



Account Name (General Ledger)					
Year		Transaction Details	Debit	Credit	Balance
Month	Day				
March	XX	Transaction name	XXXX		XXXX
March	XX	Transaction name		XXXX	XXXX
March	XX	Transaction name	XXXX		XXXX

- Business transactions having an impact on the financial position of the business ***are first recorded in the general journal***, which is one of the accounting prime entry books

- Then, entries from general journal ***are posted to the general ledger***, i.e. to the corresponding account, which composes general ledger.

General Journal				
Year / Month	Transaction Details	GL Ref	D	C
Dec 15	Cash	101	12000	
	Share Capital	301		12000
	Establishment of XYZ			

Cash Acc. No.101				
Year / Month	Transaction Details	D	C	Balance
Dec 15	Establishment of XYZ	12000		12000

Share Capital Acc. No. 301				
Year / Month	Transaction Details	D	C	Balance
Dec 15	Establishment of XYZ		12000	(12000)

Accounting Equation

- ***Double-entry bookkeeping system***, expressed as follows in simplest terms:

  Assets = Equities

- ***Assets*** are the economic resources a company owns and which are expected to benefit future operations. Assets are items of value and may be tangible, such as equipment, buildings, furniture, or intangible, like franchises, patents, trademarks.

- **Equities** are claims against the firm and may be divided into liabilities and owners' equity.

- The above equation then may be modified as follows:

  Assets = Liabilities + Owners' equity

- **Liabilities** are outside claims against the assets of a firm, e.g., accounts payable, borrowed funds, taxes owed. These obligations require settlement in the future.

- If liabilities are deducted from the assets, the difference is the amount belonging to the firm's owners, i.e., stockholders, and is called owners' equity.

- Any transaction that takes place causes changes in the accounting equation. An increase in assets must be accompanied by one of the following:
  - Increase in liabilities (e.g., money borrowed to purchase equipment)
  - Increase in stockholders' equity

- A change in one part of the equation due to an economic transaction must be accompanied by an equal change in another place—hence the term *double-entry bookkeeping*.

Financial Report

- A financial report contains two significant documents—the **balance sheet** and the **income statement**.
- Two ancillary documents are the accumulated retained earnings and the changes in working capital.
- In some annual reports, the accumulated retained earnings are included in the statement of consolidated stockholders' equity.

Balance Sheet

- **Balance sheet** indicates structure of the assets belonging to the company and financial means used to finance these assets at a particular point of time.

- The balance sheet consists of two parts: the **assets**, which are what the company owns, and **the liabilities and stockholders' equity**, which are what the company owes.

- The total assets must equal the total liabilities plus the stockholders' equity for both sides of the sheet to balance.

- A balance sheet contains some real figures (e.g., cash and marketable securities), some estimated numbers or allowances (e.g., inventories and accounts receivable), as well as some fictitious numbers (e.g., intangibles for which numbers are difficult to assess).

The Balance Sheet Format

ASSETS	**LIABILITIES AND OWNERS' EQUITY**
Current Assets (Cash, A/R, Inventory)	Current Liabilities (Accounts Payable, Current debt)
Noncurrent Assets	Long-Term Liabilities
Investments	Owners Equity
Fixed Assets (PP&E)	*Contributed capital*
Intangible assets	*Retained earnings*

ASSETS	
Current Assets	
Cash in Bank	$ 41,150
Accounts Receivable	$ 4,806
Less Allowance for Bad Debts	$ (58)
Inventory	2,670
Prepaid Expenses	2,200
Total Current Assets	$ 50,768
Noncurrent Assets	
Land	20,000
Total Noncurrent Assets	$ 20,000
Total Assets	$ 70,768

LIABILITIES & NET WORTH	
Current Liabilities	
Accounts Payable	$ 1,500
Interest Payable	$ 90
Payroll Taxes Payable	$ 113
Wages Payable	$ 817
Current Portion Long-term Debt	900
Total Current Liabilities	$ 3,420
Long-term Liabilities	
Mortgage Payable *(greater than 12 months)*	$ 18,000
Less: Short-term Portion	(900)
Total Long-term Liabilities	$ 17,100
Total Liabilities	$ 20,520
Owners' Equity (Net Worth)	
Owner's Investment	50,000
Retained Earnings	248
Total Owner's Equity	$ 50,248
Total Liabilities & Net Worth	$ 70,768

Ward's Consulting
Balance Sheet
As at December 31, 2005

Assets		
Cash		$7,000
Accounts Receivable		3,000
Office Supplies		3,000
Office Equipment		5,000
Total Assets		$18,000
Liabilities		
Bank Loan	$5,000	
Accounts Payable	1,000	
		$6,000
Equity		
Common Stock	$10,000	
Net Income	2,000	12,000
Total Liabilities and Equity		$18,000

Balance sheet for XYZ business on the 31st of December 2010		
	$	$
ASSETS		
Non-current assets		2,150,000
Land and buildings	2,000,000	
Furniture	12,000	
Machinery	18,000	
Investments	120,000	
Current assets		10,000
Inventory	1,000	
Debtors / receivables	3,200	
Bank and cash	5,800	
TOTAL ASSETS		2,160,000
EQUITY AND LIABILITIES		
Owner's equity		1,700,000
Capital	1,700,000	
Non-current liabilities		440,000
Loan	440,000	
Current liabilities		20,000
Creditors / payables	20,000	
TOTAL EQUITY AND LIABILITIES		2,160,000

Non-current means *long-term* and **current** means *short-term*.

TABLE 3.8 Archem, Inc.: Consolidated Balance Sheet as of December 31[a]

Assets	200X	2000
Current assets		
Cash	$ 63,000	$51,000
Marketable securities	41,000	39,000
Accounts receivable[b]	135,000	126,000
Inventories	149,000	153,000
Prepaid expenses	3,200	2,500
Total current assets	$391,200	$371,500
Fixed assets		
Land	35,000	35,000
Buildings	101,000	97,500
Machinery	278,000	221,000
Office equipment	24,000	19,000
Total fixed assets	$438,000	$372,500
Less accumulated depreciation	128,000	102,000
Net fixed assets	$310,000	$270,500
Intangibles	4,500	4,500
Total assets	$705,700	$ 646,500

a. Amount in thousands of dollars

Contd..

