PASS

MANAGEMENT ACCOUNTING TECHNICAL REVIEW

2016

INTRODUCTION

Under the new CPA certification program, management accounting has become very important on the CFE and it will therefore be critical for students to have a strong grounding in this area. Management accounting can come up on the Day 2 - Elective Comp as a common area that needs to be addressed by all students regardless of the depth area chosen. It can also be tested heavily on the Day 3 – Multis, which was the case in the first CFE in 2015.

The purpose of the Management Accounting Technical Review Book is to provide a detailed review of the major management accounting topics that could be tested on the CFE.
The topics covered are based on the *CPA Competency Map Knowledge Supplement*.

Given that there is very little history for the CFE, at this point it is impossible to say which topics from the *CPA Competency Map Knowledge Supplement* will often be tested on the CFE. An attempt was therefore made to cover off all of the major topics. However, those topics that are more theoretical and are therefore much less likely to be tested on a case exam like the CFE, have been placed in an Appendix. *Minimal time should be spent on the topics in the Appendix*.

Most topics are covered at a relatively high level of depth, given that at this point it is impossible to determine the precise level of depth that will be required on the CFE for management accounting. For example, the notes demonstrate how to calculate all of the different variances as at this point it is impossible to determine whether this topic will be tested in depth. It was therefore felt that students are better off possibly knowing more than they need to know for the CFE than knowing less.

As the whole purpose of these notes is to prepare students for the CFE, in every section of the notes there is a discussion of how a particular topic may be tested on the CFE.

These notes should be used in conjunction with the case scenarios which are intended to be reflective of the types of scenarios that may come up on the CFE. It is also important to go over the problems which provide examples of various calculations students could be called upon to do on the CFE.

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LECTURE

TOPICS COVERED IN LECTURE NOTES

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MANAGEMENT CONTROL SYSTEMS

DECENTRALIZATION

Why Decentralize?

- Top management focus on long range planning
- Better decision making
- Better training of managers
- Increased job responsibility
- Better measurement of managers performance

Why Not To Decentralize?

- Can lead to sub-optimal decisions
- Duplication of services leading to inefficiencies (e.g. advertising, accounting, Human Resources)
- Increased reporting costs

Management Control Systems

A management control system is a responsibility centre is a point in an Organization where there is control over costs or revenues.

Revenue Centre – controls revenues only

Cost centres - controls costs only

Profit centres - controls costs and revenues

Investment centre - controls costs, revenues and investment funds

Evaluating Responsibility Centres

- Managers and divisions should only be evaluated on controllable costs

Return on Investment (ROI)

ROI = (Net operating inc./sales) x (sales/ave. operat. assets)

Net operating income = inc. before interest & taxes

Ave. operating assets = excluding non-operating assets

- ROI measures how much money 1 dollar of sales will bring in and how many times (I.e. - margin x turnover)

Controlling ROI

To increase ROI 1) Increase sales 2) Reduce expenses 3) Reduce assets

Example

net operating income	$ 10,000
sales	100,000
operating assets	50,000

ROI = (10,000/100,000) x (100,000/50,000) = 20%

Residual income (RI)

RI = Net operating income - (Req. ROR. x Ave Operat. Assets)

ROR = required rate of return (on assets)

ROR is generally based on the company's cost of capital

A project should be accepted if it produces a return greater than the required rate of return. (i.e. - the residual income is positive)

Example

Average operating assets	$100,000
Net operating income	$ 20,000
Minimum ROR assumed (15%)	15,000
Residual income	$ 5,000

Therefore, project is providing a return greater than 15%, and should be accepted.

