Chapter 19

MANAGEMENT CONTROL SYSTEMS, TRANSFER PRICING AND MULTINATIONAL CONSIDERATIONS

19-1 A management control system is a means of gathering and using information to aid and coordinate the planning and control decisions throughout an organisation and to guide the behaviour of its managers and employees. The goal of the system is to improve collective decisions within an organisation.

19-2 To be effective, management control systems should be (a) closely aligned to an organisation's strategies and goals, (b) designed to support the organisational responsibilities of individual managers, and (c) able to motivate managers and employees to put in effort to attain selected goals desired by top management.

19-3 Motivation combines goal congruence and effort. Motivation is the desire to attain a selected goal specified by top management (the goal-congruence aspect) combined with the resulting pursuit of that goal (the effort aspect). Goal congruence exists when individuals and groups work towards achieving the organisational goals and effort is an exertion towards achieving goal.

19-4 The chapter cites five benefits of decentralisation:
   1. Creates greater responsiveness to local needs.
   2. Leads to gains from faster decision making.
   3. Increases motivation of subunit managers.
   4. Assists management development and learning.
   5. Sharpens the focus of subunit managers.

The chapter cites four costs of decentralisation:
   1. Leads to suboptimal decision making.
   2. Focuses managers’ attention on the subunit rather than the company as a whole.
   3. Increases costs of gathering information.
   4. Results in duplication of activities.

19-5 No. Organisations typically compare the benefits and costs of decentralisation on a function-by-function basis. For example, companies with highly decentralised operating divisions frequently have centralised income tax strategies.

19-6 No. A transfer price is the price one subunit of an organisation charges for a product or service supplied to another subunit of the same organisation. The two segments can be cost centres, profit centres, or investment centres. For example, the allocation of service department costs to production departments that are set up as either cost centres or investment centres is an example of transfer pricing.

19-7 The three general methods for determining transfer prices are:
   1. Market-based transfer prices,
   2. Cost-based transfer prices, and
   3. Hybrid transfer prices.
Transfer prices should have the following properties. They should
1. Promote goal congruence,
2. Be useful for evaluating subunit performance,
3. Motivate management effort, and
4. Preserve a high level of subunit autonomy in decision making.

No, the chapter Figure 19.2 demonstrates how division operating profits differ dramatically under the variable-cost-based, full-cost-based, and market-based methods of transfer pricing.

Transferring products or services at market prices generally leads to optimal decisions when (a) the market for the intermediate product is perfectly competitive, (b) interdependencies of subunits are minimal, and (c) there are no additional costs or benefits to the company as a whole from buying or selling in the external market instead of transacting internally.

One potential limitation of full-cost-based transfer prices is that they can lead to suboptimal decisions for the company as a whole. An example of a conflict between divisional action and overall company profitability resulting from an inappropriate transfer-pricing policy is buying products or services outside the company when it is beneficial to overall company profitability to source them internally. This situation often arises where full-cost-based transfer prices are used. This situation can make the fixed costs of the supplying division appear to be variable costs of the purchasing division and to be mistaken as relevant costs in decision-making. Another limitation is that the supplying division may not have sufficient incentives to control costs if the full-cost-based transfer price uses actual costs rather than standard costs.

The purchasing division sources externally if market prices are lower than full costs. From the viewpoint of the company as a whole, the purchasing division should source from outside only if market prices are less than variable costs of production, not full costs of production.

Reasons why a dual-pricing approach to transfer pricing is not widely used in practice include:
1. In this approach, the manager of the supplying division uses a cost-based method to record revenues and does not have sufficient incentives to control costs.
2. This approach does not provide clear signals to division managers about the level of decentralisation top management wants.
3. This approach tends to insulate managers from the frictions of the marketplace because costs, not market prices, affect the revenues of the supplying division.
4. It leads to problems in computing the taxable income of subunits located in different tax jurisdictions.