Liabilities	200X	2000
Current liabilities		
Accounts payable	$ 92,300	$ 81,300
Notes payable	67,500	59,500
Accrued expenses payable	23,200	26,300
Federal income taxes payable	18,500	17,500
Total current liabilities	$201,500	$184,600
Long-term liabilities		
Debenture bonds, 10.3% due in 2015	110,000	110,000
Debenture bonds, 11.5% due in 2007	125,000	125,000
Deferred income taxes	11,600	10,000
Total liabilities	$448,100	$429,600
Stockholders' equity		
Preferred stock, 5% cumulative		
$5 par value—200,000 shares	$ 10,000	$ 10,000
Common stock, $1 par value		
2000 28,000,000 shares	32,000	28,000
200X 32,000,000 shares		
Capital surplus	8,000	6,000
Accumulated retained earnings	207,600	172,900
Total stockholders' equity	$257,600	$216,900
Total liabilities and stockholders' equity	$705,700	$646,500

Assets

- The assets of a company are divided into three broad categories: current assets, fixed assets, and intangibles.

- **Total Current Assets:** the sum of cash, marketable securities, inventories, accounts receivable, and prepaid expenses is called total current asset. The current assets are those that may be converted to cash within a year from the date of the balance sheet.

- **Fixed Assets:** a company's fixed assets include land, buildings, manufacturing equipment, office equipment, automobiles, trucks, and so on that the company owns. These items are carried on the books at cost less the accumulated depreciation.

- **Intangibles:** they are assets that have substantial value to the company (patents, licenses, franchises, trademarks, goodwill, etc.).

Liabilities

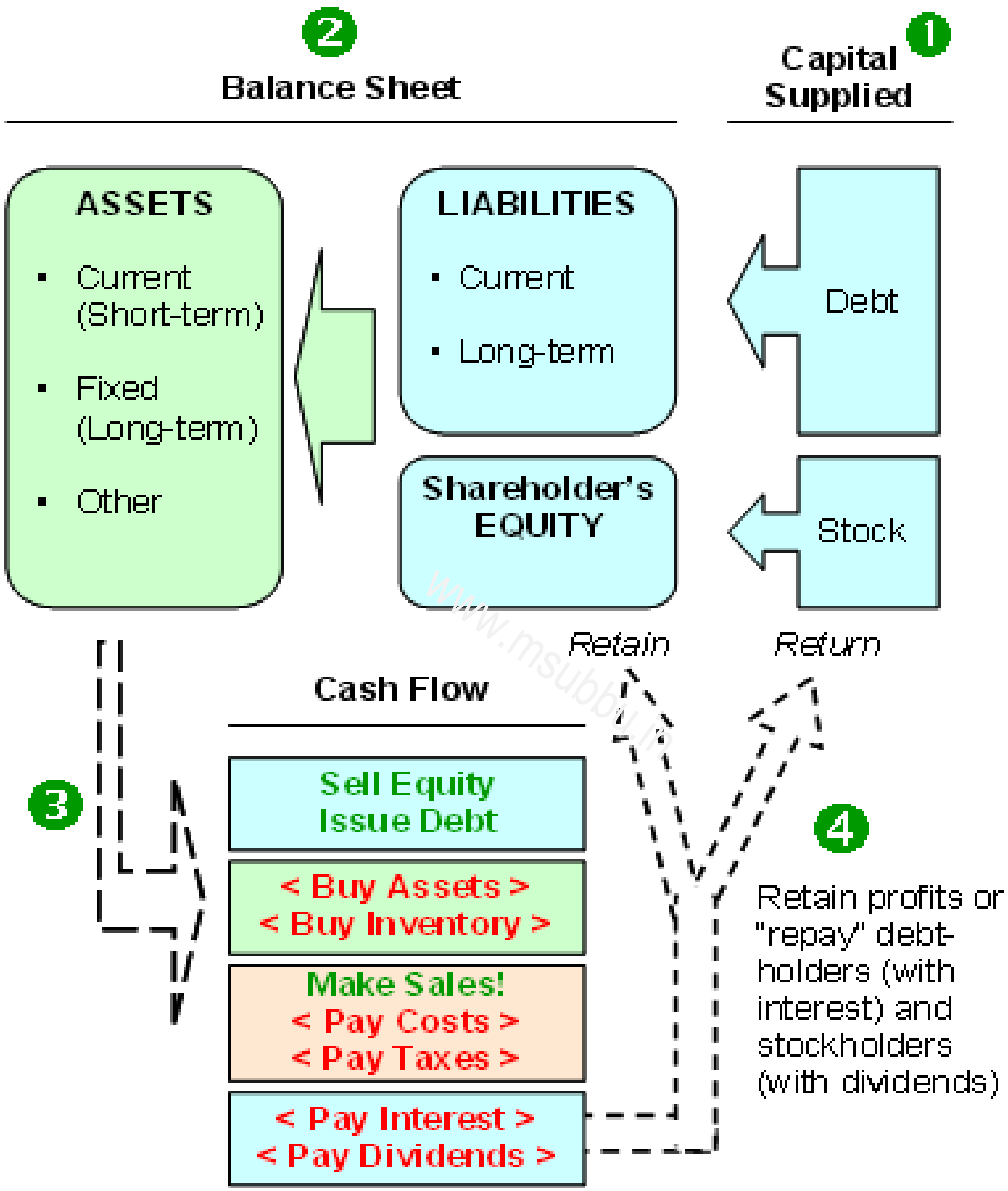
- The liabilities are what a company owes, divided into current and long-term liabilities.

- **Current Liabilities**: these are debts that must be paid within a year from the date of the balance sheet. They are paid from the current assets. Current liabilities include accounts payable, notes payable, accrued expenses payable, and income taxes payable.

- **Long-term liabilities** are debts due more than a year from the date of the financial report. Long-term loans from insurance companies and investment houses are another form of long-term liability

Stockholders’ Equity

- This is the total interest that the stockholders have in the business.
- The stockholders’ equity is the net worth of the company, namely, total assets minus total liabilities.
- For convenience, stockholders’ equity is divided into three categories: capital stock, capital surplus, and accumulated retained earnings.
- **Capital surplus** is the amount of money stockholders paid for stock over and above the par value of the stock. The **accumulated retained earnings** are calculated by subtracting the dividends paid to stockholders from the net profit. If all the profits in one year are not distributed, they are retained by the firm and added to next year’s earnings.