ROI vs RI

- RI concentrates on maximizing a number (income)
- ROI maximizes a percentage (rate of return)

Advantages of ROI

- Utilizes both earnings and capital
- Different divisions with different sizes can be compared as ROI is a percentage and not absolute amount

Disadvantages of ROI

- Easier to manipulate through shifting expenses or investments to another period – e.g delaying investment
- Sub-optimal decisions possible - as divisions wishes to maximize *their* rate of return, not necessarily companies – therefore management may reject investment that has an acceptable ROI because it will reduce the divisional ROI – see example below
- Does not tie to discounted cash flow analysis – ignores time value of money
- Penalizes managers for newer investment – as assets will be increased and hence the denominator of the ROI equation will be increased

Advantages of RI

- Focuses on an income dollar amount
- Easier to understand
- Ties in better to cash flow, given that we are dealing with a dollar amount
- Accepts profitable decisions that ROI would reject i.e. no sub optimization; manager will accept project as long as the return exceeds the required rate of return – see example below

Disadvantages of RI

- Cannot compare divisions of different sizes
- Manipulating expenses or revenues will affect RI
- Bias towards larger divisions – as all things being equal a bigger division will have a higher ROI given that income figures for a large company will be higher
- No consideration of time value of money i.e. discounting is not built into the equation (similar ROI)

ROI vs RI - New Project Comparison

	ROI Division A	RI Division B
Ave. operating assets	$100,000 (a)	$100,000
Net operating income	$ 20,000 (b)	$ 20,000
ROI (b) / (a)	20%	
Minimum required rate of return 15% (Assume 15% x $100,000)		15,000
Residual income		$ 5,000

Required:

Will a new project with a required investment of $25,000 and return of 18% on invested assets be accepted by division A and division B?

Division A

	New Project	Present	Overall
Ave. operating assets (a)	$25,000	$100,000	$125,000
Net operating income (b)	4,500	20,000	24,500
ROI (b) / (a)	18%	20%	19.6%

$25,000 x 18 % = $4,500

Division B

	New Project	Present	Overall
Ave. operating assets	$25,000	$100,000	$125,000
Net operating income	4,500	20,000	24,500
Minimum required rate of return 15% (assume 15% x $25,000)	3,750	15,000	18,750
Residual income	$ 750	$ 5,000	$ 5,750

Conclusion

Division A will refuse new project as overall rate of return is only 19.6% which is a decrease from 20% - this constitutes sub-optimization as the project generates a return in excess of the company's required rate of return, so it would have been good for the company for the investment to be accepted.

Division B will accept project as overall residual income increases – sub-optimization is avoided.

TESTING OF MANAGEMENT CONTROL SYSTEMS ON CFE

Very easy to test evaluation of management on the CFE

You may be provided with a multi divisional company and you may need to determine whether the management evaluation system for each division is appropriate.

Most important factor to consider is control – managers should be evaluated based on what they have control over

If management is rewarded or penalized for things over which they have no control that would be a deficiency – conversely, if factors over which management have control are not built into the management evaluation system, that would also be a deficiency e.g. management of division has control over income and investment but management is only evaluated based on profit rather than say ROI or residual income.

May also need to consider allocated costs – if divisional management is being evaluated based on profitability it is questionable whether corporate costs should be allocated to divisions in calculating divisional profitability as even though the division may benefit from corporate costs, divisional management does not have control over corporate costs.

May also have to consider the reasonableness of corporate allocations as in some cases they may be arbitrarily allocated; student would then be expected to adjust divisional profits based on a more appropriate allocation before assessing divisional management performance.

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PROBLEMS

MANAGEMENT ACCOUNTING TECHNICAL REVIEW - PROBLEMS

TRANSFER PRICING

Problem 1

Lorex Corporation is a manufacturer of computer keyboards. They have two major products, the Cannet1 keyboard and the Cannet2 keyboard. The Ontario plant produces both products while the Quebec plant produces the Cannet1 keyboard only. The Cannet1 keyboard is priced at $185 and the Cannet2 keyboard is priced at $375. Sales of the Cannet1 keyboard have dropped over the years due to the popularity of the Cannet2 keyboard, which is a more advanced keyboard. Costs incurred in the manufacture of both keyboards are 60% variable and 40% fixed. The gross margin is 35%. Lorex Corporation is currently operating at full capacity (i.e. in order to produce more Cannet2 keyboards, they would have to produce fewer Cannet1 keyboards).

