

DS3000: Entrepreneurship & Management functions

Session 6

<https://sites.google.com/a/iiitdm.ac.in/sudhirvs/courses/entrepreneurship-management>



INDIAN INSTITUTE OF INFORMATION TECHNOLOGY,
DESIGN AND MANUFACTURING,
KANCHEEPURAM

- Dr Sudhir Varadarajan
- Dr Suresh Varadarajan

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Introduction to Finance & Accounting

Income Statement (P&L) and Balance Sheet

Product Costing

Key Financial Ratios



Financial Management and its significance

Financial management is the process of planning, organizing, directing, and controlling the financial resources of a company. It is an essential function for any business, regardless of size or industry.

Significance of Financial Management

- To ensure the company's financial health:
- To make sound investment decisions:
- To maximize profits:
- To comply with regulations:

Key Finance Functions

- Financial management involves three key decisions
- Financing decision: From where should the funds be obtained? best mix - capital structure
- Investment decision: On what projects should funds be spent? Capital investment
- Dividend decision: How much of the earnings should be paid to shareholders and how much should be retained for future growth?

What is accounting?

- Accounting is the systematic process of identifying, measuring, classifying, processing and communicating financial information pertaining to business
- Three branches of accounting
 - Cost accounting (product level), Financial Accounting (firm level), Management Accounting
- Cash based accounting
 - Typically used by very small companies
 - The company records a sale whenever it receives cash for a product or a service and records an expense whether it issues a check
- Accrual accounting
 - A little more complex and used by many firms
 - The company records a sale whenever it delivers a product or a service, not when cash changes hands
 - Gives a more accurate picture of the profit

Important Financial Statements

- In order to understand the health of a company and find ways to optimize its profitability, managers need to find the right combination of controlling costs, improving sales and utilizing assets effectively
- To learn all these, managers rely primarily on three statements:
 - the Income Statement (also called as P&L - Profit and Loss account)
 - the Balance Sheet
 - the Cash Flow statement
- All companies, whether public or private have to maintain financial statements (for regulatory reasons)
- Financial statements have to follow a general format (individual line items may vary depending on the nature of the product or business) – Generally Accepted Accounting Principles (GAAP) - US

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Income statement – gives a picture of profit

- It begins with the company's revenue or total sales during the period (top line)
- It then lists all the various costs, including
 - cost of making the goods or delivering the services
 - overhead expenses
 - taxes
- When the cost is subtracted from revenue, what is left in the bottom line is the net income or profit

CONDENSED CONSOLIDATED STATEMENTS OF INCOME (in millions) - Trimble				
	Second Quarter of		First Two Quarters of	
	2016	2015	2016	2015
Revenue:				
Product	\$ 407.0	\$ 394.6	\$ 800.6	\$ 795.2
Service	109.7	105.7	211.3	206.6
Subscription	92.9	85.5	180.7	166.6
Total revenue	609.6	585.8	1192.6	1168.4
Total cost of sales	294	281.9	576.4	557.3
Gross margin	315.6	303.9	616.2	611.1
Gross margin (%)	0.518	0.519	0.517	0.523
Total operating expense	275.1	267.9	545.8	535.6
Operating income	40.5	36	70.4	75.5
Total non-operating income (expense), net	-2.2	-0.2	-2.7	4.5
Income before taxes	38.3	35.8	67.7	80
Income tax provision	2.7	10	12.4	20.2
Net income	35.6	25.8	55.3	59.8

Where is the revenue coming from?

Revenue by Type (GAAP)*

	Fiscal Year 2020	Three Months Ended	
		Q1 2021	Q2 2021
Hardware	\$ 1,318.9	\$ 391.1	\$ 441.7
Software	509.1	148.3	153.2
Recurring	1,160.8	305.7	311.1
Professional Service and Other	158.9	41.4	39.2
Total Company	\$ 3,147.7	\$ 886.5	\$ 945.2

Where is the revenue coming from?