2
Balance Sheet
Capital Supplied
1
ASSETS
Current (Short-term)
Fixed (Long-term)
Other
LIABILITIES
Current
Long-term
Debt
Shareholder's EQUITY
Stock
Retain
Return
Cash Flow
3
Sell Equity
Issue Debt
< Buy Assets >
< Buy Inventory >
Make Sales!
< Pay Costs >
< Pay Taxes >
< Pay Interest >
< Pay Dividends >
4
Retain profits or "repay" debt-holders (with interest) and stockholders (with dividends)

Working Capital		
Current Assets		**Current Liabilities**
Cash		Short-term Debt
Marketable Securities		Current Portion of Long-Term Debt
Accounts Receivable		Accounts Payable
Inventory		Accrued Liabilities
Prepaid Expenses		

Income Statement

Profits = Revenue - Expenses

- Income-sheet accounts of all income and expense items, such as sales, purchases, depreciation, wages, salaries, taxes, and insurance, are maintained, and these accounts are summarized periodically in ***income statements.***

- A consolidated income statement is based on a given time period. It indicates surplus capital and shows the relationship among total income, costs, and profits over the time interval.

- It is also known as the **profit and loss statement.**

Sales Revenue	*$5,200,000*
Cost of Goods Sold Expense	*(3,120,000)*
Gross Margin	*$2,080,000*
Selling and General Expenses	*(1,430,000)*
Depreciation Expense	*(160,000)*
Operating Eanings	*$490,000*
Interest Expense	*(97,500)*
Earnings Befoe Income Tax	*$392,500*
Income Tax Expense	*(137,375)*
Net Income	*$255,125*

Income statement for XYZ business for the period ending 31st of December 2010		
	$	$
INCOME		94,600
Services rendered	94,600	
EXPENSES		(60,366)
Salaries	25,000	
Telephone & internet	6,500	
Water & electricity	16,000	
Property rates and taxes	1,000	
Insurance	7,300	
Advertising costs	1,000	
Fuel	2,500	
Stationery	412	
Bank charges / interest paid	654	
Tax expense	3,414	
NET PROFIT		30,820

Multi-Step Format	Single-Step Format
Net Sales	Net Sales
Cost of Sales	Materials and Production
Gross Income*	Marketing and Administrative
Selling, General and Administrative Expenses (SG&A)	Research and Development Expenses (R&D)
Operating Income*	Other Income & Expenses
Other Income & Expenses	Pretax Income
Pretax Income*	Taxes
Taxes	Net Income
Net Income (after tax)*	--

Read more: http://www.investopedia.com/articles/04/022504.asp#ixzz27YU4pOdH

Income Statement Formats

- Two basic formats for the income statement are used in financial reporting presentations - the multi-step and the single-step

- In the multi-step income statement, four measures of profitability (*) are revealed at four critical junctions in a company's operations - gross, operating, pretax and after tax. In the single-step presentation, the gross and operating income figures are not stated; nevertheless, they can be calculated from the data provided.

- Read more: http://www.investopedia.com/articles/04/022504.asp#ixzz27YVB5ZlV

Income Statement – Example

TABLE 3.6 Nuchem, Inc.: Consolidated Income Statement, January 1–31, 20XX

Revenue	$0
Legal expenses	$1000
Depreciation expense: equipment	25
Interest expense	20
Earnings (loss)	($1045)

Terminologies in Income Statement

- **Net Sales:** the net sales is the amount of money received for the goods sold less the amount of returned goods and allowances for reduction in prices (e.g., allowing for freight on goods shipped).

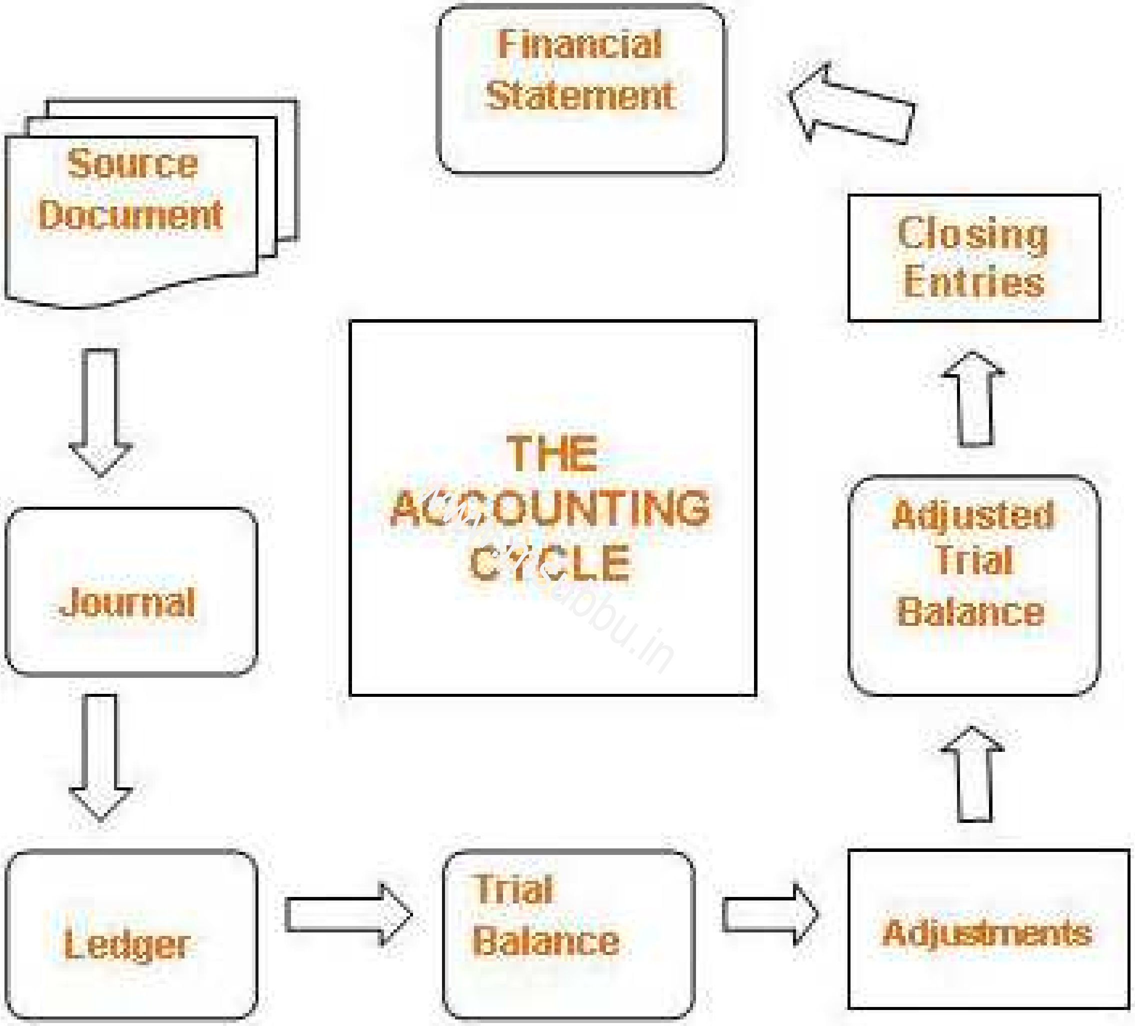
- **Cost of Goods Sold and Operating Expenses:** this item includes all the expenses in converting raw materials into finished products, including depreciation, as well as sales, administration, research, and engineering expenses.