What is the **minimum** transfer price which could be charged for the Cannet2 keyboard if sold to the Quebec plant?

Problem 2

Respit Inc. (RI) has two divisions: one division produces cash registers and the other division retails sporting goods. Both divisions are evaluated as profit centers. The Sporting Goods Division would like to order 350 cash registers from the Cash Register Division. The costs associated with manufacturing the registers are as follows:

Costs (per register)

Direct labour	$500
Direct materials	250
Variable overhead	150
Fixed costs	$385,000 per year

The above fixed costs are based upon a volume of 1,750 units. With additional volume more support staff would have to be hired and fixed costs would increase by 5%. The maximum volume the Cash Register Division can accommodate even with increased fixed costs is 1,800 units.

During the current year, the Cash Register Division expects to be able to sell 1,600 units to external customers. Registers can be sold to external customers at a price of $1,450.

Which of the following is the **minimum** price that the manager of the Cash Register Division would be willing to accept for the order from the Sporting Goods Division?

TRANSFER PRICING

Solution to Problem 1

The fixed costs are:

Cannet1	($185 - (.35 x $185)) x 40% =	$48
Cannet2	($375 - (.35 x $375)) x 40% =	$98

The variable costs are:

Cannet1	($185 - (.35 x $185)) x 60% =	$72
Cannet2	($375 - (.35 x $375)) x 60% =	$146

Therefore, the minimum transfer price which could be reasonably justified on the Cannet2 product is:

Variable costs of Cannet2	$146
Plus Contribution Margin of Cannet1 ($185 - $72)	113
	$259

Solution to Problem 2

As the Cash Register Division is evaluated as a profit center, they would not be willing to accept a price below the amount necessary to at least recover their incremental costs associated with the order, as well as any lost contribution margin on sales to external customer, forfeited as a result of the internal sale.

By accepting the order the Cash Register Division will have to give up sales of 150 units as they have demand for 1,600 units; the order from the other division is 350 units and full capacity is only 1,800 units.

Therefore, the Division will not sell the registers at an amount below the incremental variable costs per unit of $900 for the first 200 units (which can be sold without giving up sales) and for the next 150 units they will need to recover not only the variable costs but also the lost contribution margin on the sales. Therefore they will need to recover the full sales price of $1,450. In addition they will need to recover the additional fixed costs of $19,250 which are only being incurred due to the increased volume generated by the order from the Sporting Goods Division.

Thus the Cash Register Division will have to recover an amount in excess of $416,750 based upon the following calculation:

$900 (total variable costs) X 200 registers plus $1,450 X 150 registers plus $19,250

(incremental fixed costs) = $416,750.

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CASE SCENARIOS

CASE 1

QUESTION AND SOLUTION

CASE 1

Adapted from 2005 UFE

Watkins Inc. (Watkins) is a small publicly traded manufacturer with various divisions. Initially, the Electronics Division (Electro) assembled electronic products for industrial users. This division was quite successful and Watkins was profitable at an early stage in its existence. Management soon discovered that the electronic circuitry, which was common to all of the products Watkins made, and was originally outsourced, could be made internally at a lower cost. Consequently, Watkins started the Circuitry Division (Circuit) to make the required electronic circuitry. Circuit transferred the circuitry to Electro and also developed external markets for the excess capacity. As Watkins continued to grow, it became aware of an opportunity to use its technological competitive advantage in electronic products for consumers. It added the Consumer Products Division (Consumer). Again, the electronic circuitry required was internally provided by Circuit. Electro employs 100 people; Circuit and Consumer employ 60 and 40 people respectively.