Revenue by Segment (Non-GAAP)**

Buildings and Infrastructure	\$	294.7	\$
Geospatial		161.2	
Resources and Utilities		159.5	
Transportation		189.1	
Total Company	\$	804.5	\$

Revenue by Geography (Non-GAAP % of Total)**

North America	52 %
Europe	31 %
Asia Pacific	12 %
Rest of World	5 %
Total Company	100 %

Key Expenses

Cost of goods sold (Production cost)

- Includes raw material, labor and any other costs directly attributable to production
- Production overheads are also included in the same

Operating expenses

- Also known as SG&A (Sales, General and Administration) – overhead
- Includes salaries of administrative employees, rents, sales & marketing expenses and others not directly attributable to manufacturing a product / service

Depreciation /amortization expenses

- It is a way of estimating the cost of fixed assets that last a relatively long time
- Simple straight-line method vs progressively lower rates

Operating expense:	Q2 2016	Q2 2015	2016 (Q1+Q2)	2015 (Q1+Q2)
Research and development	92	84.5	179.7	171.7
Sales and marketing	97.4	96.2	194.1	192.7
General and administrative	65.6	64.2	133.9	128.9
Restructuring charges	4.5	5.2	6.3	6.3
Amortization of purchased intangible assets	15.6	17.8	31.8	36
Total operating expense	275.1	267.9	545.8	535.6



Balance Sheet – a snapshot of financial position of the company

- A balance sheet shows
 - What the company owns (its assets),
 - What it owes (its liabilities),
 - And the difference between them (called owner's or shareholder's equity)
- The left and right side of the balance sheet should always be equal

$$\text{Assets} = \text{Liabilities} + \text{Owner's equity}$$

- Balance sheet data is most helpful when compared to a previous year. It will reveal whether the firm has accumulated assets and created value for its owner

Types of Assets and Liabilities

Assets

- Current Assets
 - Cash and marketable securities
 - Accounts receivable (what customers owe as of balance sheet's date)
 - Inventory & any Advances (prepaid expenses)
- Fixed Assets (long-term assets) - depreciation
 - Less liquid
 - Property, Plant & Equipment (PPE)

Liabilities

- Current Liabilities (short-term)
 - Accounts payable (to suppliers)
 - Short-term notes
 - Salaries and income taxes
- Long-term Liabilities
 - Loans
 - Debt

Working Capital = Current Assets – Current Liabilities

Balance sheet of Trimble as of Q2, 2016

Assets	Q2 2016	FY End 2015	Liabilities and Shareholders' Equity	Q2 2016	FY End 2015
Current assets:			Current liabilities:		
Cash and cash equivalents	\$ 231.9	\$ 116.0	Short-term debt	\$ 130.3	\$ 118.3
Accounts receivable, net	377.5	361.9	Accounts payable	106.7	99.8
Other receivables	36.1	14.9	Accrued compensation and benefits	101.3	98.9
Inventories	241.7	261.1	Deferred revenue	280.5	234.6
Other current assets	49.6	44.5	Accrued warranty expense	17.8	18.5
Total current assets	936.8	798.4	Other current liabilities	84.4	90.8
Property and equipment, net	152	159.2	Total current liabilities	721	660.9
Goodwill	2,107.90	2,106.40	Long-term debt	594.7	611.4
Other purchased intangible assets, net	408.9	487.1	Non-current deferred revenue	34.7	29.6
Other non-current assets	146	129.6	Deferred income tax liabilities	48.1	51.7
Total assets	\$ 3,751.6	\$ 3,680.7	Other non-current liabilities	108.4	106.5
			Total liabilities	1,506.90	1,460.10
			Shareholders' equity:		
			Common stock	1,276.40	1,238.30
			Retained earnings	1,128.10	1,148.20
			Accumulated other comprehensive loss	-159.7	-166.8
			Total Trimble Navigation Ltd shareholders' equity	2,244.80	2,219.70
			Noncontrolling interests	-0.1	0.9
			Total shareholders' equity	2,244.70	2,220.60
			Total liabilities and shareholders' equity	\$ 3,751.6	\$ 3,680.7



Company Financial Data Analysis

<https://www.moneycontrol.com/financials/tataconsultancyservices/balance-sheetVI/TCS#TCS>

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Standalone Consolidated Print/Copy to Excel: Financial Ratios 00

BALANCE SHEET OF TATA CONSULTANCY SERVICES (in Rs. Cr.)