Disagree. Cost and price information are often useful starting points in the negotiation process. Costs, particularly variable costs of the selling division, serve as a ‘floor’ below which the selling division would be unwilling to sell. Prices that the buying division would pay to purchase products from the outside market serves as a ‘ceiling’ above which the buying division would be unwilling to buy. The price negotiated by the two divisions will, in general, have no specific relationship to either costs or prices. But the negotiated price will generally fall between the variable costs-based floor and the market price-based ceiling.
Yes. The general transfer-pricing guideline specifies that the minimum transfer price equals the *incremental cost per unit* incurred up to the point of transfer plus the *opportunity cost per unit* to the supplying division. When the supplying division has idle capacity, its opportunity cost per unit is zero; when the supplying division has no idle capacity, its opportunity cost per unit is greater than zero. Hence, the minimum transfer price will vary depending on whether the supplying division has idle capacity or not.

Alternative transfer-pricing methods can result in sizable differences in the reported operating profits of divisions under different income tax jurisdictions. If these jurisdictions have different tax rates or deductions, the net profit after tax of the company as a whole can be affected by the choice of the transfer-pricing method.
9-17 (25 min.) Cost centres, profit centres, decentralisation, transfer prices

1. The Glass Department sends its product to the Wood and Metal Departments for finishing. The Glass Department does not negotiate internal prices. The Glass, Wood and Metal Departments are cost centres because they are only evaluated on output and cost control (cost variances).

2. The three departments are centralised because upper management dictates their production schedules.

3. A centralised department can be a profit centre. Centralisation relates to the degree of autonomy that a department has for decision making. This concept is independent of the type of responsibility centre used to evaluate performance. (For example the Glass Department could be a profit centre if upper management chooses a transfer price for the glass transferred from the Glass to the Wood and Metal Departments.) A department may be organised as a profit centre but it will be centralised if it has little freedom in making decisions.

4.
   a) With these changes, Clearview Ltd will be moving towards a more decentralised environment because each department will have more local decision-making authority, such as the ability to set its own production schedule, buy and sell products in the external market and negotiate transfer prices. These changes also make all three departments profit centres (rather than cost centres) because the managers of each department are responsible for both costs and revenues.

   b) I would recommend that upper management evaluate the three departments as profit centres because profits would be a good indicator of how well each department is doing.

19-18 (15 min.) Decentralisation, goal congruence, responsibility centres

1. The environmental-management group appears to be decentralised because its managers have considerable freedom to make decisions. They can choose which projects to work on and which projects to reject. Top management will adjust the size of the environmental-management group to match the demand for the group's services by operating divisions.

2. The environmental-management group is a cost centre. The group is required to charge the operating divisions for environmental services at cost and not at market prices that would help earn the group a profit.

3. The benefits of structuring the environmental-management group in this way are:
   a. The operating managers have incentive to carefully weigh and conduct cost-benefit analysis before requesting the environmental group's services.
   b. The operating managers have an incentive to follow the work and the progress made by the environmental team.
   c. The environmental group has incentive to fulfill the contract, to do a good job in terms of cost, time, and quality, and to satisfy the operating division to continue to get business.
The problems in structuring the environmental-management group in this way are:

a. The contract requires extensive internal negotiations in terms of cost, time, and technical specifications.

b. The environmental group needs to continuously ‘sell’ its services to the operating division, and this could potentially result in loss of morale.

c. Experimental projects that have long-term potential may not be undertaken because operating division managers may be reluctant to undertake projects that are costly and uncertain, whose benefits will be realised only well after they have left the division.

To the extent that the focus of the environmental-management group is on short-run projects demanded by the operating divisions, the current structure leads to goal congruence and motivation. Goal congruence is achieved because both operating divisions and the environmental-management group are motivated to work toward the organisational goals of reducing pollution and improving the environment. The operating divisions will be motivated to use the services of the environmental-management group to achieve the environmental goals set for them by top management. The environmental-management group will be motivated to deliver high-quality services in a cost-effective way to continue to create a demand for their services. The one issue that top management needs to guard against is that experimental projects with long-term potential that are costly and uncertain may not be undertaken under the current structure. Top management may want to set up a committee to study and propose such long-run projects for consideration and funding by corporate management.