- **Operating Profit (Operating Income):** this entry is the difference between net sales and all operating expenses.

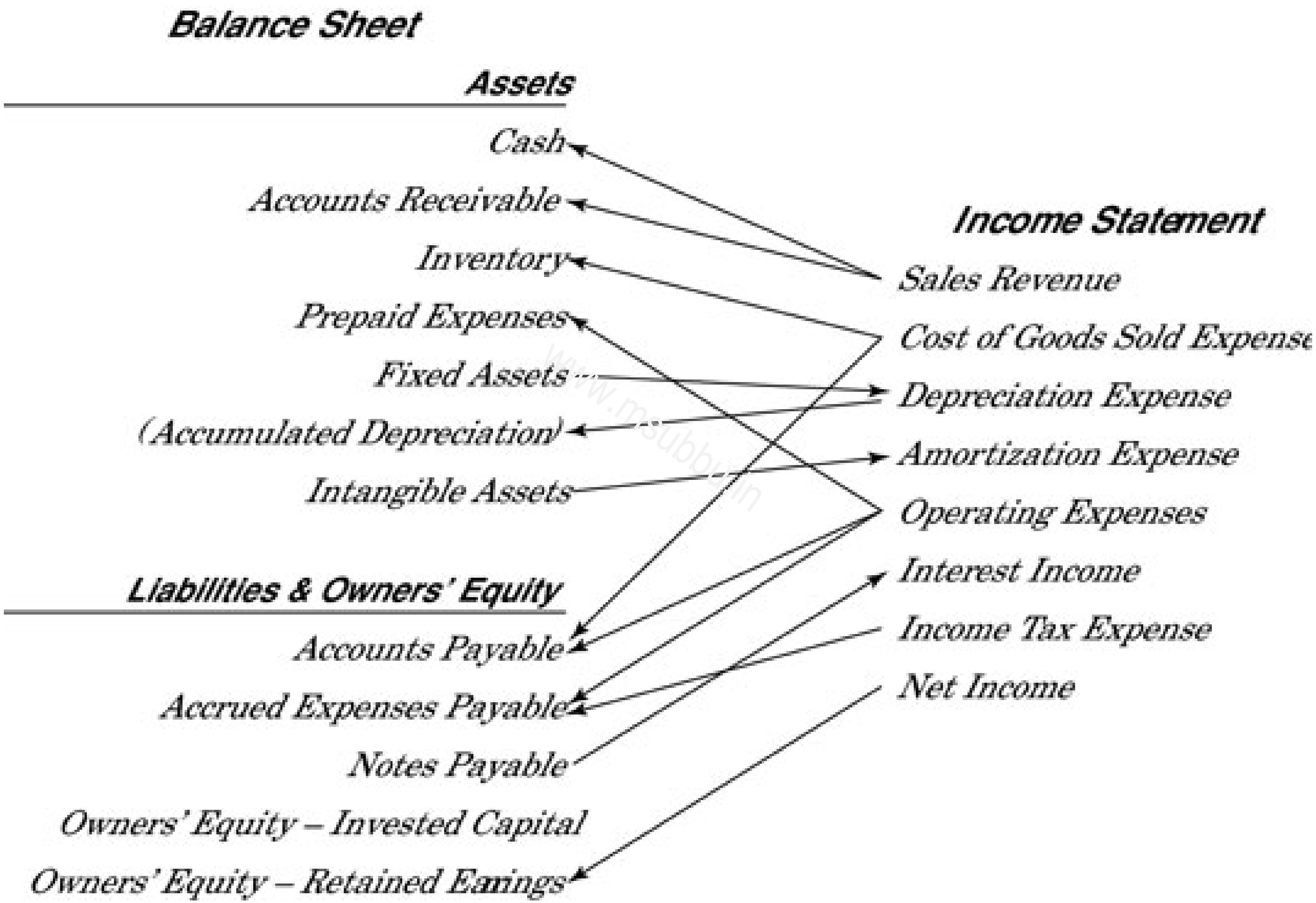
Adjusted trial balance - June 30, 2007			
Item	G/L account	D	C
Prepaid expenses	10	1500	
Cash	11	36000	
Accounts receivable	14	1000	
Office supplies	15	2050	
Inventory	16	0	
Equipment	17	19000	
Accounts payable	41		16500
Loan	40		15000
Share capital	30		20000
Income	50		13500
Expenses	60	7617	
Accumulated depreciation	17/1		317
Salaries payable	43		1500
Accrued expenses	42		350
Balance		**67167**	**67167**

Balance sheet as of June 30, 2007	
Assets	
Prepaid expenses	1500
Cash	36000
Accounts receivable	1000
Office supplies	2050
Inventory	0
Equipment, cost	19000
Accumulated depreciation	(317)
Equipment, net book value	18683
Total assets	**59233**
Liabilities and owners' equity	
Liabilities	
Accrued expenses	350
Salaries payable	1500
Accounts payable	16500
Loan	15000
Total liabilities	***33350***
Owners' equity	
Share capital	20000
Retained earnings	5883
Total owners' equity	***25883***
Total liabilities and owners' equity	**59233**

Income statement for June 2007	
Income	13500
Expenses	(7617)
Net profit for June	**5883**


Financial Statement
Source Document
Closing Entries
THE ACCOUNTING CYCLE
Journal
Adjusted Trial Balance
Ledger
Trial Balance
Adjustments

Connections between income statement and balance sheet accounts



Connections between income statement and balance sheet accounts.

