

MGT705 – Advanced Cost and Management Accounting

Lecture 1 – 45 Slides

- At 5000 units output level for the company, fixed cost per unit for the intermediate product will be Rs 12 per unit (60000 fixed cost / 5000 units), giving a full cost of Rs 23 (Rs 12 plus Rs 11 variable cost).
- If the transfer price is set at Rs 23 per unit (Rs 23000 per 1000 batch) receiving division will expand output as long as net marginal revenue exceeds transfer price.
- This will be 4000 units where the net marginal revenue is Rs 33000. At 5000 units net marginal revenue is Rs 13000 and manager will not choose to expand output to 5000.

An illustration of transfer pricing

- At 4000 units the revenue of the supplying division will be Rs 92000 (4000 x 23) but the cost shown for the Thar division will be Rs 104000 (60000 fixed cost + 44000 variable).
- Thar division will report a loss as fixed costs have not been fully recovered.
- Hence this transfer price is neither suitable for performance evaluation nor optimal output decisions.
- We can conclude from this illustration that to ensure overall company optimality the transfer price must be set at the marginal cost of the supplying division.

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LECTURE # 25

Domestic transfer pricing recommendations

1: Where a competitive market exists for the intermediate product, the market price (less any adjustments to reflect additional selling and distribution expense) should be used as the transfer price.

- If supplying division has spare capacity, receiving division should be instructed to purchase the agreed quantities from the supplying division to ensure overall optimality.

2. where no external market exists for the intermediate product, transfers should be made at the long run marginal costs.

- The long run marginal cost should consist of two elements: a short run marginal cost per unit of product and a fixed lump sum fee based on budgeted use of average capacity of the supplying division.
- This is to ensure the receiving division incorporates the full cost of the supplying division's resources.

3. Where an imperfect market for the intermediate product exists, and a small number of transactions are involved, a negotiated transfer pricing system is likely to be most suitable.

- Some external benchmarking is likely to be used to enable a meaningful bargaining process to take place.

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- 4. where cost based transfer prices are used, standard costs and not actual costs per unit should be used. If actual costs are used, supplying division will be able to pass on the cost of any inefficiencies to the receiving division.

International transfer pricing

- Supplying and receiving divisions may be located in different countries with different taxation rates, and the taxation rates in one country may be much lower than the other.
- It would be in the company's interest that most of the profits are located in the country with low tax rates.
- For example an organization manufactures products in country A which has a marginal tax rate of 25% and sells those products in country B where marginal tax rate is 40%. Company will use highest possible transfer price so that country B will have higher costs and lower profits. The opposite for country A.
- In many multi-national organizations, the taxation issues outweigh other transfer pricing issues and the dominant consideration is the minimization of global taxes.
- Taxation authorities are aware that companies can use the transfer pricing system to manipulate the taxable profits. The arms length principle is used:
 - Similar transactions involving unrelated parties
 - Deduction of profit from selling price
 - Cost-plus method.

Example

- X Ltd, a manufacturing company has two divisions: Division A and Division B.
- Division A produces one type of product, Xeno, which it transfers to division B and also sells externally. Division B has been approached by another company which has offered to supply 2500 units of Xeno for Rs 35 each.
- The following details are available:
- Sales revenue

_ Sales to division B @ Rs 40	400,000
_ External sales @ Rs 45	270,000

Less:

Variable cost @ Rs 22	352,000
Fixed costs	<u>100,000</u>
Profit	<u>218,000</u>

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if division B decides to buy from the other company, what will be impact of the profits of division A and on X Ltd, assuming external sales of Xeno cannot be increased.

Solution

- The loss of contribution in division A from lost sales of 2500 @ Rs 18 (40 – 22) = Rs 45000.
- The impact on the whole company is:
 - external purchase cost (2500x35) = 87500
 - incremental cost of manufacture (2500x22) = 55000
 - Additional cost to company = Rs 32,500

Example

Effects of transfer pricing on Division and Company profits

- Division A of a large organization manufactures a single standardized product. Some of the output is sold externally whilst the remainder is sold to Division B. In Division B it is a subassembly in an manufacture of that Division's product. The unit costs of Division A's product are as follows:

– Direct material	4
– Direct labor	2
– Direct expenses	2
– Variable manufacturing expenses	2
– Fixed manufacturing expenses	4
– Selling and packing exp – variable	<u>1</u>
	<u>15</u>

Example...