	MAR 23	MAR 22	MAR 21	MAR 20	MAR 19
	12 mths	12 mths	12 mths	12 mths	12 mths
EQUITIES AND LIABILITIES					
SHAREHOLDER'S FUNDS					
Equity Share Capital	366.00	366.00	370.00	375.00	375.00
TOTAL SHARE CAPITAL	366.00	366.00	370.00	375.00	375.00
Reserves and Surplus	74,172.00	76,807.00	74,424.00	73,993.00	78,523.00
TOTAL RESERVES AND SURPLUS	74,172.00	76,807.00	74,424.00	73,993.00	78,523.00
TOTAL SHAREHOLDERS FUNDS	74,538.00	77,173.00	74,794.00	74,368.00	78,898.00
NON-CURRENT LIABILITIES					

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Standalone Consolidated Print/Copy to Excel: Balance Sheet (New)

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Product Economics

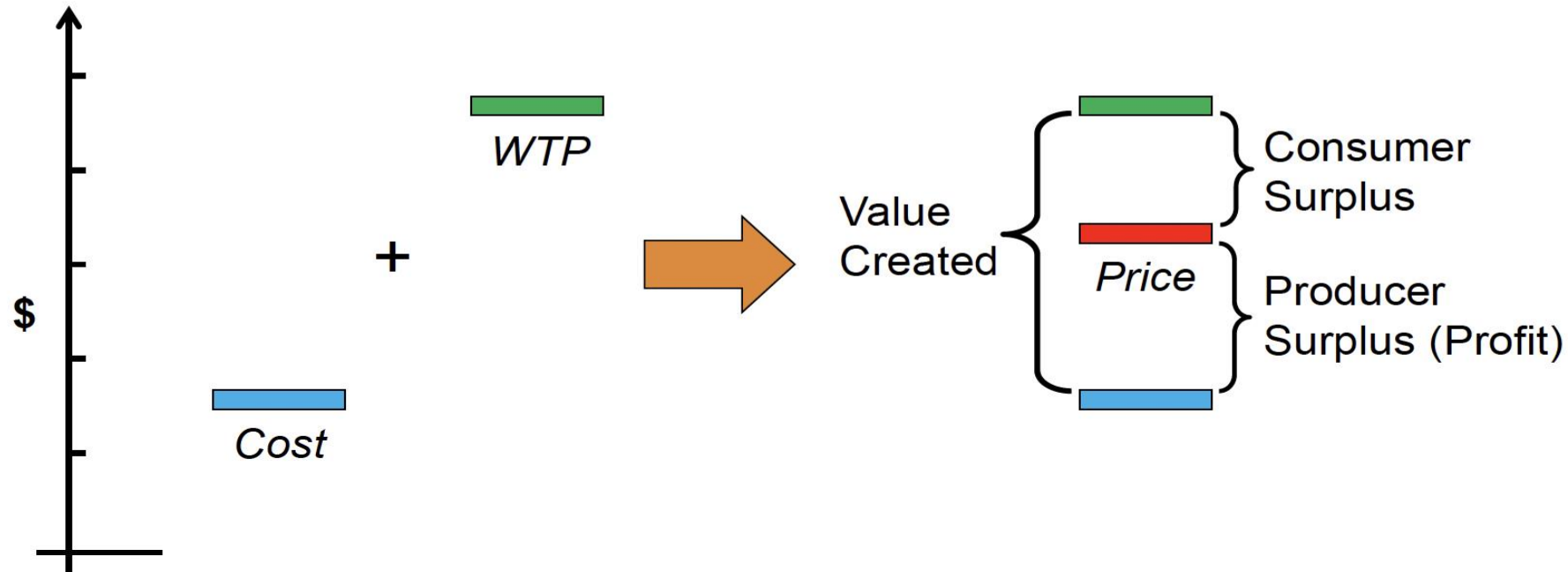
Price is a Policy.....