Here's a quick summary explaining the lines of connection in the figure, starting from the top and working down to the bottom:

- Making sales (and incurring expenses for making sales) requires a business to maintain a working cash balance.
- Making sales on credit generates accounts receivable.
- Selling products requires the business to carry an inventory (stock) of products.
- Acquiring products involves purchases on credit that generate accounts payable.
- Depreciation expense is recorded for the use of fixed assets (long-term operating resources).
- Depreciation is recorded in the accumulated depreciation contra account (instead decreasing the fixed asset account).
- Amortization expense is recorded for limited-life intangible assets.

-contd..

- Operating expenses is a broad category of costs encompassing selling, administrative, and general expenses:
  - Some of these operating costs are prepaid before the expense is recorded, and until the expense is recorded, the cost stays in the prepaid expenses asset account.
  - Some of these operating costs involve purchases on credit that generate accounts payable.
  - Some of these operating costs are from recording unpaid expenses in the accrued expenses payable liability.
- Borrowing money on notes payable causes interest expense.
- A portion (usually relatively small) of income tax expense for the year is unpaid at year-end, which is recorded in the accrued expenses payable liability.
- Earning net income increases retained earnings.

Complete the following balance sheet:

Cash	$100	Accounts payable	$200
Inventory	____	Notes payable	300
Gross plant and equipment	1,800	Long-term debt	____
Accumulated depreciation	____	Common equity	1,000
Net plant and equipment	1,500		
Total assets	$2,000	Total liabilities and equity	____

Cash	$100	Accounts payable	$200
Inventory	400	Notes payable	300
Gross plant and equipment	1,800	Long-term debt	500
Accumulated depreciation	(300)	Common equity	1,000
Net plant and equipment	1,500		
Total assets	$2,000	Total liabilities and equity	2,000

EXHIBIT 22.1 Fictitious Corporation Common Size Balance Sheets for Years Ending December 31

	1999		1998	
Asset Components				
Cash	3.6%		2.0%	
Marketable securities	1.8%		0.0%	
Accounts receivable	5.5%		8.0%	
Inventory	16.4%		10.0%	
Current assets		27.3%		20.0%
Net plant and equipment		63.5%		70.0%
Intangible assets		9.2%		10.0%
Total assets		100.0%		100.0%
Liability and shareholders' equity components				
Accounts payable	4.6%		4.0%	
Other current liabilities	4.6%		1.0%	
Long-term debt	36.4%		50.0%	
Total liabilities		45.4%		56.0%
Shareholders' equity		54.6%		44.0%
Total liabilities and shareholders' equity		100.0%		100.0%

Wal-Mart Stores Balance Sheet

Period Ending	Jan 31, 2002
Assets	
Current Assets	
Cash and cash equivalents	$2,161
Net receivables	2,000
Inventory	22,614
Other current assets	1,471
Total current assets	$28,246
Long-Term Assets	
Property plant and equipment	$45,750
Goodwill	8,595
Other assets	860
Total assets	$83,451

Wal-Mart Stores Balance Sheet (contd.)

Current Liabilities	
Payables and accrued expenses	$24,134
Short-term and current long term debt	3,148
Total current liabilities	$27,282
Long-Term Liabilities	
Long-term debt	$18,732
Deferred long-term liability charges	1,128
Minority interest	1,207
Total liabilities	$48,349
Stockholders Equity	
Common atock	$445
Retained earnings	34,441
Capital surplus	1,484
Other stockholder equity	(1,268)
Total stockholder equity	$35,102
Total liabilities and equity	$83,451

Wal-Mart Stores Income Statement

Period Ending:	Jan 31, 2002
Total Revenue	$219,812
Cost of Revenue	171,562
Gross Profit	$48,250
Selling General and Administrative Expenses	36,173
Earnings Before Interest and Taxes	$12,077
Interest Expense	1,326
Income Before Tax	$10,751
Income Tax Expense	3,897
Minority Interest	(183)
Net Income	$6,671

Selected Financial Ratios for Wal-Mart Stores

Ratio	2001
Return	
Basic earning power	$12,077/$83,451 = 14.47%
Return on assets	$6,671/$83,451 = 7.9%
Return on equity	$6,671/$35,102 = 19.00%
Liquidity	
Current ratio	$28,246/$27,282 = 1.04 times
Quick ratio	$5,628 /$27,282 = 0.21 times
Profitability	
Gross profit margin	$48,250/$219,812 = 21.95%
Operating profit margin	$12,877/$219,812 = 5.86%
Net profit margin	$6,671/$219,812 = 3.03%

Selected Financial Ratios for Wal-Mart Stores (contd.)

Activity	
Inventory turnover	$171,562/$22,618 = 7.59 times
Total asset turnover	$219,812/$83,451 = 2.63 times
Financial leverage	
Total debt-to-assets	$48,319/$83,451 = 58.90%
Total debt-to-equity	$48,319/35,102 = 1.38 times
Interest coverage	$12,077/$1,326 = 9.11 times