- Annually 10000 units of the product are sold externally at the standard price of Rs 30.
- In addition to external sales, 5000 units are transferred annually to Division B at an internal transfer charge of Rs 29 per unit.
- This transfer price is obtained by deducting variable selling and packing expense from the external price.
- Division B incorporates the transferred-in goods into a more advanced product.

Example...

- The unit costs of this product are as follows:

– Transferred-in item (from div A)	29
– Direct material and components	23
– Direct labor	3

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– Variable overheads	12
– Fixed overheads	12
– Selling and packing exp –var	<u>1</u>
	<u>80</u>

Example...

- Division B's manager disagrees with the basis used to set the transfer price.
- He argues that the transfers should be made at variable cost plus an agreed (minimal) mark-up.
- He claims that his division is taking output that Division A would be unable to sell at the price of Rs 30.
- Partly because of this disagreement, a study of the relationship between selling price and demand has recently been made by the sales director. The resulting report contains:

Example....

- Division A

– Selling price	20	30	40
– Demand	15000	10000	5000
- Division B

– Selling price	80	90	100
– Demand	7200	5000	2800
- The manager of division B claims that the study supports his case.
- He suggests that a price of Rs 12 would give Division A a reasonable contribution to its fixed overheads while allowing Division B to earn a reasonable profit.
- He also believes that it would lead to an increase in output and an improvement in the overall company profits.

Example...

- Required:
 - (a) to calculate the effect that the transfer pricing system has had on the company's profits, and
 - (b) to establish the likely effect on profits of a transfer price of Rs 12, as suggested by the manager of Division B.

Solution...

- The variable cost per unit of output for sales outside the company are Rs 11 for the intermediate product and Rs 49 (10A + 39B) for the final product.
 - Selling and packing expense are not incurred for internal transfers.
 - Optimal output of intermediate product for sale on external market:
- | | | | |
|----------------------|--------|--------|--------|
| • Selling price | 20 | 30 | 40 |
| • Unit contribution | 9 | 19 | 29 |
| • Demand (units) | 15000 | 10000 | 5000 |
| • Total contribution | 135000 | 190000 | 145000 |
- Optimal output is 10000 units at a selling price of Rs 30

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Solution...

- Optimal output for final product
- | | | | |
|--------------------|-------|--------|--------|
| Selling price | 80 | 90 | 100 |
| Unit contribution | 31 | 41 | 51 |
| Demand (units) | 7200 | 5000 | 2800 |
| Total contribution | 23200 | 205000 | 142800 |
- Optimal output is 7200 units at a selling price of Rs 80.
- Optimal output of Division B based on transfer price of Rs 29.

Solution...

- Division B will regard transfer price as variable cost. Therefore total variable cost will be Rs 68 (29+39) and division B will calculate contribution as follows:

– Selling price (Rs)	80	90	100
– Unit contribution	12	22	32
– Demand units	7200	5000	2800
– Total contribution	86400	110000	89600

The management of Division B will choose output level of 5000 units at a selling price of Rs 90. This is sub-optimal for the company as a whole.

Solution...

- Profits for the company as a whole are reduced from Rs 223000 (7200 units) to Rs 205000 (5000 units).
- The Rs 205000 profits would be allocated as follows:
- Division A Rs 95000 (5000 @ (29-10))
- Division B Rs 110000

Solution...

- (b) at a transfer price of Rs 12, the variable cost per unit produced in Division B will be Rs 51 (12+39).
- Division B will calculate the following contributions:

– Selling price	80	90	100
– Unit contribution	29	39	49
– Demand	7200	5000	2800
– Total contribution	208800	195000	137200

Solution...