Cost is a Fact

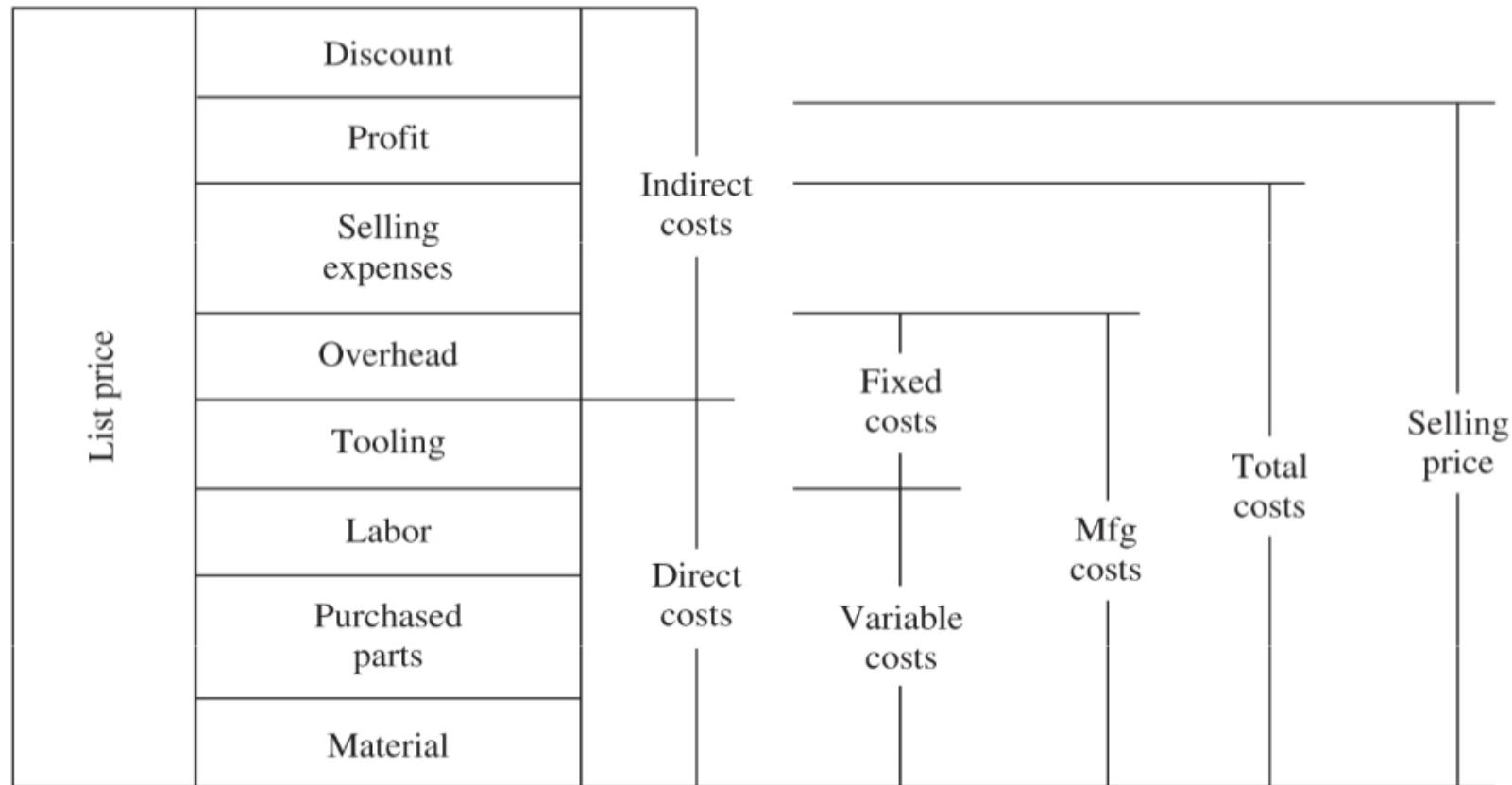


Cost and Value

- ▶ *Production cost* (necessary but not sufficient by itself)
 - + *Willingness to pay* (customer value)
 - *Value creation* potential of product



Product Cost (Roll up method Illustration)



Reproduced with permission from Prof.David Ullman, The Mechanical Design Process



Cost Engineering.....(1 / 2)

“A cost-focused methodology that supports the design and implementation of specifications at the lowest total cost of ownership, across the end-to-end lifecycle.”