Example Financial Statements

Based on

2009-2010 Annual Report of

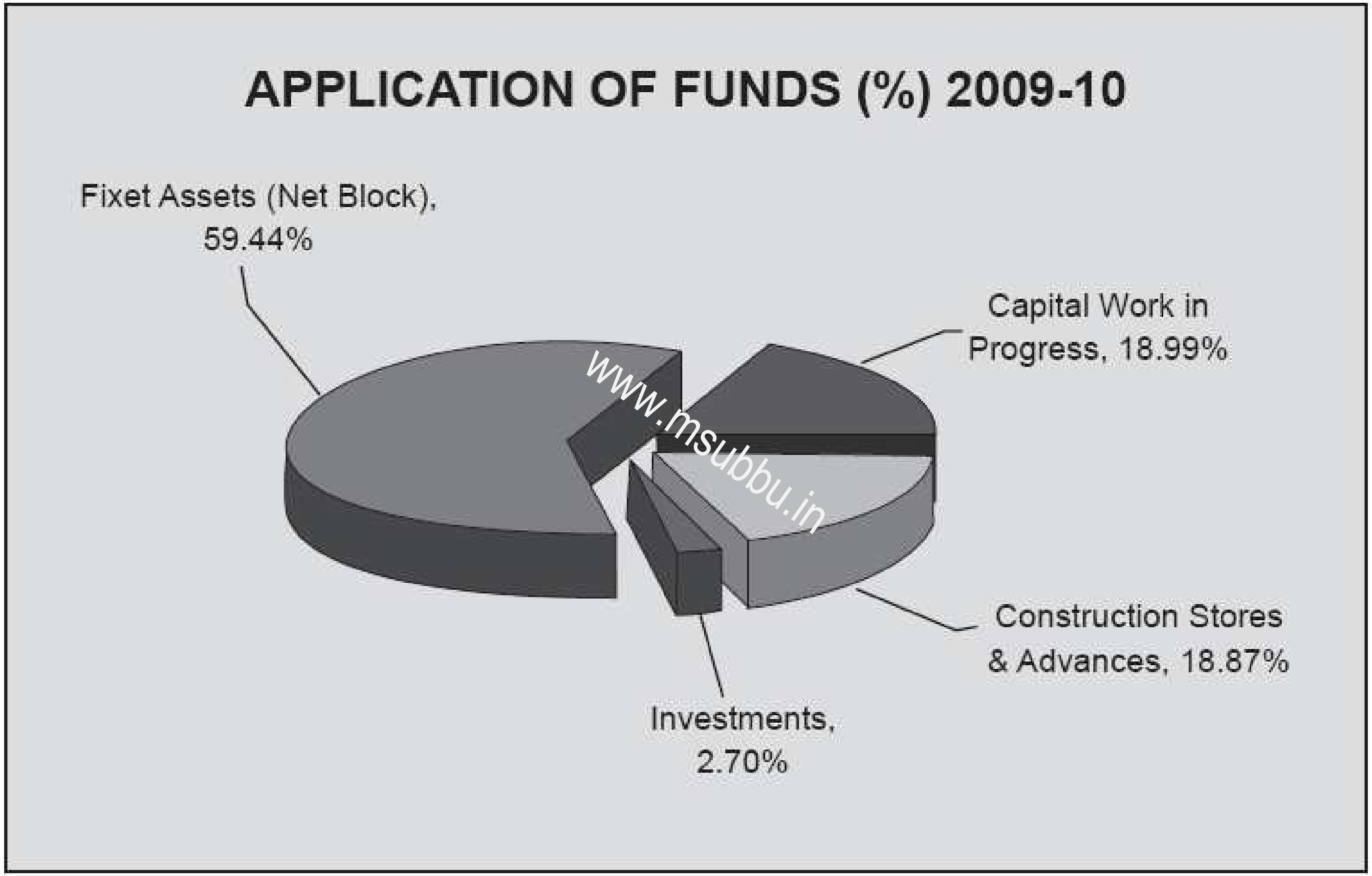
POWER GRID Corporation of India Ltd

Balance Sheet As At 31st March, 2010

POWER GRID Corporation of India Ltd

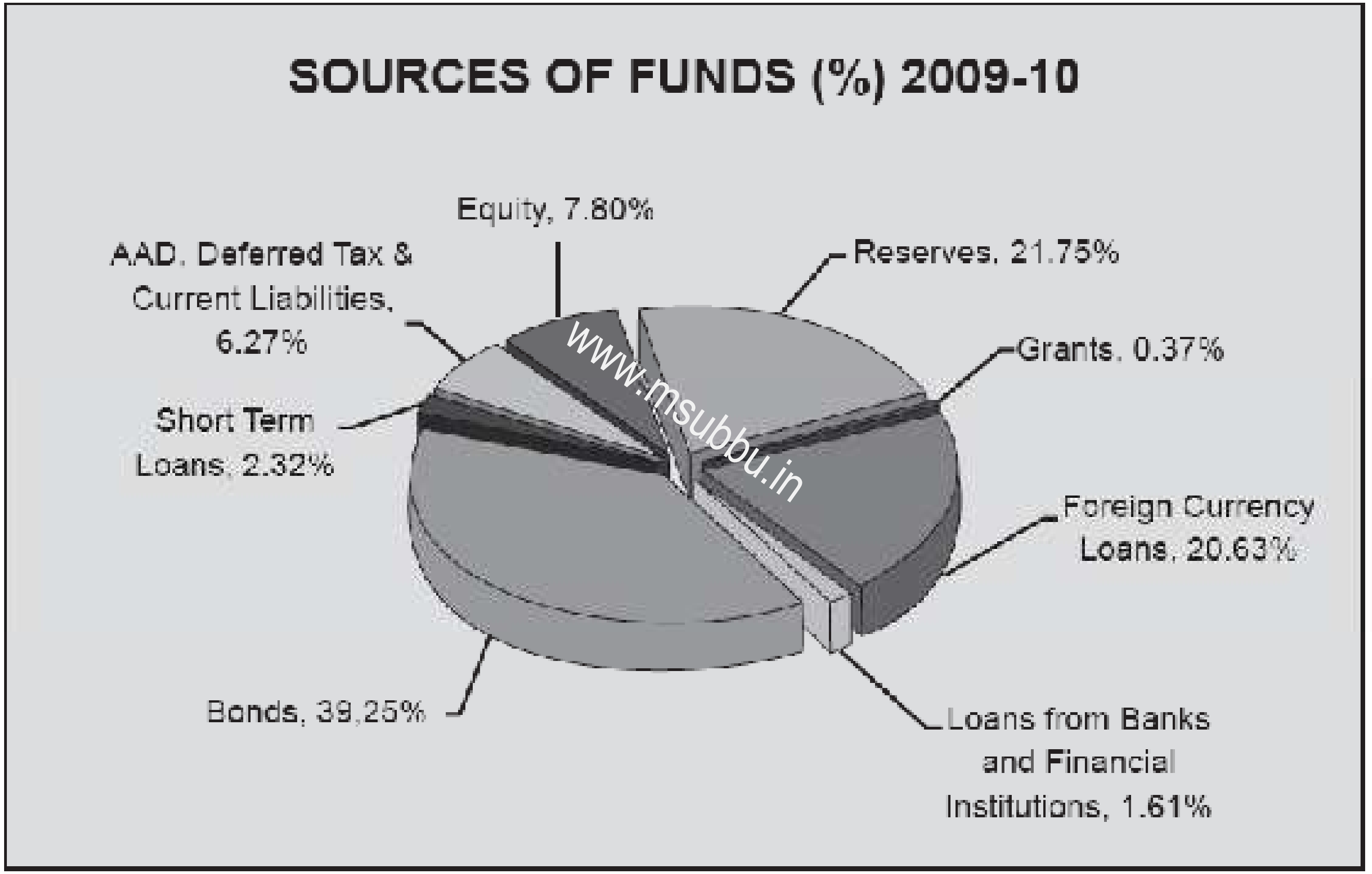
	Schedule No.			As at 31st March, 2010 M
SOURCES OF FUNDS				
Shareholders' Fund				
Share Capital	01		4208.84	
Reserves and Surplus	02		11733.06	
				15941.90
Deferred Revenue				
Advance Against Depreciation (AAD)	03		2213.63	
Grants in Aid	04		198.82	
				2412.45
Loan Funds				
Secured Loans	05A		31345.78	
Unsecured Loans	05B		3071.01	
				34416.79
Deferred Tax liability(Net)			4686.53	
Less: Recoverable			3983.02	
				703.51
TOTAL				53474.65
APPLICATION OF FUNDS				
Fixed Assets	06			
Gross Block			43202.28	
Less: Depreciation			11141.02	
Net Block			32061.26	
Capital Work-in-Progress	07		10242.37	
Construction Stores and Advances	08		10179.81	
				52483.44
Investments	09			1453.22
Current Assets, Loans & Advances				
Inventories	10	344.90		
Sundry Debtors	11	2214.86		
Cash and Bank Balances	12	3277.64		
Other Current Assets	13	487.52		
Loans and Advances	14	3302.40		
			9627.32	
Less: Current Liabilities & Provisions				
Current Liabilities	15	7634.60		
Provisions	16	2458.29		
			10092.89	
Net Current Assets				(465.57)
Miscellaneous Expenditure (to the extent not written off or adjusted)	17			3.56
TOTAL				53474.65