19-28 (20–30 min.) Pertinent transfer price

This problem explores the ‘general transfer-pricing guideline’ discussed in the chapter.

1. No, transfers should not be made to Division B if there is no unused capacity in Division A. An incremental (outlay) cost approach shows a positive contribution for the company as a whole:

<table>
<thead>
<tr>
<th>Selling price of final product</th>
<th>A$300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental cost per unit in Division A</td>
<td>A$120</td>
</tr>
<tr>
<td>Incremental cost per unit in Division B</td>
<td>A$150</td>
</tr>
<tr>
<td>Contribution margin per unit</td>
<td>A$30</td>
</tr>
</tbody>
</table>

However, if there is no excess capacity in Division A, any transfer will result in diverting products from the market for the intermediate product. Sales in this market result in a greater contribution for the company as a whole. Division B should not assemble the pushchairs since the incremental revenue Stradeka Ltd can earn, A$100 per unit (A$300 from selling the final product – A$200 from selling the intermediate product) is less than the incremental cost of A$150 to assemble the pushchair in Division B. Alternatively, Stradeka’s contribution margin of A$30 from selling the final product exceeds Stradeka’s contribution margin of A$80 from selling the intermediate product:

<table>
<thead>
<tr>
<th>Selling price of intermediate product</th>
<th>A$200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental (outlay) cost per unit in Division A</td>
<td>A$120</td>
</tr>
<tr>
<td>Contribution margin per unit</td>
<td>A$80</td>
</tr>
</tbody>
</table>
Using the general guideline described in the chapter,

\[
\text{Minimum transfer price} = \left( \frac{\text{Additional incremental cost}}{\text{per unit incurred up to the point of transfer}} \right) + \left( \frac{\text{Opportunity cost}}{\text{per unit to the supplying division}} \right)
\]

\[
= \text{A}$120 + (\text{A}$200 - \text{A}$120) \\
= \text{A}$200, \text{which is the market price}
\]

The market price is the transfer price that leads to the correct decision; that is, do not transfer to Division B unless there are extenuating circumstances for continuing to market the final product. Therefore, Division B must either drop the product or reduce the incremental costs of assembly from A$150 per pushchair to less than A$100 (selling price, A$300 – transfer price, A$200).

2. If (a) A has excess capacity, (b) there is intermediate external demand for only 800 units at A$200, and (c) the A$200 price is to be maintained, then the opportunity costs per unit to the supplying division are A$0. The general guideline indicates a minimum transfer price of: A$120 + A$0 = A$120, which is the incremental or outlay costs for the first 200 units. B would buy 200 units from A at a transfer price of A$120 because B can earn a contribution of A$30 per unit [A$300 - (A$120 + A$150)]. In fact, B would be willing to buy units from A at any price up to A$150 per unit because any transfers at a price of up to A$150 will still yield B a positive contribution margin.

Note, however, that if B wants more than 200 units, the minimum transfer price will be A$200 as computed in requirement 1 because A will incur an opportunity cost in the form of lost contribution of A$80 (market price of A$200 – outlay costs of A$120) for every unit above 200 units that are transferred to B.

The following schedule summarises the transfer prices for units transferred from A to B:

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–200</td>
<td>A$120–A$150</td>
</tr>
<tr>
<td>200–1000</td>
<td>A$200</td>
</tr>
</tbody>
</table>

For an exploration of this situation when imperfect markets exist, see the next problem.

3. Division B would show zero contribution, but the company as a whole would generate a contribution of A$30 per unit on the 200 units transferred. Any price between A$120 and A$150 would induce the transfer that would be desirable for the company as a whole. A motivational problem may arise regarding how to split the A$30 contribution between Division A and B. Unless the price is below A$150, B would have little incentive to buy.

