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## **Instructional Note**

# **Team Assessment Task for Management Accounting: A Divisional Management Case Study Approach**

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### **Abstract**

*Quality teaching in higher education promotes students' understanding of core concepts and encourages them to engage with the subject matter. Transfer pricing problems provide an excellent illustration of the way accounting information can be used in the commercial sector. From another perspective, transfer pricing is a complex issue that can be difficult to teach to accounting students, especially those with little tolerance for ambiguity. The role play method promotes involvement with the task and offers a way to help students gain a personal understanding of the issues, and to develop some of the skills that are needed by management accountants.*

**Key words:** *Team work, Management Accounting, Case Study.*

## Introduction

Quality teaching in higher education promotes students' understanding of core concepts and encourages them to engage with the subject matter (Ramsden 2003). Management accounting educators have been criticised in the past (see, for example, Albrecht & Sack 2000) for encouraging memorisation of extensive, rule-based content rather than using techniques that support deep understanding and the acquisition of relevant skills.

There is wide agreement amongst the literature on management accounting education regarding the skills that graduating management accountants need in order to succeed. As well as an understanding of how business functions and an ability to apply accounting knowledge, management accountants need analytical and problem-solving skills, and strong interpersonal and communication skills (Albrecht & Sack 2000; Siegel & Kulesza 1996; Siegel & Sorensen 1999). A fundamental concept in management accounting is its difference from financial accounting. The format and content of management accounting information is dictated by the decision-making needs of internal users (management) and is not subject to rules or standards like financial accounting (Hansen & Mowen 2005).

The ambiguity inherent in management accounting can be difficult to grasp for accounting students, who typically have a need for structure and tend to prefer well-defined tasks that have one right answer (AICPA 2003). Transfer pricing problems are an excellent example of the nature of management accounting information, where there may be a range of outcomes acceptable to the firm, and the final outcome may depend on the negotiating skills of the parties involved (Hansen & Mowen 2005). For this reason it is not surprising that transfer pricing problems have featured in some prominent teaching cases (see, for example, Harvard Business School's *Birch Paper Company*; Feltham, Philips & Sheehan 2003; Hoffjan 2005; Manes 1970).

The case study simulation, which requires students to role-play the various parts in a scenario, is one method that has been used to improve student learning. It has been effective in developing marketing and teamwork skills, and overcoming difficult-to-dispel myths in sports marketing (Gillentine & Schulz 2001); in providing students with an opportunity to experience and learn from project failure in system development (Nulden & Scheepers 2002); preparing them to handle crises in public relations (Baglione 2006); and in teaching negotiation skills in environmental regulatory negotiation (Ramus 2003). Within the accounting discipline, role-play has been used to help students gain an understanding of the revenue cycle (Hayes & Reynolds 2005), to provide them with experience at evaluating internal control and detecting fraud (Janvrin 2003), and to develop their emotional engagement with accounting ethics (McPhail 2002). Student feedback in all cases was positive and often described improved skills, heightened involvement and a changed perspective on, or improved understanding of, the subject matter (Baglione 2006; Gillentine & Schulz 2001; Hayes & Reynolds 2005; McPhail 2002; Nulden & Scheepers 2002).

This case study simulation uses role-play to engage students personally with an experience of how management accounting information is used within an organisation. The incentive scheme ensures that each has a stake in the outcomes of negotiations, and the case is constructed to demonstrate how management accounting information can be manipulated to serve conflicting interests.

While the complexities of transfer pricing problems have been thoroughly explored in previously published cases (such as those referred to above), this simulation exercise has some important distinguishing features that make it a useful contribution to the body of literature in this area. Firstly, this exercise is explicitly designed to be performed in teams. The importance of team-work and decision-making skills to

accounting graduates has been expressed repeatedly in the literature (Albrecht & Sack 2000; Siegel & Kulesza 1996; Siegel & Sorensen 1999; Sneed & Morgan 1999). The case method has proved an effective approach for supporting team-based learning and problem-solving (Tran & Latapie 2007). Recent research indicates that leadership and team dynamics impact on the learning and performance outcomes, and hence the effectiveness, of group simulation exercises (Adobor & Daneshfar 2006; Anderson 2005; Markulis, Jassawalla & Sashittal 2006). By explicitly addressing these issues, it is hoped that the simulation will increase student understanding of, and skills in managing, conflict within teams.