- The manager of Division B will choose an output of 7200 units and sell at Rs 80. This is optimum level of output for the company as a whole.
- Division would obtain a contribution of Rs 14400 (7200x(12-10)) from internal transfer of the immediate product, and Division B would get a contribution of Rs 208,800.
- Total contribution for the company as a whole would be Rs 223200. Division A would also earn a contribution of Rs 190,000 from sale of intermediate product in the external market.

LECTURE # 26

Cost Management

- In some previous lectures features of traditional management accounting and mechanisms used to control costs were described.
- The focus was on comparing actual results with a pre-set standard (usually budget), and taking remedial action.
- The emphasis is on cost containment rather than cost reduction.
- Cost management focuses on cost reduction and continuous improvement rather than cost containment.
- Cost management consists of those actions that are taken by managers to reduce costs.
- Some of the actions are taken on the basis of information extracted from the accounting systems.
- Other actions are taken without the use of accounting information. They involve process improvements, where such opportunities have been identified.
- Ideally, the aim is to take action that will both reduce costs and enhance customer satisfaction.

Life-cycle costing

- Life-cycle costing estimates and accumulates costs over a product's entire life-cycle.
- This will determine whether profits earned from manufacturing, will cover costs incurred in the pre and post manufacturing stages.
- Life-cycle costing helps management to understand the cost consequences of developing a product.
- It helps identify areas in which cost reduction efforts are most likely to be effective.
- Most accounting systems report on a period by period basis, and product profits are not monitored over their life-cycles.
- Product life-cycle reporting involves tracing costs and revenues on a product by product basis over their life cycle.
- Three stages of a product life-cycle are
 - Planning and design stage
 - Manufacturing stage
 - Service and abandonment stage

Target costing

- We have looked at target costing as a mechanism for determining selling prices.
- As a cost management tool, target costing involves the following stages:

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- **Stage 1:** determine the target price which customers will be prepared to pay for the product.
- **Stage 2:** deduct a target profit margin to determine target cost.
- **Stage 3:** estimate actual cost of the product.
- **Stage 4:** if estimated actual cost exceeds target cost, investigate ways of driving down the actual cost.
- The first stage requires market research to determine customer perceived value. This will be based on its differentiation value compared to competing products, and the price of competing products.
- The target profit margin depends on the planned return on investment.
- A major feature of target costing is that a team approach is adopted to achieve the target cost. Team members include designers, engineers, purchasing, manufacturing, marketing and management accounting personnel.
- The aim during the product design process is to eliminate product functions that add cost, but which do not increase market price.
- The major advantage of target costing is that it is deployed during the design and planning stage. This way it can have maximum effect in determining the level of locked-in costs.
- If the target cost cannot be attained, the product should not be launched.
- Design teams should not be allowed to achieve target costs by eliminating desirable product functionality.

Tear-down analysis

- Tear-down analysis (also known as reverse engineering) involves examining a competitor's product to identify opportunities for improvement and /or cost reduction.
- The competitor's product is dismantled to identify its functionality and design. This provides insight about the processes and the cost.
- The aim is to benchmark provisional product design with the design of competitors.

Value engineering

- Value engineering (known as value analysis) is a systematic examination of cost of a product.
- Aim is to devise means of achieving standard quality and reliability, at the target cost.
- This is achieved by:
 - Identifying improved product design with reduced cost,
 - Eliminating unnecessary functions that increase product cost for which customers are not prepared to pay.
- Value engineering requires the use of functional analysis. This involves decomposing the product into its elements or attributes.
- E.g in automobiles functions might consist of : style, comfort, reliability, attractiveness etc.
- Surveys are conducted to determine the price customers are willing to pay for the various attributes.
- Where cost of a function exceeds the value to the customer, either the function should be eliminated or modified.

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The need for accurate cost measurement systems

- Target costing should be supported by an accurate cost system.
- Cost drivers should be established that determine cost of the activities consumed.
- Arbitrary cost allocations should be avoided.
- Target costing exercise should result in reduction of cost to the organization and not only the product.