Note: The transfer price that may appear optimal in an economic analysis may, in fact, be totally unacceptable from the viewpoints of (1) preserving autonomy of the managers, and (2) evaluating the performance of the divisions as economic units. For instance, consider the simplest case discussed previously, where there is idle capacity and the A$200 intermediate price is to be maintained. To direct that A should sell to B at A’s variable cost of A$120 may be desirable from the viewpoint of B and the company as a whole. However, the autonomy (independence) of the manager of A is eroded. Division A will earn nothing, although it could argue that it is contributing to the earning of income on the final product.
If the manager of A wants a portion of the total company contribution of A$30 per unit, the question is: How is an appropriate amount determined? This is a difficult question in practice. The price can be negotiated upward to somewhere between A$120 and A$150 so that some ‘equitable’ split is achieved. A dual transfer-pricing scheme has also been suggested, whereby the supplier gets credit for the full intermediate market price and the buyer is charged with only variable or incremental costs. In any event, when there is heavy interdependence between divisions, such as in this case, some system of subsidies may be needed to deal with the three problems of goal congruence, management effort, and subunit autonomy. Of course, where heavy subsidies are needed, a question can be raised as to whether the existing degree of decentralisation is optimal.
19-29 (30–40 min.) **Pricing in imperfect markets** *(continuation of 19-28)*

An alternative presentation, which contains the same numerical answers, can be found at the end of this solution.

1. Potential contribution from external intermediate sale is
   \[1000 \times (A$195 - A$120)\]
   
   Contribution through keeping price at A$200 is
   \[800 \times A$80.\]
   
   Forgone contribution by transferring 200 units
   \[A$11 000\]

   Opportunity cost per unit to the supplying division by transferring internally:
   \[\frac{A$11 000}{200} = A$55\]

   Transfer price = A$120 + A$55 = A$175

An alternative approach to obtaining the same answer is to recognise that the incremental or outlay cost is the same for all 1000 units in question. Therefore, the total revenue desired by A would be the same for selling outside or inside.

Let X be equal to the transfer price at which Division A is indifferent between selling all units outside versus transferring 200 units inside.

\[1000 \times A$195 = (800 \times A$200) + 200X \times = A$175\]

The A$175 price will lead to the correct decision. Division B will not buy from Division A because its total costs of A$175 + A$150 will exceed its prospective selling price of A$300. Division A will then sell 1000 units at A$195 to the outside parties; Division A and the company will have a contribution margin of A$75 000. Otherwise, if 800 units were sold at A$200 and 200 units were transferred to Division B, the company would have a contribution of A$64 000 (800 \times A$80) plus A$6000 (200 units of final product \times A$30) totalling A$70 000.

A comparison might be drawn regarding the computation of the appropriate transfer prices between the preceding problem and this problem:

\[
\text{Minimum transfer price} = \left(\frac{\text{Additional incremental cost}}{\text{per unit incurred up to the point of transfer}}\right) + \left(\frac{\text{Opportunity cost}}{\text{per unit to Division A}}\right)
\]

**Perfect markets:**

\[= A$120 + (\text{Selling price} - \text{Outlay costs per unit})\]

\[= A$120 + (A$200 - A$120) = A$200\]

**Imperfect markets:**

\[= A$120 + \frac{\text{Marginal revenues} - \text{Outlay costs}}{\text{Number of units transferred}}\]

\[= A$120 + \frac{A$35 000^a - A$24 000^b}{200} = A$175\]

^a Marginal revenues of Division A from selling 200 units outside rather than transferring to Division B = (A$195 \times 1000) - (A$200 \times 800) = A$195 000 - A$160 000 = A$35 000.