Assets Distribution - Example



Source: POWER GRID Corporation of India Ltd., Annual Report 2009-2010

Liabilities Distribution - Example



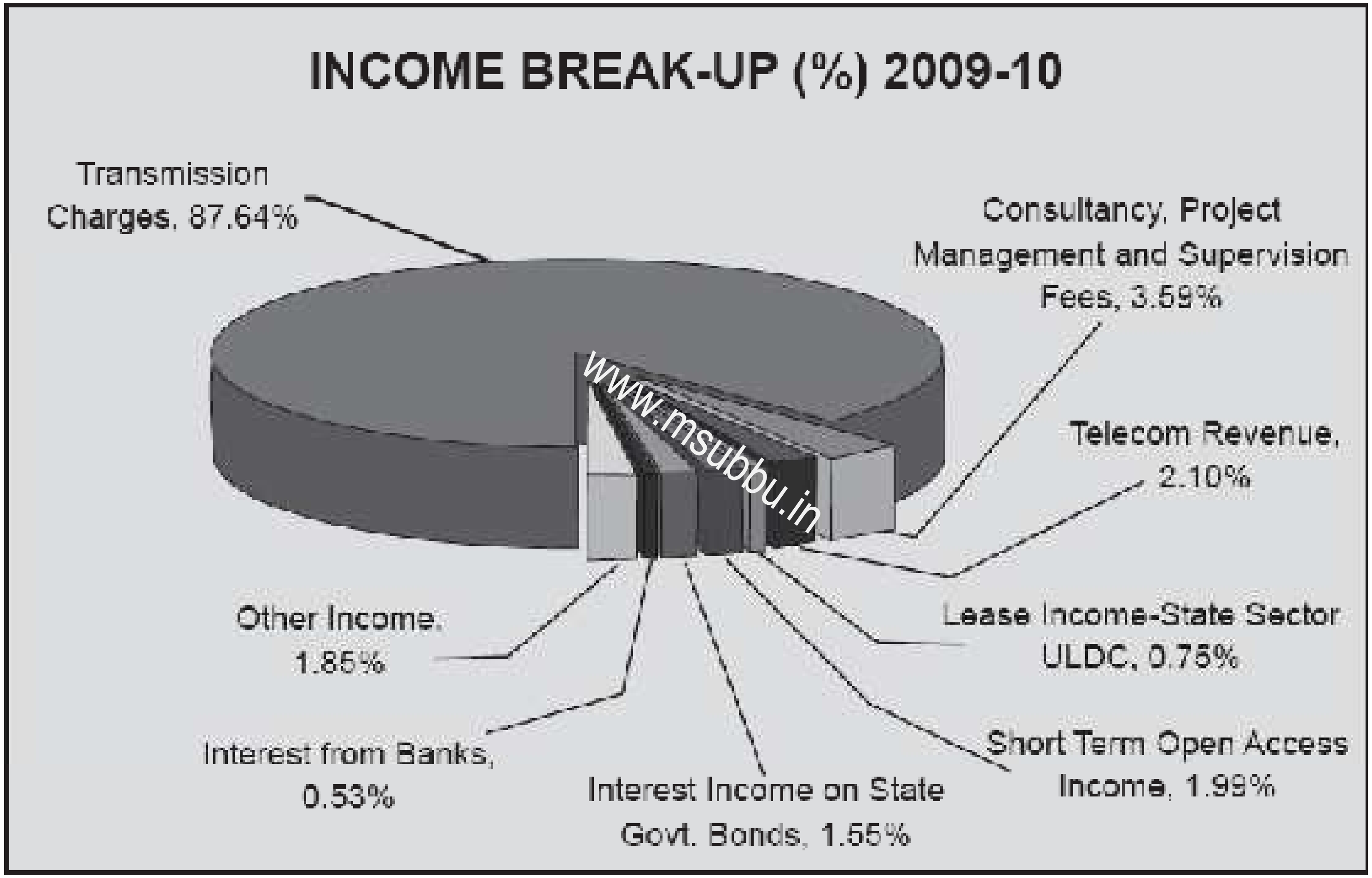
Source: POWER GRID Corporation of India Ltd., Annual Report 2009-2010