Secondly, the primary focus of the case is not on improving the students' skill at solving complex accounting problems, but on helping them to develop an understanding of the way that accounting information is used within organisations. Hence, the actual calculations involved are not overly difficult. A degree of simplicity in the case scenario increases its usefulness as a teaching tool (Hoffjan 2005). The difficulty of the case lies in the group coming to an agreement as to which outcome all parties will be satisfied with, in the face of conflicting incentives and incomplete information. This is further complicated by the existence of the second question.

The two-problem scenario is the third important distinguishing feature of this case simulation. This utilises one of the strengths of simulation exercises, in that students experience the consequences of their first decision (Faria 1976). The interaction of the incentive scheme with the outcome of the transfer pricing problem will impact on the motivations of team members when they face the second decision.

### **Case Learning Objectives**

The learning objectives of this task are aimed at addressing a number of key attributes generally aligned to the learning outcomes of management accounting courses. These attributes are identified as:

- *Negotiation skills*; each team member role plays the part of a manager and is required to negotiate with his/her superior.
- *Analytical skills*; each team member is required to analyse the data and prepare a report regarding their division's performance, request changes to operational issues as well as pricing issues and to justify their bonus reward scheme.
- *Application of Accounting Knowledge*; each team member has to demonstrate their knowledge of the various management accounting issues inherent in the case study.
- *Team-work skills*; to succeed in achieving their divisional aspirations the team members have to work as a team and combine in directing their efforts to achieving the overriding organisational goals.

Assessment is based upon these learning objectives and follows a more andragogical approach with the lecturer adopting an overseeing role as facilitator.

### **Implementation Guidelines**

Students are instructed to form teams consisting of 3 people in each team, a Divisional Controller, and 2 Divisional Managers. They are instructed that the Divisional Controller has responsibility for managing the 2 divisions and must report to the General Manager (who in terms of this case may be the lecturer/facilitator). The Divisional Managers have responsibility for the operational performance of their division and must report to the Divisional Controller. They are also given some limited information about the organisation and the type of operations undertaken by the 2 divisions. Once they have been advised of this organisational framework they are required to nominate and determine who will occupy the Divisional Controller position. The Divisional Controller must then discuss the 2 divisions and ascertain who is best qualified for the different positions. When this has been accomplished the Divisional Controller is interviewed by

the General Manager to establish who the Divisional Managers are for the team and a brief justification for their selection i.e. experience, education etc.

The Divisional Controller is then provided with the Case Study notes and his/her instructions. The Divisional Controller receives all information provided about the company, whereas the Divisional Managers only receive information about their respective divisions. The instructions and cost information for the separate divisions are contained in a sealed envelope to ensure they can be kept from the other team members. The reason for this is to assess the negotiation skills of the different team members and their ability to use the information to their advantage. The information can be manipulated for each team and can be varied from year to year to minimise the possible effect of collusion.

### **Assessment Method**

The Facilitator as General Manager reviews the report from the Divisional Controller and his/her response to the Divisional Manager's reports. This part of the assessment is based upon three criteria: correctness of the information and calculations; the extent of negotiations, as evidenced by comments within the reports; and the level of analysis, as evidenced by the extent to which the decisions at each level are consistent with the limited resources and the stated goals and objectives provided. An itemised marking guide may be used to direct attention of the marker to the main issues and this may also incorporate a weighting factor for the various issues.

To further enhance the assessment process the General Manager conducts an interview/meeting of the team on the pretence of seeking to clarify decisions and recommendations in the report. In effect this interview/meeting is intended to test the validity of the reports and the knowledge of each person in the role play. With regards to the manner in which this is conducted the General Manager is to be seated at the head of the table with the Divisional Controller on his/her right. The 2 Divisional managers are on the left facing the Divisional Controller. This is a deliberate ploy to entice argument and debate by setting up the potential for conflict. Typically the questions should focus on issues such as:

#### *Divisional Controller:*

- Ask for his/her response to the Divisional Managers requests and feedback
- Ask for his/her response to your (GM) suggestions for changes or decisions