Source”: <https://www.mckinsey.com/business-functions/operations/our-insights/making-cost-engineering-count>



Cost Engineering.....(2/2)

- **“Cost-focused.”** Cost-engineering activities are focused on bottom-line impact. If they succeed, the business will save money.
- **“Supports.”** While bottom-line impact is the ultimate outcome, cost engineering must also serve as an enabler within the organization. It brings stakeholders from multiple functions together to work collaboratively on the design and implementation of specifications.
- **“Lowest total cost of ownership.”** Cost engineering is holistic in scope, considering all types of cost (e.g., capex and opex, together with recurring and non-recurring costs) across the entire value chain.
- **“End-to-end lifecycle.”** Cost engineering is not a standalone activity; it must be an integral part of the full produce lifecycle, from initial ideation to ultimate disposal or recycling

Target Costing: Definition

Target Costing **is defined as** a cost management tool for reducing the overall cost of a product over its entire life-cycle with the help of production, engineering, research and design.



Target costing

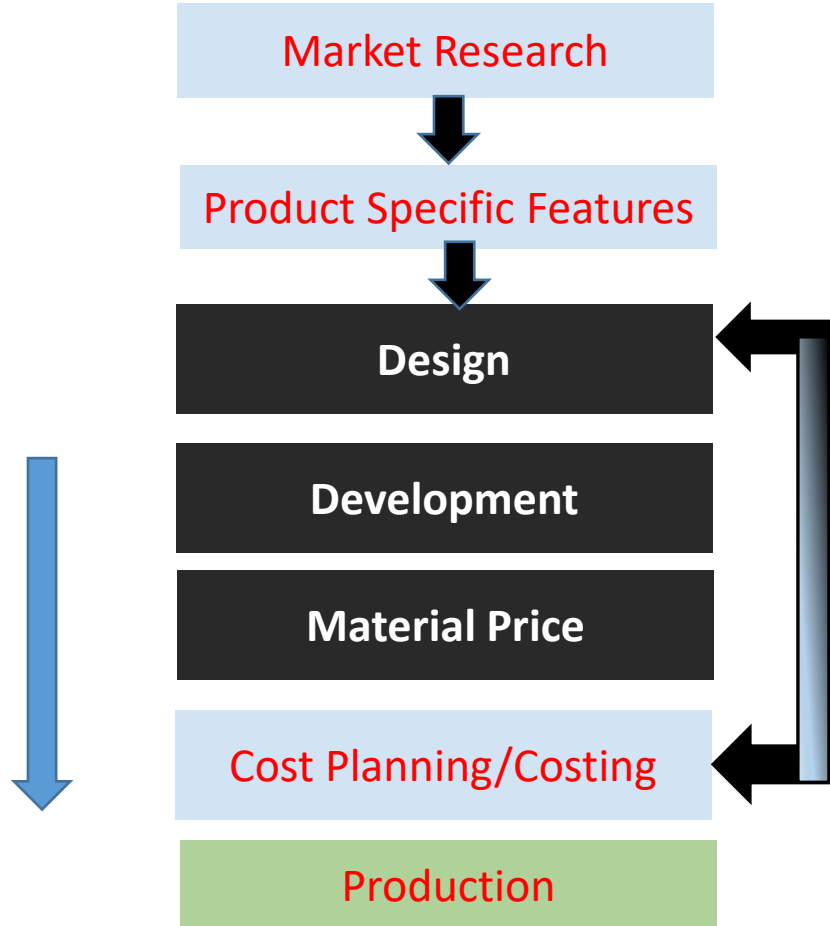
Target costing represents a fundamentally different approach. It is based on three premises:

1. orienting products to customer affordability or market-driven pricing
2. treating product cost as an independent variable during the definition of a product's requirements
3. proactively working to achieve target cost during product and process development..