^b Incremental (outlay) costs incurred by Division A to produce 200 units = A$120 \times 200 = A$24 000.
Therefore, selling price (A$195) and marginal revenues per unit (A$175 = A$35 000 ÷ 200) are not the same.

The following discussion is optional. These points should be explored only if there is sufficient class time:

Some students may erroneously say that the ‘new’ market price of A$195 is the appropriate transfer price. They may claim that the general guideline says that the transfer price should be A$120 + (A$195 – A$120) = A$195, the market price. This conclusion assumes a perfect market. However, in this case there are imperfections in the intermediate market. That is, the market price is not a good approximation of alternative revenue. If a division’s sales are heavy enough to reduce market prices, marginal revenue will be less than market price.

It is true that either A$195 or A$175 will lead to the correct decision by B in this case. But suppose that B’s variable costs were A$120 instead of A$150. Then B would still be willing to buy at a transfer price of A$175 (but not at a price of A$195, because then B would earn a negative contribution of A$15 per unit [A$300 – (A$195 + A$120)]. Note that if B’s variable costs were A$120, transfers of 200 units at A$175 each would be desirable:

<table>
<thead>
<tr>
<th>Division A contribution is:</th>
<th>Division B contribution is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[800 × (A$200 – A$120)] + [200 × (A$175 – A$120)] = A$75 000</td>
<td>200 × [A$300 – (A$175 + A$120)] = 1000</td>
</tr>
<tr>
<td>Total contribution</td>
<td>A$76 000</td>
</tr>
</tbody>
</table>

Or the same facts can be analysed for the company as a whole:
Sales of intermediate product,
800 × (A$200 – A$120) = A$64 000
Sales of final products,
200 × [300 – (A$120 + A$120)] = 12 000
Total contribution A$76 000

If the transfer price were A$195, B would not accept the transfer and would not earn any contribution. As shown above, Division A and the company as a whole will earn a total contribution of A$75 000 (1000 × (A$195 - A$120)) instead of A$76 000.

2.

a. Division A can sell 900 units at A$195 to the outside market and 100 units to Division B, or 800 at A$200 to the outside market and 200 units to Division B. Note that, under both alternatives, 100 units can be transferred to Division B at no opportunity cost to A.

Using the general guideline, the minimum transfer price of the first 100 units [901–1000] is:

\[ TP_1 = A$120 + 0 = A$120 \]

If Division B needs 100 additional units, the opportunity cost to A is not zero, because Division A will then have to sell only 800 units to the outside market for a contribution of 800 × (A$200 – A$120) = A$64 000 instead of 900 units for a contribution of 900 × (A$195 – A$120) = A$67 500. Each unit sold to B in addition to the first 100 units has an opportunity cost to A of (A$67 500 – A$64 000) ÷ 100 = A$35.
Using the general guideline, the minimum transfer price of the next 100 units \([801-900]\) is:

\[ TP_2 = A\$120 + A\$35 = A\$155 \]

Alternatively, the computation could be:

Increase in contribution from 100 more units, \(100 \times A\$75\)
Loss in contribution on 800 units, \(800 \times (A\$80 - A\$75)\)
Net ‘marginal revenue’ \(A\$3500 \div 100\) units = A\$35

(Minimum) transfer price applicable to first 100 units offered by A is \(A\$120 + A\$0\) per unit
(Minimum) transfer price applicable to next 100 units offered by A is \(A\$120 + (A\$3500 \div 100)\) per unit
(Minimum) transfer price applicable to next 800 units = A\$195 per unit

b. The manager of Division B will not want to purchase more than 100 units because the units at A\$155 would decrease his contribution \((A\$155 + A\$150 > A\$300)\). Because the manager of Division B does not buy more than 100 units, the manager of Division A will have 900 units available for sale to the outside market. The manager of Division A will strive to maximise the contribution by selling them all at A\$195.