An illustration of Target Costing

- The Micro Electronics Company manufactures cameras and video equipment. It is in the process of introducing a new state of the art combined digital video and still camera.
- The company has undertaken market research to ascertain customer perception and compare with competitors products.
- As a result, target selling price has been established and a life-time projected volume.
- Cost estimates have been prepared based on proposed product specifications.

An illustration of Target Costing

- The company has set a target profit margin of 30% of selling price.
- This has been deducted from the proposed selling price to determine the target cost.
- Following summary information has been presented to management
 - Projected lifetime sales volume 300,000 units
 - Target selling price Rs 800
 - Target profit margin (30%) Rs 240
 - Target cost (800 – 240) Rs 560
 - Projected cost Rs 700

An illustration of Target Costing

- The excess of the projected cost over the target cost results in an intensive target costing exercise.
- After completion of the target costing exercise, the projected cost is Rs 555, i.e. below target cost of Rs560.
- the analysis of the projected cost before and after the target costing exercise is as follows:
-

An illustration of Target Costing

	Before	after
Manufacturing cost		
direct materials (bought in)	390	325
direct labor	100	80
direct machining costs	20	20
ordering and receiving	8	2
quality assurance	60	50

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rework	15		6	
engineering and design	<u>10</u>	603	<u>8</u>	491

Non-manufacturing costs

marketing	40		25	
distribution	30		20	
After-sales services and warranty	<u>27</u>	<u>97</u>	<u>19</u>	<u>64</u>
Total cost		700		555

An illustration of Target Costing

- To achieve the target cost the company establishes a project team to undertake the intense target costing exercise.
- In response to the need to reduce projected cost, the team starts with purchasing a video camera from its main competitors and undertake a tear-down analysis.
- This process involves dismantling the cameras to provide insights into potential design improvements.
- Value engineering is also undertaken to identify new designs that will accomplish the same functions at a lower cost.

An illustration of Target Costing

- The outcome is a significant reduction in projected direct materials, labor and rework costs.
- Next the team engages in functional analysis.
- This process indicated several functions included in the prototype are not valued by customers.
- The functional analysis results in further cost reductions.
- The team now turn their attention to redesigning the production and support processes.
- They redesign the ordering and receiving process by reducing the number of suppliers and working closely with smaller suppliers.
- When projected cost is below the target cost, the exercise is concluded.

LECTURE # 27

Kaizen costing

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- Widely used by Japanese organizations as a mechanism for reducing and managing costs.
- Kaizen is the Japanese word for making small improvements to a process rather than through large innovations.
- Target costing is applied during the design stage whereas Kaizen costing is applied during the manufacturing stage.
- Kaizen costing focuses on the production process and cost reductions are derived primarily through increased efficiency of the production process.
- Kaizen costing relies heavily on employee empowerment. Workers are given responsibility to improve process and reduce costs.

Activity based management

- The terms activity based management (ABM) or activity based cost management (ABCM) are used to describe cost management applications of ABC.
- Three stages are required:
 - Identifying major activities that take place
 - Assigning costs to cost pools / centers for each activity
 - Determining the cost driver for each major activity.
- ABM focuses on managing a business on the basis of activities performed.
- ABM is based on the fact the activities consume costs, hence managing activities will manage costs.
- ABM provides information on what activities are performed, what they cost, why undertaken and how well performed.

Traditional vs ABM analysis

- Traditional analysis
- Salaries 320
- Stationery 40
- Travel 140
- Telephone 40
- Depreciation 40
- 580
- ABM analysis
- Preparing quotations 120
- Receiving cust orders 190
- Assessing credit 100
- Expediting 80
- Resolving custprobs90
- 580

Traditional budget and control reports analyze costs by type of expense. In contrast ABM analyzes costs by activities and thus provides management with information on why costs are incurred, and the output from the activity.

- To identify and prioritize the potential for cost reduction, organizations classify activities as either value-added or non value-added.
- Value-added is what customers perceive as useful and are prepared to pay for. E.g painting a car.