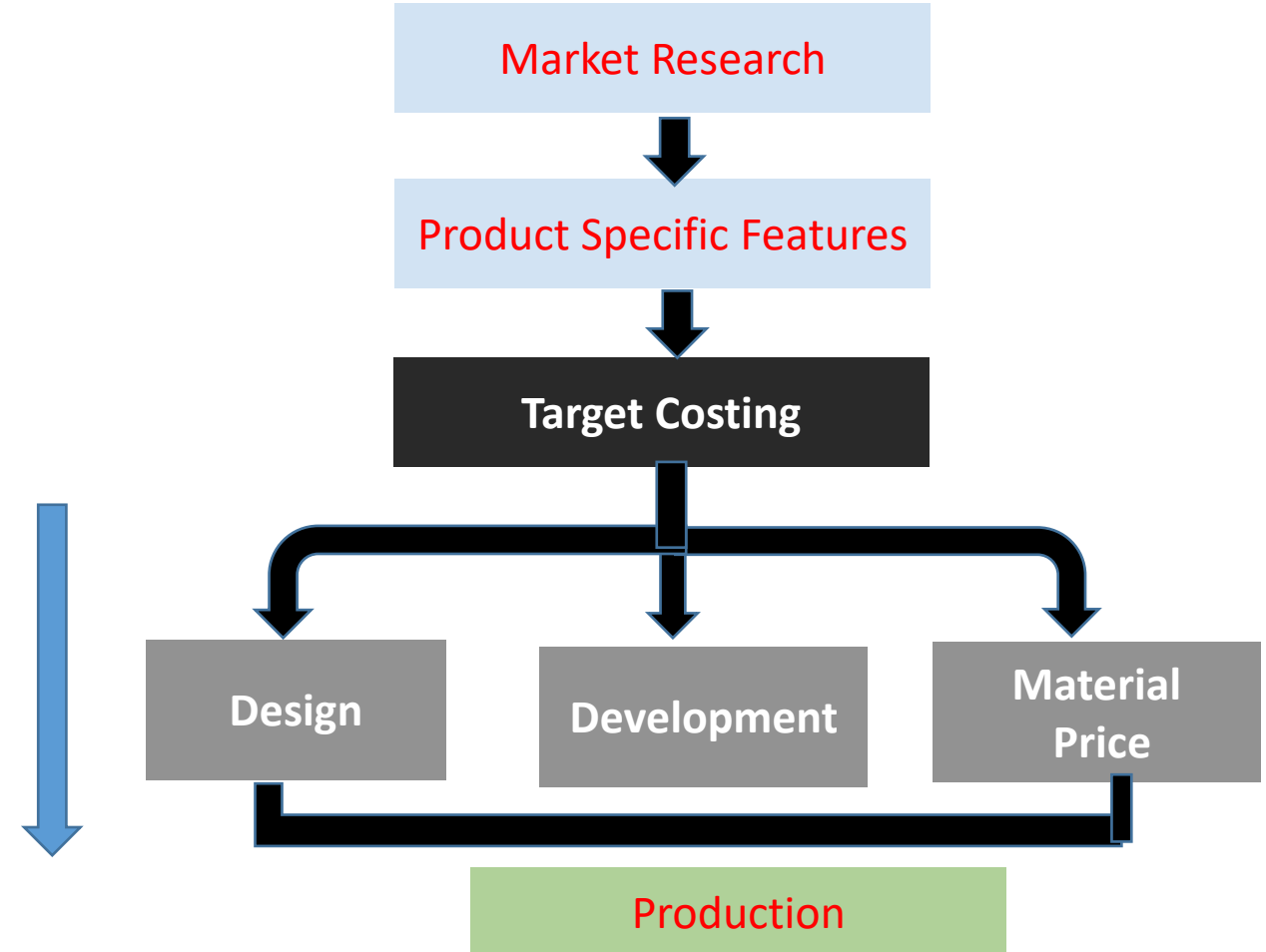


Traditional Product Costing vs Target Costing

Traditional Product Cost Management



Target Cost Management



Target Costing: Motivation

- Global competition with mobile capital
- Technology leadership no longer provides lasting competitive edge
- Pressure for lower prices
- Shorter product life cycles
- Demand for custom products

Target costing is particularly useful in industries that have low profit margins and high competition.