Profit and Loss Account for the year ended 31st March, 2010

		Schedule No.		For the year ended 31st March,2010
INCOME				
Revenue from Operations		19		**7127.45**
Provisions written back		20		**0.21**
Other Income		21		**375.92**
TOTAL				**7503.58**
EXPENDITURE				
Employees' Remuneration & Benefits		22	726.70	
Transmission, Administration and Other Expenses		23	507.43	
Depreciation		06	1979.69	
Provisions		24	22.15	
Interest and Finance Charges		25	1543.24	
Deferred Revenue Expenditure written Off			1.78	
TOTAL				**4780.99**
Profit for the year before tax and Prior period Adjustments				**2722.59**
Less: Prior Period Expenditure/(Income) (Net)		26		**96.27**
Profit Before Tax				**2626.32**
Less: Provision for Taxation	- Current Year		430.34	
	- Earlier Years		(8.43)	
				421.91
Fringe Benefit Tax	- Current Year		-	
	- Earlier Years		(1.50)	
				(1.50)
Profit after Current Tax				**2205.91**
Less:Provision for Deferred Tax				
Total Deferred tax Liability			225.02	
Less: Recoverable from benificiaries for arrears of earlier years			60.05	
				164.97
Profit after Tax				**2040.94**

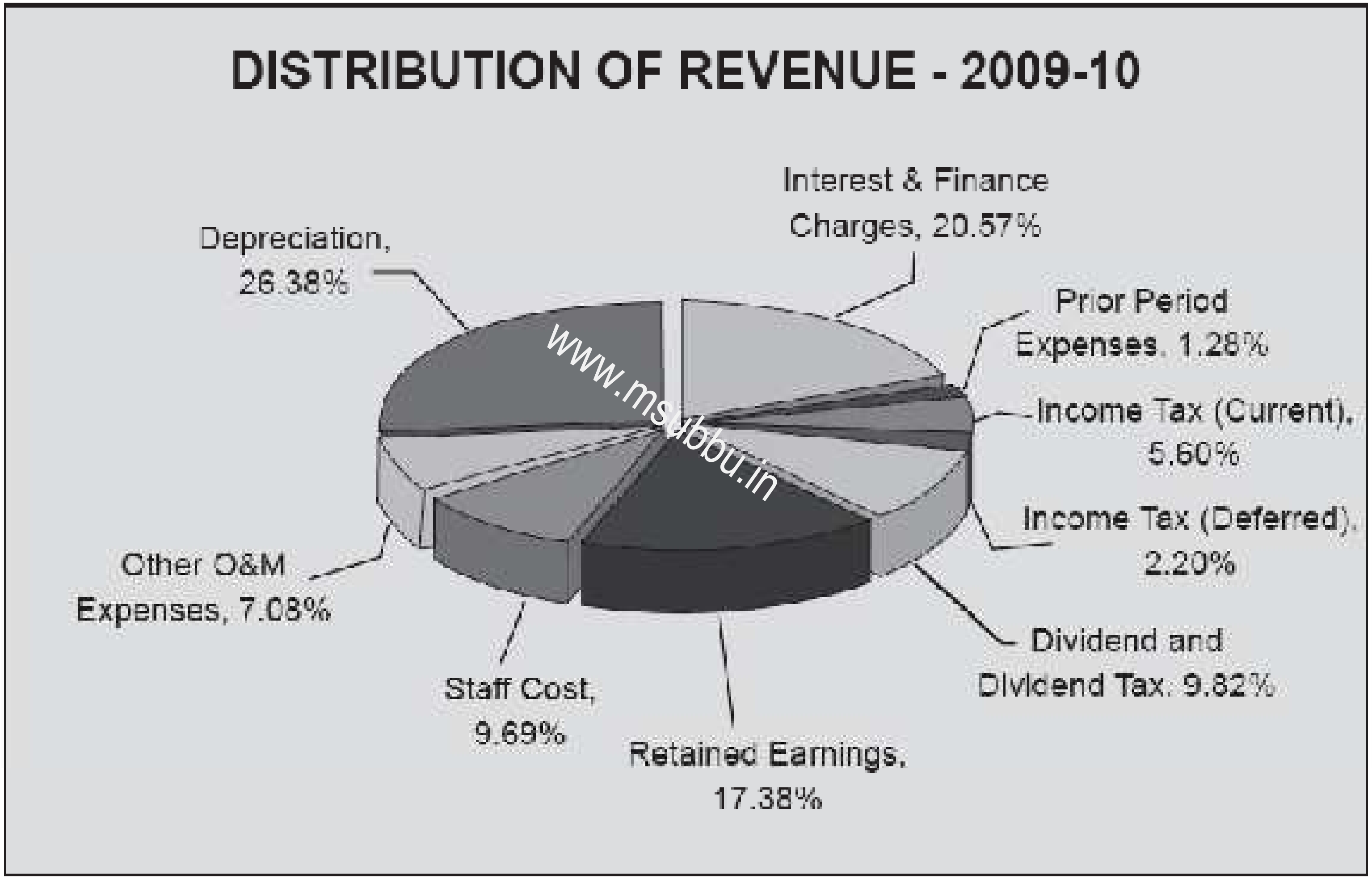
Profit after Tax	2040.94
Add:Balance of Profit brought forward	46.92
Add:Bond Redemption Reserve Written Back	166.19
Add:Withdrawal from STOA Reserve	81.97
Total Amount Available for Appropriation	2336.02
Appropriation	
Interim Dividend Paid	210.46
Corporate Dividend Tax Paid	35.77
Proposed Final Dividend	420.88
Provision for Corporate Dividend Tax	69.90
Transfer to Self Insurance Reserve	37.75
Transfer to Bonds Redemption Reserve	630.13
Transfer to STOA Reserve	81.97
Transfer to LDC Development Reserve	16.44
Transfer to CSR Activities Reserve	8.39
Transfer to General Reserve	800.00
Balance of Profit carried over to Balance Sheet	24.33
	2336.02

Income Contributions - Example



Source: POWER GRID Corporation of India Ltd., Annual Report 2009-2010

Expenses Distribution - Example



Source: POWER GRID Corporation of India Ltd., Annual Report 2009-2010