This solution maximises the company’s contribution:

Sales of intermediate product,
\[900 \times (A\$195 - A\$120) = A\$67\,500\]

Sale of final products,
\[100 \times (A\$300 - (A\$150 + A\$120)) = 3000\]
\[A\$70\,500\]

which compares favourably to:

Sales of intermediate product,
\[800 \times (A\$200 - A\$120) = A\$64\,000\]

Sales of final products,
\[200 \times (A\$300 - (A\$150 + A\$120)) = 6000\]
\[A\$70\,000\]
ALTERNATIVE PRESENTATION

1. Company Viewpoint

   a: Sell 1000 units outside at A$195 per unit  
   b: Sell 800 units outside at A$200 per unit, transfer 200

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Price</td>
<td>A$195</td>
<td>Transfer price</td>
</tr>
<tr>
<td>Variable cost per unit</td>
<td>120</td>
<td>Variable cost per unit</td>
</tr>
<tr>
<td>Contribution</td>
<td>A$75 × 1000</td>
<td>Contribution</td>
</tr>
<tr>
<td></td>
<td>= A$75 000</td>
<td></td>
</tr>
</tbody>
</table>

   Total contribution given up if transfer occurs* = A$75 000 – A$64 000 = A$11 000

   On a per-unit basis, the relevant costs are:

   \[
   \text{Incremental cost per unit} \quad \text{incurred up to} \\
   \text{the point of transfer} + \text{Opportunity cost per unit} \quad \text{to Division A} \\
   \]

   \[
   A$120 + \frac{A$11 000}{200} = A$175
   \]

   By formula, costs are:

   \[
   \left[\text{Incremental cost per unit} \quad \text{incurred up to point} \right] + \left[\text{Lost opportunity to} \right] - \left[\text{Gain when 1st 800 units} \right] \\
   \left. \text{to transfer} \right] \left. \text{sell 200 units at A$195 per unit, for contribution of A$75 per unit} \right] \left. \text{sell at A$200 per unit, instead of A$195 per unit} \right] \\
   \\
   = A$120 + \frac{200 \times A$75}{200} - \frac{(A$200 - A$195) \times 800}{200} \\
   = A$120 + A$75 - A$20 = A$175
   \]

   *Contribution of A$30 per unit by B is not given up if transfer occurs, so it is not relevant here.

2

   a. At most, Division A can sell only 900 units and can produce 1000. Therefore, at least 100 units should be transferred at a transfer price no less than A$120. The question is whether or not a second 100 units should be transferred:

   Company Viewpoint

   a: Sell 900 units outside at A$195 per unit  
   b: Sell 800 units outside at A$200 per unit, transfer 100

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer price</td>
<td>A$195</td>
<td>Transfer price</td>
</tr>
<tr>
<td>Variable cost per unit</td>
<td>120</td>
<td>Variable cost per unit</td>
</tr>
<tr>
<td>Contribution</td>
<td>A$75 × 900</td>
<td>Contribution</td>
</tr>
<tr>
<td></td>
<td>= A$67 500</td>
<td></td>
</tr>
</tbody>
</table>

   Total contribution forgone if transfer of 100 units occurs

   \[
   = A$67 500 - A$64 000 = A$3 500 \text{ (or A$35 per unit)}
   \]
Incremental cost per unit incurred up to point of transfer + Opportunity cost per unit to Division A = Transfer price

A$12 + A$35 = A$155

b. By formula:

\[
\text{Transfer price} = \left( \text{Incremental cost per unit incurred up to point of transfer} \right) + \left( \frac{100 \times A$75}{100} \right) - \left( \frac{(A$200 - A$195) \times 800}{100} \right)
\]

\[
= A$120 + A$75 - A$40 = A$155
\]

Transfer Price Schedule (minimum acceptable transfer price):

<table>
<thead>
<tr>
<th>Units</th>
<th>Transfer Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–100</td>
<td>A$120</td>
</tr>
<tr>
<td>101–200</td>
<td>A$155</td>
</tr>
<tr>
<td>201–1000</td>
<td>A$195</td>
</tr>
</tbody>
</table>