#### *Divisional Managers:*

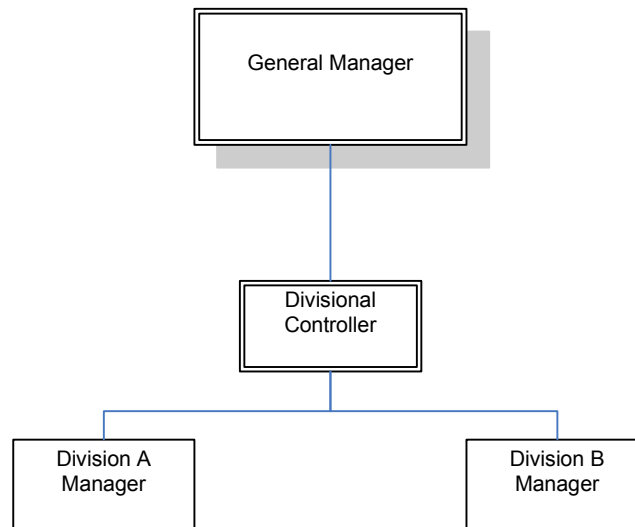
- Ask each for their response to the DC's feedback/decision/recommendation to their original requests
- Ask for their response to the other DM's requests and its likely impact on their division
- Ask each for their response to your recommendation or decision you have given the DC so far.

## **The Case Overview**

### **General Overview and issues**

The firm has two divisions. Division A manufactures finished products, while Division B manufactures components. The firm recently acquired Division B, which has been selling its components to external customers. The acquisition has made it possible for Division A to purchase some of the components of its products from Division B. No such transfers have yet taken place.

The organisational structure of this firm is hierarchical with a General Manager, a Divisional Controller and a Divisional Manager for each of the two divisions.



### The Incentive Scheme

The approach used in this case study is intended to place students in conflict with each other and with the organisational setting so that by providing conflicting signals they are encouraged to question their behaviour as well as the other team members. The incentive scheme forces the student to justify his/her decisions with regards to the transfer pricing and capital investment in light of the bonus calculation for the Division. This is to bring to their attention the issue of having incentive schemes based on inappropriate aspects of the operations of a Division. Manipulations of this may be appropriate where a large number of teams is involved.

- The Divisional Controller's bonus is based on the corporate performance. The bonus calculation is a rate equivalent to 5% the percentage increase in profit. Profit is defined as earnings before interest and taxes (EBIT). The bonus is subject to the Divisional Controller achieving a minimum of 15% return on assets for all new investments. This includes the acquisition of Division B.
- The Manager of Division A's bonus calculation is a rate equivalent to 5% the percentage increase in gross profit for the period. Gross profit is defined as sales revenue less variable costs.
- The Manager of Division B's bonus calculation is a rate equivalent to 5% the percentage increase in gross profit for the period. Gross profit is defined as sales revenue less variable costs.

It is anticipated that the Divisional Controller will have an incentive to influence the transfer pricing outcome towards a higher price for Division B, in order to achieve the 15% ROI for the acquisition of Division B. The handling of cost information makes it possible for him/her to achieve this without the direct interference that would affect divisional autonomy.

Furthermore, although by every measure the capital investment project is beneficial for the firm and both Divisions, it is expected that the Divisional Controller will prefer not to approve the project because it will reduce ROI beyond the minimum required for his/her bonus calculation. The fact that taking on the project would increase the gross profits

of both divisions, and therefore the bonuses of both Divisional Managers, should lead to conflict over the investment decision.

The strategy of creating non-congruent goals among the team members ensures that this is not the kind of group-work project where team members can simply allocate and complete separate tasks, and then submit the final product together. This simulation exercise exposes students to a more realistic team setting, where decisions must be made by people with varying agendas, and the individual’s negotiation skills will determine to what degree the final choice meets his/her needs.

**Transfer Pricing Issue**

**The following information is provided to the Division A Manager and the Divisional Controller:**

Division A has consistently sold 100,000 units of 303X each year at a unit price of \$24.00. The division has been purchasing component 16KX externally for \$10. The projected sales budget is

*(Manipulation of Information ~*

*Version (1) given current market conditions this is the maximum price and sales will remain at 100,000 units. Division A is operating at full capacity for this product.*

*Version (2) analysis of current market conditions has revealed that Division A could sell an additional 50,000 units to a new market for the 303X, at a reduced price of \$20. Division A has unused capacity and could produce an additional 60,000 units.*

The current cost of manufacturing the unit 303X is as follows:

Component 16KX	\$10.00
Direct materials	\$5.00
Direct labour	\$4.00
Variable overhead	\$1.50
Variable selling costs	\$2.00
Fixed overheads	<u>\$1.00</u>
Total cost	<u>\$22.50</u>

**The following information is provided to the Division B Manager and the Divisional Controller:**

Division B produces the component 16KX

*(Manipulation of Information ~*

*Version (1) given current market conditions Division B could sell the 100,000 units it produces to external buyers at \$10.00 per unit. Division B is operating at full capacity for this product.*

*Version (2) given current market conditions Division B currently sells 100,000 units of 16KX to external buyers at \$10.00 per unit. Division B has capacity to produce a total of 180,000 units.*

The cost of manufacturing the unit 16KX is as follows:

Direct materials	\$2.00
Direct labour	\$1.00
Variable overhead	\$1.50
Variable selling costs	\$1.00
Fixed overheads	<u>\$2.00</u>
Total cost	<u>\$7.50</u>

The variable selling costs are avoidable if the component is sold internally.

**The following additional information is provided only to Divisional Controller:**

Division B was acquired at a total cost of \$2,300,000.

**Instructions for action required on this issue:**

- **Division A Manager:** calculate contribution margin of 303X to your division and identify the preferred transfer price for your division. Negotiate with Division B Manager.
- **Division B Manager:** calculate the contribution margin of 16KX to your division and identify your preferred transfer price for your division. Negotiate with Division A Manager.
- **Divisional Controller:** review the proposals and arguments from the Divisional Managers and calculate the contribution margin of both products to the firm. Identify the preferred transfer pricing model from the perspective of the firm. Advise the Divisional Managers of your recommended preferred transfer price and justify your decision.

**Capital Investment Project****The following information is provided to the Division B Manager and the Divisional Controller:**

Division B has received a contract for consideration from Division A. The contract is for a component in a product for which the demand is expected to be only three years. To produce the amount required, the division will need to buy additional equipment and will need approximately 25,000 square metres of additional space. 12,500 square metres of presently unused space is available for the next three years. The present lease has 10 years to run and the cost per square metre is \$3.00 per year, which includes the 12,500 square metres of unused space. Division B can rent another 12,500 square metres adjoining its present facility for three years at a cost of \$4.00 per square metre per year should the decision be made to accept this project.

The additional equipment can be purchased for \$1,000,000 and would have a salvage value of approximately \$180,000 at the end of the third year. The estimates of revenues and expenses for this project over the three years have been estimated as follows:

	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>
Sales	\$950,000	\$1,800,000	\$840,000
Material, labour, variable overhead	400,000	750,000	350,000
Allocated fixed overhead	40,000	75,000	35,000
Rent	87,500	87,500	87,500
Depreciation	300,000	300,000	300,000
Total cost	\$827,500	\$1,212,500	\$772,500
Income before tax	122,500	587,500	67,500
Income tax (30%)	36,750	176,250	20,250
	\$85,750	\$411,250	\$47,250

**The following information is provided to the Division A Manager and the Divisional Controller:**

Division A has a product 423T; the key component for this product has been acquired from an outside supplier for the last five years due to the copyright held by the supplier. The copyright has now expired and Division A is under no obligation to continue to purchase the component from the outside supplier. Subsequently, the offer has been made to Division B to supply the component. The product however has reached a point where it is expected to be obsolete after the next three years.

Division A could continue to purchase the component from the outside supplier over the next three years at a cost of \$1,500,000 for year 1, \$2,400,000 for year 2, and \$1,200,000 for year 3. The equipment used for this product has no other possible use and would have a scrap value of \$20,000; the space currently used for this production could be used for storage and would save Division A \$15,000 a year in additional rent that it currently pays.

	Year 1	Year 2	Year 3
Sales (projected)	\$3,000,000	\$4,800,000	\$2,400,000
Material			
Labour, variable overhead	750,000	1,200,000	600,000
Fixed overhead	50,000	50,000	50,000

**Instructions for action required on this issue:**

**Division B Manager:** should prepare a report to argue for the project identifying the pay back period, accounting rate of return and net present value based on a discount rate of 15%.

**Division A Manager:** should prepare a report arguing for the benefits of this project to Division A in terms of continued income and increased profitability.

**The Divisional Controller:** should consider both arguments and will need to consider the possibility of not accepting the project for Division B and whether Division A should continue to make product 423T.

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