Up until very recently, profits for Watkins exceeded expectations. However, increased competition and a recent downturn in demand for electronic products have caused a considerable drop in profits for the company. Information about the profitability of its divisions for the first nine months of the latest fiscal year and about the costs associated with Circuit are provided in Exhibit I. Senior management now believes that sourcing the circuitry externally might be more cost effective than producing it internally. Management believes, based on the volume of electronic circuitry required for Electro and Consumer, that they can negotiate a purchase price of $28 per unit with an outside supplier. The price is based on receiving large volume discounts.

At the May 1, 2016 board meeting, a proposal was presented to the Board to outsource the circuitry for Watkins other divisions and to dispose of Circuit. Some Board members were surprised by senior management's suggestions and questioned the underlying belief that outsourcing the circuitry will be more cost effective. The Board tentatively approved a plan to outsource the circuitry and dispose of Circuit, but requested further analysis supporting the profitability of this course of action.

It is now May 15, 2016 and the president of Watkins, Jeff Watkins, has approached you, CPA, an analyst in the corporate office, to assist in answering the Board s requests.

> Jeff: CPA, please prepare a report to me analyzing the concerns raised by the Board. Also, the discussion at the Board meeting raised a question in my mind about our divisional transfer pricing policy. I'm assuming that the policy does not need to change. What do you think?

After your conversation, you started gathering information. You started by obtaining the divisional financial statements for the current year. You then met with the general manager of Circuit, Edward Norton. Your notes from the meeting are summarized in Exhibit II.

EXHIBIT I

DIVISIONAL FINANCIAL INFORMATION
For the nine months ended April 30, 2016
(unaudited)

	Electro	**Circuit**	**Consumer**	**Total**
Sales revenue External	$ 6,000,000	$ 825,000	$ 7,000,000	$ 13,825,000
Sales revenue Internal	-	1,410,000	-	1,410,000
	6,000,000	2,235,000	7,000,000	15,235,000
Cost of goods sold	3,600,000	2,600,000	3,500,000	9,700,000
Gross margin	2,400,000	(365,000)	3,500,000	5,535,000
Divisional selling, general, and administration costs	1,000,000	400,000	2,000,000	3,400,000
Operating income	1,400,000	(765,000)	1,500,000	2,135,000
Corporate cost allocation (Note)	500,000	500,000	500,000	1,500,000
Income (loss)	$900,000	$(1,265,000)	$1,000,000	$635,000

Note

Corporate costs allocated include costs relating to marketing, corporate accounting, legal costs, human resources and Information Technology (IT) Services. All of the divisions are highly computerized (especially Electro which has twice as many computers as the other two divisions) so all of the divisions require ongoing IT support. IT also develops computer systems used for manufacturing operations, administration and accounting.

CIRCUITRY DIVISION **Cost breakdown for Electronic**		**Units per year**	**Units to April. 30, 2016**
Capacity of mfg. facility		133,333	
Internal transfers			75,000**
External sales			25,000
External unit selling price	$ 33		
Costs incurred per unit:			
Materials	$ 6		
Labour	8		
Manufacturing overhead*	12		
Total	$ 26		

*Approximately 40% of the manufacturing overhead is variable
** 1/3 of the units transferred internally were sold to Electro and 2/3 of the units were sold to Consumer

EXHIBIT II

SUMMARY OF THE MEETING WITH EDWARD NORTON, CIRCUIT GENERAL MANAGER

Mr. Norton explained that Watkins is a decentralized organization and that each division is run independently by a general manager. Compensation for the managers is based on a salary with bonuses for achieving set profitability targets.

Norton: "The other divisions are allowed to buy and sell as they wish, but we have to ensure that Watkins internal requirements are met before we can sell outside. I know that our division is leaving money on the table. The price we receive from our internal sales isn't even close to what we receive when we sell our product to external buyers. The transfer price is based only on the variable cost of production, which doesn't make sense."