19-30 (30–35 min.) Effect of different transfer-pricing methods on division operating profit

1. Kilograms of blackcurrants harvested 400 000
   Litres of juice processed (500 L per 1000 kg) 200 000
   Revenues (200 000 L × A$2.10 per L) A$420 000
   Costs
      Harvesting Division
         Variable costs (400 000 kg × A$0.10 per kg) A$40 000
         Fixed costs (400 000 kg × A$0.25 per kg) 100 000
         Total Harvesting Division costs 140 000
      Processing Division
         Variable costs (200 000 L × A$0.20 per L) A$40 000
         Fixed costs (200 000 L × A$0.40 per L) 80 000
         Total Processing Division costs 120 000
         Total costs 260 000
      Operating profit A$160 000
2.

### Internal Transfers at 200% of Full Costs vs. Market Prices

<table>
<thead>
<tr>
<th></th>
<th>Full Costs</th>
<th>Market Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvesting Division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>A$280 000</td>
<td>A$240 000</td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division variable costs</td>
<td>40 000</td>
<td>40 000</td>
</tr>
<tr>
<td>Division fixed costs</td>
<td>100 000</td>
<td>100 000</td>
</tr>
<tr>
<td>Total division costs</td>
<td>140 000</td>
<td>140 000</td>
</tr>
<tr>
<td>Division operating profit</td>
<td>A$140 000</td>
<td>A$100 000</td>
</tr>
<tr>
<td>Harvesting Division manager's bonus</td>
<td>A$7 000</td>
<td>A$5 000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Full Costs</th>
<th>Market Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Division</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenues</td>
<td>A$420 000</td>
<td>A$420 000</td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transferred-in costs</td>
<td>280 000</td>
<td>240 000</td>
</tr>
<tr>
<td>Division variable costs</td>
<td>40 000</td>
<td>40 000</td>
</tr>
<tr>
<td>Division fixed costs</td>
<td>80 000</td>
<td>80 000</td>
</tr>
<tr>
<td>Total division costs</td>
<td>400 000</td>
<td>360 000</td>
</tr>
<tr>
<td>Division operating profit</td>
<td>A$ 20 000</td>
<td>A$ 60 000</td>
</tr>
<tr>
<td>Processing Division manager’s bonus</td>
<td>A$1 000</td>
<td>A$3 000</td>
</tr>
</tbody>
</table>

3. Bonus paid to division managers at 5% of division operating profit is computed above and summarised below:

<table>
<thead>
<tr>
<th>Internal Transfers at 200% of Full Costs</th>
<th>Internal Transfers at Market Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvesting Division manager’s bonus</td>
<td>A$7000</td>
</tr>
<tr>
<td>(5% × A$140 000; 5% × A$100 000)</td>
<td>A$5000</td>
</tr>
<tr>
<td>Processing Division manager’s bonus</td>
<td>A$1000</td>
</tr>
<tr>
<td>(5% × A$20 000; 5% × A$60 000)</td>
<td>A$3000</td>
</tr>
</tbody>
</table>

The Harvesting Division manager will prefer to transfer at 200% of full costs because this method gives a higher bonus. The Processing Division manager will prefer transfer at market price for its higher resulting bonus.

Healthy Harvest Ltd may resolve or reduce transfer pricing conflicts by:

- Letting division managers’ bonuses based on overall Healthy Harvest Ltd’s profits in addition to division operating profit. This will motivate each manager to consider what is best for Healthy Harvest Ltd’s overall and not be concerned with the transfer price alone.
- Letting the two divisions negotiate the transfer price between them. However, this may result in constant re-negotiation between the two managers each accounting period.
- Using dual transfer prices. However, a cost-based transfer price will not motivate cost control by the Harvesting Division manager. It will also insulate that division from the discipline of market prices.
19-31 (25 min.) **Goal-congruence problems with cost-plus transfer-pricing methods, dual pricing system (continuation of 19-30)**