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- Non value added activities include inspecting, storing and moving raw material. Actions taken to carry these out efficiently will reduce costs.
- Care is needed as cost driver rates can encourage dysfunctional behavior. Rate can be improved by splitting the purchase orders, thus increasing number of orders. Ultimately this may increase costs.

Business process re-engineering

- Involves examining business processes and making substantial changes to how the organization currently operates.
- A business process is a collection activities linked together in a co-ordinated manner.
- E.g material handling is a business process consisting of scheduling production, storing materials, processing purchase orders, inspecting materials and paying suppliers.
- The aim is to improve key business processes by focusing on simplification, cost reduction, improve quality and enhance customer satisfaction.
- The process might be re-engineered by sending production schedule direct to nominated suppliers, and entering into contractual agreements to deliver materials according to production schedule.
- Quality guarantees and inspection prior to delivery can also be included.
- End result might be the elimination or reduction of storing, purchasing and inspecting activities.
- In BPR focus is on major changes rather than marginal improvements.

Cost of quality

- Quality has become one of the key competitive variables.
- TQM is a customer oriented process of continuous improvement that focuses on delivery of consistent high quality, on time.
- Companies discovered it was cheaper to produce items correctly the first time. It is a waste of resources to make sub-standard items, then detect and rework, or scrap them.
- Emphasis of TQM is to design and build in quality.
- Managers need to know the costs of quality and how they are changing over time.
- A cost of quality report should be prepared showing:

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- Prevention costs; i.e preventive maintenance, quality planning, training, extra cost of high quality material.
- Appraisal costs; cost of inspection at each stage, quality audits, and field tests.
- Internal failure costs; such as scrap, downtime, repair
- External failure costs; customer complaints, warranty replacements, damaged reputation.

Cost management and the value chain



- Value chain analysis is increasingly being used to manage costs more efficiently.
- Value chain is the linked set of value creating activities all the way from basic raw materials to the end-use product.
- A firm which performs value chain activities more efficiently and at a lower cost than its competitors, will gain an advantage.
- It is a system of inter-dependent activities in which performance of one activity affects the performance and cost of another.
- Each link is seen as the customer of the previous link. If each link satisfies the needs of its customer, then end-customer satisfaction should follow.

Benchmarking

- In order to identify the best way of performing activities and business processes, organizations are turning to benchmarking.
- This involves comparing key activities to world-class best practices.
- Benchmarking identifies an activity, such as customer order processing, that needs to be improved.
- It finds a non-rival organization, considered to represent world class best practice for this activity, and studies how it performs the activity.
- The objective is to find out how the activity can be improved, and implement the improvements.

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- Benchmarking is cost beneficial since an organization can save time and money avoiding mistakes that other companies have made.
- The overall aim is find and implement best practices.

Just-in-time Systems (JIT)

- JIT seeks to achieve the following goals:
 - Elimination of non-value added activities
 - Zero inventory
 - Zero defects
 - Batch size of one
 - Zero breakdowns
 - 100% on time delivery

Whether achieved or not, they set targets and create a climate for continuous improvement.

Elimination of non value-added activities

- JIT is a philosophy of management dedicated to elimination of waste. Waste is anything that does not add value to the product.
- The lead time involved in manufacturing and selling a product consists of process time, inspection time, move time, and storage time. Of these, only process time actually adds value to the product.
- Research has shown that process time is less than 10% of total lead time in many organizations. Therefore 90% of lead time adds no value, and in JIT philosophy, related cost can be significantly reduced.
- JIT system is a mechanism for reducing non value-added costs and long run costs.
- The implementation of JIT production methods was considered to be one of the major factors of the success of the Japanese firms in international markets.
- The JIT approach involves a continuous commitment to the pursuit of excellence in all phases manufacturing operations.
- The aims of JIT are to produce at the required quality, in the required quantity , and at the required time.