On top of that, head office calls us a profit centre and bases our bonuses in part on a percentage of our divisional income. It isn't fair. In addition to a low transfer price, we are allocated a high amount of costs from the corporate office. I am not sure that being treated as a profit centre makes sense; even if it does make sense, with the current transfer pricing system I am not sure that we could ever show a profit. Here is a copy of the supporting information they sent us this quarter explaining the allocation (see Exhibit III). I wish senior management would do something to make it fairer for us. With a fairer transfer price I wouldn't be surprised if we had the highest profit of all the divisions!

Mr. Norton compiled some information about the proposed sale of Circuit. He indicated that most of the manufacturing overhead costs would be saved if Circuit was sold, but Circuit supervisors would be transferred to other divisions. Their total salaries are about $250,000 per year. There will be no savings in corporate costs even if Circuit is sold.

EXHIBIT III

CORPORATE COSTS
THIRD QUARTER SUMMARY

Information Technology Department (Note 1)	$ 475,200
Legal Department (Note 2)	221,500
Marketing and Sales Department (Note 3)	463,000
Human Resource Department	110,000
Accounting Department (Note 3)	230,300
Year-to-date corporate costs	$ 1,500,000

In accordance with corporate policy, these costs have been allocated evenly to each of the divisions.

Notes:

1. Watkins is in the process of implementing a new payroll system this year for Consumer, so the cost allocation is about $300,000 higher than the same period last year. The implementation should be completed by the end of the year.

2. The lawsuit in which Electro is involved is currently being fought in court by a team of outside lawyers. We have incurred an estimated $200,000 in this case. We anticipate returning to lower, more normal legal costs in the next quarter.

3. Approximately 80% of resources of the marketing and sales departments as well as the accounting department is expended on Consumer, as they do not yet have a significant marketing and sales departments or accounting department.

CASE 1 - SOLUTION

The following issues are addressed in this report:

1. An assessment of the profitability of internally manufacturing circuitry compared to the alternative of outsourcing.
2. The implications of the current transfer-pricing policy.
3. Allocation of corporate costs to divisions.
4. Performance evaluation (bonus) for Circuit.

Issues 2 through 4 are very much intertwined as the transfer price used and allocation of corporate costs impact the bonus.

OUTSOURCING AND SALE OF CIRCUIT

Management is proposing to outsource the circuitry being made for other divisions by Circuit and then to dispose of Circuit. Some board members were surprised by this proposal and have asked for an analysis supporting the decision. My quantitative analysis of the profitability of manufacturing the circuitry compared to sourcing it externally is included in **Appendix 1**. The analysis compares the costs of producing the electronic circuitry to the outside purchase price. It is clear that the division can produce the units at a lower price than Watkins can purchase them for. The full cost to produce the units is $26 (at full capacity) compared to an external price of $28. There is a net cost to purchasing the units, based on a full production capacity of 133,333 units, of $516,666 (partly due to the fact that $250,000 of supervisor salaries will not be saved if a decision to outsource the production is taken).

There is one additional consideration. Management's plan also entails selling the division. Watkins would then also be giving up the revenues generated by the outside sales of Circuit, but will also not incur the selling, general and administrative costs of $400,000 associated with the administration, sales and marketing functions of the division. Based on my calculations, Watkins would be saving $366,668 annually by closing down the division and eliminating the administrative and selling costs associated with the division. The net cost of the decision must therefore be decreased by this amount. Therefore, overall, the net cost appears to be closer to $150,000 annually.

Based on the above, it appears better for Watkins, at a company-wide level, to manufacture the circuitry internally. I recommend not proceeding with management s plan to outsource circuitry and dispose of Circuit. The better course of action at present is to continue to produce internally.

Achieving Competent

In order to achieve competent it would have been necessary to perform a reasonable analysis of the outsourcing proposal, including a recognition of fixed and/or opportunity costs, and recommend a course of action.

The precise recommendation made would not have been important as long as a reasonable recommendation consistent with one's analysis was made.