Categories of Costs: Variable and Fixed

- We can divide all costs into two broad categories:
 - *Product Costs (variable cost):*
 - are those costs that vary with each unit of product made. Material cost and labor cost are good examples
 - *Period costs (fixed cost):*
 - derive their name from the fact that they occur over a period of time regardless of the amount (volume) of product that is made or sold.

Question:

- In a Large software product development, the firm uses multiple third-party software tools /software during the product development. How should the software usage cost be considered in the total cost calculation? (either as Fixed cost or Variable cost)

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What is a financial ratio?

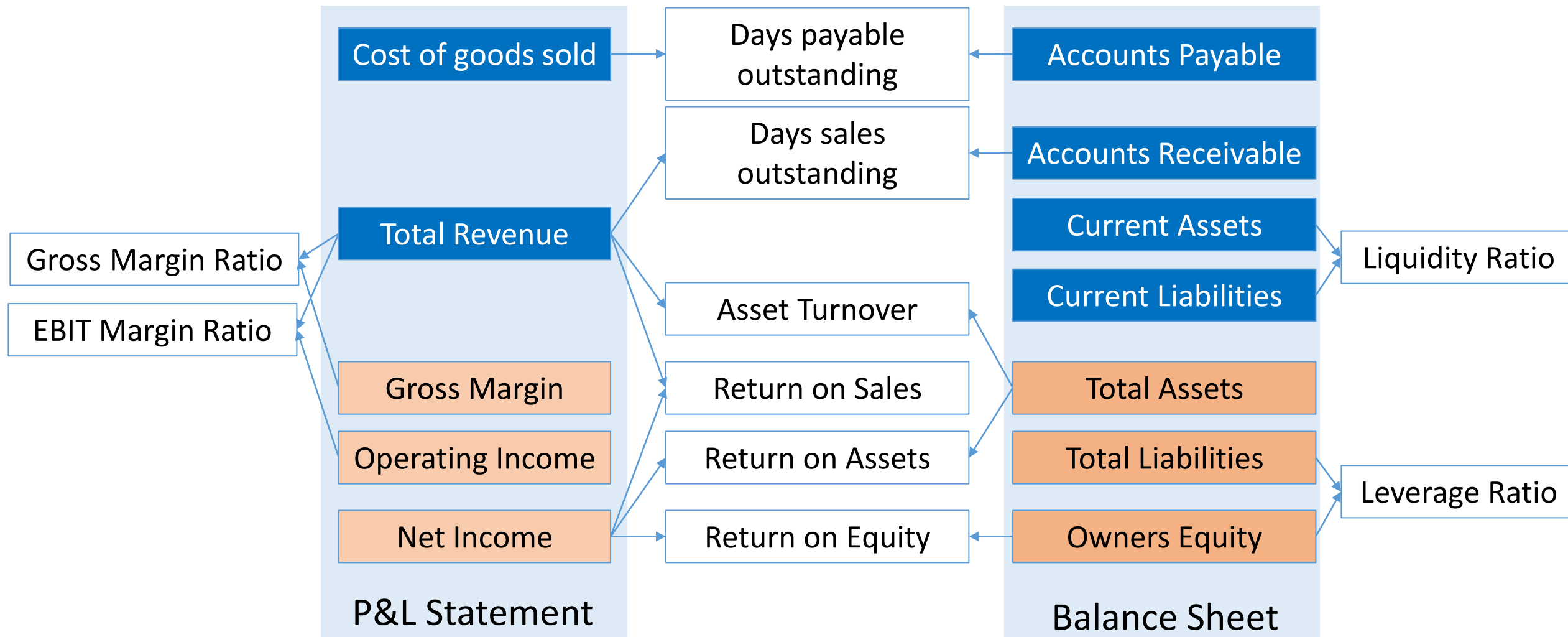


A financial ratio is just two numbers from the financial statements expressed in relation to each other