LECTURE # 28

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Example - Traditional vs activity based budgets, and life-cycle costing

- The budget for the production, planning and development dept of Okarapl is currently prepared on traditional system.
- The analysis of costs by expense type for period ended 30 November 20X0 is as follows:

– Expense	budget %	Actual %
– Salaries	60	63
– Supplies	6	5
– Travel cost	12	12
– Technology cost	10	7
– Occupancy cost	12	13
– Total budget and actual costs for the dept for period ended November 30 are Rs 1,000,000 and Rs 1,060,000 respectively.		

Traditional and activity based budget, and life-cycle costing

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- The company now feels an Activity Based Budgeting approach should be used.
- A number of activities have been identified, and budget and actual cost should be attributed as follows:

	Budget %	Actual %
– Scheduling new products	20	16
– Scheduling existing products	40	34
– Remedial scheduling	5	12
– Special studies –specific orders	10	8
– Training	10	15
– Management and administration	15	15

Traditional and activity based budget statements, and life-cycle costing

- Required:
- (a) prepare two budget control statements for department and compare with actual, showing variances, using
 - traditional expense based analysis, and
 - Activity based analysis

Solution

- (a) Performance report – traditional:

Expense	Budget	Actual	variance
– Salaries	600000	667800	67800A
– Supplies	60000	53000	7000 F
– Travel cost	120000	127200	7200A
– Technology	100000	74200	25800F
Occupancy	<u>120000</u>	<u>137800</u>	<u>17800A</u>
	1000000	1060000	60000A

- Performance report – activity based**

Activity	Budget	Actual	Variance
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Scheduling new	200000	169600	30400F
Scheduling existing	400000	360400	39600F
Remedial	50000	127200	77200A
Special studies	100000	84800	15200F
Training		100000	159000 59000A
Mgt and admin	<u>150000</u>	<u>159000</u>	<u>9000F</u>
	<u>1000000</u>	<u>1060000</u>	<u>60000</u>

LECTURE # 29

Traditional and activity based budget statements, and life-cycle costing

- (b) Other activities have been identified and the budget quantified for the three months ended March 31, 20X1 is as follows:

Activity	cost driver	units	Cost(000)
Product design	hours	8000	2000
– Purchasing	P.Orders	4000	200
– Production	mach hours	12000	1500*
– Packing	volume(cu.m)	20000	400
– Distribution	weight (kg)	120000	600

*this includes depreciation provision of Rs 300k of which Rs 8000 applies to 3 mths for a new product (NPD)

Example cont...

- New product NPD is included in the above budget. The following additional information applies to NPD:
 - Estimated output over life-cycle: 5000 (4 yrs)
 - Product design requirement: 400 design hours
 - Output in qtr ended march 31, 20X1: 250 units

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- Equivalent batch size per purchase order: 50 units
- Production time .75 machhr; vol 4cu.m; wt 3kg.
- Prepare unit overhead cost for NPD using activity based approach which includes a share of life-cycle costs.

Solution

- (b) The cost driver rates are as follows:
 - Product design (Rs 2m/8000 hrs) = Rs 250 per hr
 - Purchasing (200,000/400) = Rs 50 per P.O
 - Production (excldepn) (1500,000 – 300,000) / 12000hrs = Rs 100 per machhr
 - Packing (400,000/20000) = Rs 20 per cu.m
 - Distribution (600,000 / 120,000) = Rs 5 per kg
- The activity-based overhead cost per unit is as follows:
 - Product design (400hrs at Rs 250 = 100,000 divided by life-cycle output of 5000 units)
= 20
 - Purchasing (5 Pos at 50 units per order costing Rs 250 for output of 250 units)
= 1
 - Production (.75 machhr at Rs 100) = 75
 - Depreciation (Rs 8000 / qtr for 4 years divided by life-cycle output of 5000 units=
=25.6
 - Packing (.4 cu m at Rs 20) = 8
 - Distribution (3 kg at Rs 5) = 15
 - Total cost 144.6

Benchmarking*

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- It finds a non-rival organization, considered to represent world class best practice for this activity, and studies how it performs the activity.
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- The aims of JIT are to produce at the required quality, in the required quantity , and at the required time.