TRANSFER PRICING, PERFORMANCE EVALUATION AND ALLOCATION OF CORPORATE COSTS

Transfer pricing

Circuit's divisional results are misleading, as the losses are being driven by the transfer price that is not reasonable. Currently, the transfer price is based on variable cost, which is a much lower cost than the market value of the circuitry. Using variable costing makes sense when the division is not at capacity or cannot sell its product outside the company but not in Circuit's situation where the division can sell externally. Management should consider changing its transfer price to better reflect the opportunity cost of selling the units internally. There are a couple of options:

1. Treat as a profit centre using market price

   Circuit is at capacity and appears able to sell its product to external clients. In fact, Mr. Norton claims he could sell more to the outside market if management would let him. As a market price is readily available ($33 or could use $28), Watkins could use that market price as the divisional transfer price. However, the market seems to be in decline, so a transfer price of $28 might be more reasonable, particularly since the other divisions could argue that they can buy the same unit from an outside supplier at this price. I have calculated the impact on profit allocation in **Appendix 2**, using a transfer price of $28, the price at which the divisions could purchase the units externally. The other two divisions may be unhappy about having to absorb the higher cost, but if they were to buy the circuitry externally, they would be paying that cost, and should therefore be willing to accept the higher transfer price.

2. Treat as a cost centre

   An alternative is to re-examine Watkins policy of classifying divisions as cost centres or profit centres for transfer-pricing purposes. Since the purpose of Circuit is to supply the other two divisions at an economical price, an argument could be made to treat it as a cost centre rather than as a profit centre. In this case, Circuit would be evaluated on its ability to control costs. The circuitry would continue to be transferred at cost in this case.

Achieving Competent

It should be noted that the above 2 options are not the only options students could have considered. What was critical for achieving competent was:

a) recognizing that the current transfer pricing policy is not appropriate (with adequate reasoning) and needs to be changed

b) providing a reasonable discussion of transfer pricing alternatives that the company could use in place of its existing policy

Corporate cost allocation

Currently, each division is being arbitrarily allocated one-third of the corporate costs which distorts the performance and hence evaluation of the divisions. The list of corporate costs suggests that costs of different types are lumped into the allocation regardless of their nature. These costs should be allocated to the divisions on different bases which take into account the extent to which corporate costs relate to a given division in order to provide a fairer allocation. In Appendix 2 corporate costs are allocated in a fairer manner. Explanations for the basis of allocation for each of the costs are provided in the notes to the Appendix.

After allocating corporate costs in a more reasonable manner (and a more appropriate transfer price is used), divisional results are more representative of performance which allows for a better assessment of overall divisional performance by management and the board. It is critical to note that after adjusting for the inappropriate transfer price and allocation of corporate costs, Circuit is actually not only profitable but more profitable than Consumer.

Performance evaluation (bonus)

It is questionable whether corporate costs should be allocated to divisions at all as managers are being evaluated on costs they cannot control. While the divisional managers need to be aware of these costs, they cannot control them and therefore could object to their performance bonuses being impacted by their allocation. One option is for Watkins to evaluate performance based on divisional operating income, rather the divisional net income. Only controllable costs would then impact the assessment of divisional performance.

On the other hand divisions do benefit from the corporate costs and therefore it can be argued that an allocation should be made to take that into account.

In the final analysis, based on Appendix II even after allocating corporate overhead, (on a reasonable basis), Circuit shows a profit, which should positively impact bonuses for Circuits management which are in part based on a percentage of profit.

<u>Achieving Competent</u>

In order to achieve competent a student would not necessarily have to allocate corporate costs in the exact manner in which they were allocated in the solution. What was critical for achieving competent was:

a) recognizing that the original allocation of corporate costs was completely arbitrary and not reasonable/fair which distorts divisional evaluation
b) re-allocating the corporate costs in a reasonable manner <u>with explanation</u>

c) concluding on the profitability of Circuit compared with the other divisions (in light of Norton's comment that with a fairer transfer price he wouldn't be surprised if his division had the highest profit of all the divisions)

d) discussing the bonus (given that Norton was concerned about the bonus) which is based in part on divisional income.