1. Two examples of goal congruence problems that arise if a transfer price of 200% of full costs is mandated and Hampdon’s decentralisation policy is adopted are:
   a. The Processing Division manager will prefer to buy blackcurrants from an external supplier at A$0.60 per kg, incurring some extra purchasing costs and lowering Healthy Harvest Ltd’s overall operating profit. Healthy Harvest Ltd will incur costs of A$0.60 per kg and save variable costs of only A$0.10 per kg.
   b. The Harvesting Division manager is forced to sell to an outside purchaser (because the Processing Division prefers to purchase from an external supplier) when it is better for Healthy Harvest Ltd to process internally.

2. **Transfer into buying division at market price**
   Harvesting Division to Processing Division = A$0.60 per kg of blackcurrants

   **Transfer out of selling division at 200% of full costs**
   Harvesting Division to Processing Division = 2.0 × (A$0.10 + A$0.25) = A$0.70 per kg of blackcurrants

As calculated in Requirement 2 of 19-30 and also shown below, under the dual transfer-pricing policy, the Harvesting Division will earn an operating profit of A$140 000 and the Processing Division will earn an operating profit of A$60 000.

<table>
<thead>
<tr>
<th>Harvesting Division</th>
<th>200% of Full Costs</th>
<th>Market Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues (400 000 kg × A$0.70 per kg)</td>
<td>A$280 000</td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division variable costs (400 000 kg × A$0.10 per kg)</td>
<td>40 000</td>
<td></td>
</tr>
<tr>
<td>Division fixed costs (400 000 kg × A$0.25 per kg)</td>
<td>100 000</td>
<td></td>
</tr>
<tr>
<td>Total division costs</td>
<td>140 000</td>
<td></td>
</tr>
<tr>
<td>Division operating profit</td>
<td>A$140 000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processing Division</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues (200 000 L × A$2.10 per L)</td>
<td>A$420 000</td>
<td></td>
</tr>
<tr>
<td>Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transferred in costs (400 000 kg × A$0.60 per kg)</td>
<td>240 000</td>
<td></td>
</tr>
<tr>
<td>Division variable costs (200 000 L × A$0.20 per L)</td>
<td>40 000</td>
<td></td>
</tr>
<tr>
<td>Division fixed costs (200 000 L × A$0.40 per L)</td>
<td>80 000</td>
<td></td>
</tr>
<tr>
<td>Total division costs</td>
<td>360 000</td>
<td></td>
</tr>
<tr>
<td>Division operating profit</td>
<td>A$60 000</td>
<td></td>
</tr>
</tbody>
</table>
3. Under the dual transfer pricing policy, the following table shows the operating profits for each division:

<table>
<thead>
<tr>
<th>Division</th>
<th>Operating Profit (A$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvesting Division</td>
<td>140,000</td>
</tr>
<tr>
<td>Processing Division</td>
<td>60,000</td>
</tr>
<tr>
<td>Healthy Harvest Ltd</td>
<td>200,000</td>
</tr>
</tbody>
</table>

The overall company’s operating profit from harvesting and processing 400,000 kg of blackcurrants is A$160,000 (see Problem 19-30, requirement 1).

A dual transfer-pricing method entails using different transfer prices for transfers into the buying division and transfers out of the supplying division. As a result, the sum of division operating profits does not equal the total company’s operating profit.

4. Problems which may arise if Healthy Harvest Ltd uses the dual transfer-pricing system include:

a. It may reduce the incentives of the supplying division to control costs since every A$1 of cost of the supplying division is transferred out to the buying division at A$2.00.

b. A dual transfer-pricing system does not provide clear signals to the individual divisions about the level of decentralisation top management seeks.

c. It insulates the Harvesting Division manager from the frictions and the discipline of the marketplace because costs, not market prices, affect the revenues of the supplying division.