Batch sizes of one

- Set up time is the time required to adjust equipment and retool for a different product.
- Long set up time makes production of small batches uneconomic.
- However, production in large batches leads to substantial throughput delays and creation of high inventory levels.
- JIT philosophy is to reduce set up time to zero. By investing in advanced manufacturing technologies, some machine settings can be adjusted automatically.
- If setup time approaches zero, there is no advantage in producing in batches, and optimal batch size can be one.

JIT Purchasing Arrangements

- Delivery of materials immediately precedes their use.
- Frequent deliveries so stocks can be cut to a minimum.
- Suppliers to inspect material before delivery, and guarantee quality.
- More business to fewer suppliers and placing longer-term purchase orders.
- Reduction in paper-work arising from blanket long-term orders to a few suppliers

LECTURE # 30

JIT and Management Accounting*

- Management accounting must support just-in-time manufacturing by monitoring, identifying and communicating to decision makers, any delay, error and waste in the system.
- Emphasis on providing information on supplier reliability, set up times, throughput cycle times, percentage of deliveries that are on time, and defect rates.

Savings from JIT and determination of optimal selling price

- A Ltd manufactures and distributes three types of cars (the T1, T2, and T3). Each type of car has its own production line. The company forecast loss for the forthcoming year is as follows:

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Current operations – budgeted details for the next year:

	T1	T2	T3
Direct materials	2520	2924	3960
Direct labor	<u>1120</u>	<u>1292</u>	<u>1980</u>
Total direct cost	<u>3640</u>	<u>4216</u>	<u>5940</u>
Budgeted production (cars)	75000	75000	75000
Number of production runs	1000	1000	1500
Number of orders executed	4000	5000	5600
Machine hours	1080k	1800k	1680k

Savings from JIT and determination of optimal selling price

Annual Overheads	Fixed	Variable
Set ups	42660	13000 per prod run
Materials handling	52890	4000 per order
Inspection	59880	18000 per prod run
Machining	144540	40 per machine hour
Distribution and warehousing	42900	3000 per order

Impact of Proposed JIT system:

direct labor	increase by 20%
set ups	decrease by 30%
materials handling	decrease by 30%
inspection	decrease by 30%
machining	decrease by 15%
distribution and warehouse	eliminated

- **Required (a)**

Based on the budgeted production levels, calculate the total annual savings that would be achieved by introducing the JIT system.

Savings from JIT

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Solution:

The annual cost savings are as follows:	(Rs 000s)
Direct labor $0.2(1120+1292+1980) \times 75000$	+65880
Variable set ups $(30\% \times 13000) \times 3500$	- 13650
Materials handling $(30\% \times 4000 \times 14600)$	-17520
Variable inspection $(30\% \times 18000 \times 3500)$	-18900
Machining $(15\% \times 40 \times 4560k)$	-27360
Distribution and warehousing (3000×14600)	- 43800
Fixed $[30\%(42660+52890+59880) + (15\% \times 144540) + 42900]$	<u>-111210</u>
Total savings	<u>166560</u>

Determination of optimal selling price

- The following table shows the price/demand relationship for each type of car per annum:

T1		T2		T3	
Price	demand	price	demand	price	demand
5000	75000	5750	75000	6500	75000
5750	65000	6250	60000	6750	60000
6000	50000	6500	45000	7750	45000
6500	35000	7500	35000	8000	30000

Determination of optimal selling price

- Required (b)
- Assuming that A Ltd adopts the JIT system and that the revised variable overhead cost per car remains constant (as per the proposed JIT system budget), calculate the profit-maximizing price and output level for each type of car.

The total variable overhead costs allocated to each product is as follows:

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(all 000s)	T1	T2	T3
Set up (9100 per prod run)	9100	9100	13650
Materials hand (2800/order)	11200	14000	15680
Inspection (12600/prod run)	12600	12600	18900
Machining (34 per mach hr)	36720	61200	57120
Total output	75	75	75
Variable overheads per car	928.26	1292	1404.67
Direct materials	2520	2924	3960
Direct labor	1344	1550.4	2376
Total variable cost per car	4792.26	5766.4	7740.67

Determination of optimal selling price

The above variable costs are now used to derive the contributions for the various price

levels: T1 car

Price	demand	unit contr	total
5000	75000	207.74	15581
5750	65000	957.74	62253
6000	50000	1207.74	60387
6500	35000	1707.74	59771

Similarly the total contributions for the other cars can be calculated.