APPENDIX I

ANALYSIS OF OUTSOURCING PROPOSAL

Additional costs to purchase versus produce the units full capacity of 133,333 units ($28 - $26) X 133,333	$	266,666
Supervisors' salary that will continue to be incurred		250,000
Increase in cost to purchase versus produce		516,666
Opportunity cost of lost contribution from outside sales (equal to external sales contribution less SGA costs)		
External sales gross margin ($33 - $28) x 33,333 units*		166,665
Elimination of selling, general and administrative costs of the division on annualized basis (400,000 x (12/9)		-533,333
Net cost of outsourcing	$	149,998

* Based on annualized external sales (i.e. 25,000 x 12/9)

APPENDIX II

ADJUSTED DIVISIONAL FINANCIAL STATEMENTS

	Electro	Circuit	Consumer	Total
Sales revenue - External	$6,000,000	$825,000	$7,000,000	$13,825,000
Sales revenue - Internal before adjustment	-	1,410,000		1,410,000
Increase in transfer price for circuits sold externally (Note 1)	-	690,000	-	690,000
Adjusted sales	6,000,000	2,925,000	7,000,000	15,925,000
Cost of goods sold before adjustment	3,600,000	2,000,000	3,500,000	9,100,000
Increase in transfer price for circuits purchased internally (Note 2)	230,000	-	460,000	690,000
Adjusted cost of goods sold	3,830,000	2,000,000	3,960,000	9,790,000
Adjusted gross margin	2,170,000	925,000	3,040,000	6,135,000
Divisional, selling, general and administration costs	1,000,000	400,000	2,000,000	3,400,000
Operating Income	1,170,000	525,000	1,040,000	2,735,000
Adjusted corporate cost allocation				
Information technology (Note 3)	87,600	43,800	343,800	475,200
Legal Department (Note 4)	200,000	10,750	10,750	221,500
Accounting & marketing and sales department (Note 5)	69,330	69,330	554,640	693,300
Human resources (Note 6)	55,000	33,000	22,000	110,000
Total adjusted corporate cost allocation	411,930	156,880	931,190	1,500,000
Divisional Income	$758,070	$368,120	$108,810	$1,235,000

APPENDIX II

ADJUSTED DIVISIONAL FINANCIAL STATEMENTS

Notes

1. Based on the $9.20 difference between the recommended transfer price of $28 and the original transfer price of $18.80 multiplied by the 75,000 units sold by Circuit internally.

2. Based on the $9.20 difference between the recommended transfer price and the original transfer price multiplied by the number of units purchased by each of Electro and Consumer from Circuit. Electro purchased 1/3 of the units which amounts to 25,000 units and Consumer purchased 2/3 of the units which amounts to 50,000 units.

3. For IT the full $300,000 relating to implementing the payroll system for Consumer was allocated to Consumer. The remaining $175,200 was allocated between the 3 divisions based on the number of computers on the assumption that divisions with more computers would require more support. As Electro has twice as many computers as the other 2 divisions it was allocated twice as much of the remaining $175,200 as the other 2 divisions.

   On that basis Consumer was allocated $300,000 for the payroll system plus $43,800 (i.e. ¼ of the remaining $175,100) for a total of $343,800. Electro was allocated ½ of the $175,200 and Circuit was allocated ¼ of the $175,200.

4. For legal costs the $200,000 relating to the lawsuit in which Electro is involved was fully allocated to Electro. The remaining $21,500 was allocated evenly between Circuit and Consumer.

5. As approximately 80% of resources of the marketing and sales departments as well as the accounting department are expended on Consumer, $554,640 of these costs was allocated to Consumer. The remaining $138,660 was allocated evenly between Circuit and Elelctro.

6. Human resources costs were allocated based on the head counts in each of the divisions on the basis that these costs correlate with the number of employees in a given department. As 50% of the employees are in Electro it was allocated half of the cost. Circuit and Consumer were allocated 30% and 20% of the costs respectively based on the percentage of employees in each of these departments