Ratios can be a useful way to compare one firm's performance with others within an industry

Ratios in a nutshell



Profitability ratios

Gross profit margin = gross profit / revenue

- It reflects the profitability of the company's products or services without overheads

EBIT margin = Operating profit / revenue

- Indicates how profitable a company's operating activities are

Return on Sales (Net profit margin) = Net income / revenue

- Indicates how much profit does a company earn for every sales rupee

Return on Assets (ROA) = Net income / Total Assets

- Indicates how efficiently the company is using its assets to generate profit

Return on Equity (ROE) = Net income / Owner's equity

- It shows how much profit the company is generating as a % of owner's investment

Efficiency Ratios

Asset turnover =
 $\text{Revenue} / \text{Total Assets}$

- Higher the number, better a company is at employing assets to generate revenue

Days sales outstanding =
 $\text{Accounts receivable} / \text{revenue per day}$

- This ratio tells you how long it takes a company to collect what it is owed
- A company that takes 45 days to collect its receivables needs significantly more working capital than one that takes 20 days to collect

Days payable
outstanding = $\text{Accounts payable} / \text{cost of goods sold per day}$

- How many days it takes a company to pay its suppliers
- A higher number means more cash, it can also spoil relationships with suppliers

Inventory days = $\text{Average inventory} / \text{Cost of goods sold per day}$

Liquidity & Leverage Ratios

Short Term Liquidity Ratios

Current ratio = Total current assets / Total Current liabilities

- Ability of the company to pay its bills – higher ratio is better
- Popular with lenders (also called banker's ratio)

Quick ratio = [current assets-inventory] / current liabilities

- Ability of the company to deal with its liabilities quickly without liquidating inventory

Description	Degree of Liquidity
Cash and Cash Equivalent	Most Liquid
Accounts Receivable	Less Liquid
Inventory	Least Liquid

Leverage Ratios (Long Term Solvency Ratio)

Debt to equity = Total liabilities / Owner's equity

- It shows how much a company has borrowed compared with the money its owners have invested
- High leverage is a concern, and can hurt the firm if its sales is not growing

Interest coverage = EBIT / Interest expense

- Measures the company's margin of safety – can the company makes its interest payments from its operating profit?

Question

Suppose there are two companies, and they have the same current ratio, but one with more inventory and another one maintains large accounts receivable.

Are the liquidities of these two companies same. ? Explain

Assets	Q2 2016	FY End 2015	Liabilities and Shareholders' Equity	Q2 2016	FY End 2015
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Analyzing financial statements

Compare numbers with what's typical in each industry

Compare statements of similar sized companies

Watch for trends over time

Key measures used to assess the expected stock value of a company

- Earnings per share = $\text{Net income} / \text{number of shares outstanding}$
- Price to earnings ratio (P/E) = $\text{current price of a share} / \text{previous 12 months earnings per share}$
- Growth indicators
- Productivity measures



Things to find out before next class

- What is Valuation?
- What are the most valued Indian companies as of August 2023?

Additional Notes



Fixed vs Variable cost for software product usage

- **As a fixed cost:** If the software is purchased outright, the cost can be amortized over the lifetime of the product. This means that the cost is spread out evenly over the years, rather than being incurred all at once.
- **As a variable cost:** If the software is leased or subscription-based, the cost can be directly attributed to the number of units produced. This means that the cost will increase as more units are produced.
- **As a semi-variable cost:** If the software is used for both development and production, the cost can be allocated to each based on a predetermined formula. For example, the cost of the software could be allocated 50% to development and 50% to production.

additional factors to consider when determining how to account for the cost :

of users, Whether software used for development or development and Production

Duration of the project