The profit maximizing price and output level for T1 is Rs 5750 and 65000 respectively.

LECTURE # 31

Strategic Management Accounting*

- Strategy – to accomplish a task, win against an opponent.
- Information for formulation and implementation of organization strategy.

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- To develop an integrated framework of performance measurement that can be used to clarify, communicate and manage strategy.
- Strategic decisions usually involve the longer term and have a significant effect on the organization.

External information about competitors

- To protect organization's strategic position, and determine future strategies.
- Help evaluate its competitive position relative to rest of industry.
- Collecting data on costs and prices, sales volumes and market shares, cash flows and resource availability for main competitors.
- Information available from public source i.e. annual reports, press, official institutions and informal sources. (sales personnel, consultants, industry specialist)

Strategic positioning*

- A firm has a choice of three generic strategies in order to achieve sustainable competitive advantage:
 - Cost leadership – compete on the basis of lower selling prices. Advantage may be due to economies of scale, access to favorable raw material prices, superior technology.
 - Differentiation – superior and unique products. E.g. dependability of product, after-sale service, wide availability.
 - Focus – on a narrow segment of the market that has special needs.

Accounting in relation to strategic positioning

- There will be more emphasis on particular accounting techniques depending on the strategic position adopted.
- Tight cost controls are more appropriate where cost leadership strategy is followed.
- Manufacturing cost standards are likely to be less important for a firm following product differentiation strategy.

Target costing and strategic management accounting

- Target costing falls within the domain of strategic management accounting.
- Justification for this is the external focus and the market-driven approach to product pricing and cost management.
- The aim is to achieve target cost, which involves examining cost reduction opportunities throughout the entire value chain.

The Balanced Scorecard

- Attention is being given to encourage behavior that is consistent with organization's strategy.
- Development of an integrated framework of performance measurement that can be used to clarify, communicate and manage strategy implementation.
- The approach will attempt to integrate both financial and non-financial measures, and incorporate performance measurement within the strategic management process.

The Balanced Scorecard

- Product quality, delivery, reliability, after-sale service and customer satisfaction have become key competitive variables.
- None of these were given much importance measured by traditional management accounting performance measurement systems.
- The need to integrate financial and non-financial measures of performance and identify key performance indicators that link to strategy, led to the emergence of the balanced scorecard.

LECTURE #32

The Balanced Scorecard philosophy*

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- The balanced scorecard philosophy assumes that an organization's vision and strategy is best achieved when the organization is viewed from the following four perspectives:
 - Customer perspective (how do customers see us)
 - Internal business process perspective (what must we excel at)
 - Learning and growth perspective (can we continue to improve and create value)
 - Financial perspective (how do we look to shareholders)

The Balanced Scorecard

- The balanced scorecard is a strategic management technique for communicating and evaluating the achievement of the mission and strategy of the organization.
- (Insert fig 23 page 1002)
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The Balanced Scorecard

	Objectives	Measures	Targets	Initiatives	
FINANCIAL					
CUSTOMER					
INTERNAL BUSINESS PROCESS					
LEARNING AND GROWTH					

Implementation

- To implement the balanced scorecard, the major objectives of each of the four perspectives should be stated.
- The chart shows that these objectives should then be translated into specific performance measures.
- There may be one or more objectives to each perspective, and one or more performance measure linked to each.
- In the scorecard, firms should identify major initiatives for achieving each objective and also establish targets for each performance measure.

The aim of balanced scorecard

- The aim of the scorecard is to provide a comprehensive framework for translating a company's strategic objectives into a coherent set of performance measures.
- Only critical measures are incorporated in the scorecard.
- Cause and effect relationship encompasses all four perspectives of the balanced scorecard.

Cause and Effect