

The Playdough Company Case Study

Posted on January 8, 2020

Introduction

The Playdough Company produces play dough canisters and supplies them to the local market. The Company produces 760,000(Per year) play dough canisters in its local plant. The Company is selling each of his canisters at the price tag of \$ 2.2.¹

The cost of the total material that the company obtains is \$ 300,000. Labor is paid an amount of \$15 per hour and 12000 hours of work is done by the labor each year. So, the total direct labor will cost \$180,000 (12000 * 15). Similarly Variable overhead costs \$10 per day so that the total cost will be $10 * 120000 = \$120,000$. Fixed overhead costs \$45 per day, so total fixed cost will be calculated as $45 * 120,000 = \$540,000$.²

The Total cost of Production per year= Direct materials + Direct Labor cost + Variable Overhead + fixed overhead = \$1,140,000

The detailed cost of producing the canisters is shown in the table below.

Direct materials	\$300,000
Direct labor 12000 hrs. at \$15 per hour	\$180,000
Variable overhead \$10 per direct labor hour	\$120,000
Fixed overhead \$45 per direct labor hour	\$540,000
Total cost of Production per year	\$1,140,000

Calculate the cost per unit of producing the canisters under the traditional approach.

The Cost per unit of the canister can be calculated by dividing the total cost of the canisters per year by the total production of the canisters per year.

Total cost of production of canister per year = \$1140, 000

Total number of Canisters produced by the Company per year = 760,000

Cost per unit = $1140,000 / 760,000 = \$1.5$

The Company is selling one unit of canister for \$2.2, so the total profit of the company per canister = $\$2.2 - \$1.5 = \$0.7$.

The total Profit of the company per year = total profit per unit * total number of units manufactured = $0.7 * 760,000 = \$532,000$

Total Profit can also be calculated from revenue and expenditure values

Total revenue of the Company will be $\$2.2 * 760,000 = \$1,672,000$

The total expenditure of the Company will be $\$1.50 * 760,000 = \$1,140,000$

Total profit of the Company = Total revenue - total expenditure = $\$1,672,000 - \$1,140,000 = \$532,000$

Should the company purchase the canisters or continue manufacturing them? Show workings.

The Company has two options

- Continue to manufacture the canisters
- Purchase the canisters from the Local Market
- Continue to manufacture the canisters

Direct materials	\$300,000
Direct labor 12000 hours at \$15 per hour	\$180,000
Variable overhead \$10 per direct labor hour	\$120,000
Fixed overhead \$45 per direct labor hour	\$540,000
Total cost	\$1,140,000
Cost per Unit	\$1.50

Profit per Unit	\$0.70
-----------------	--------

If the company continues to manufacture the canisters, the company will earn a profit of \$0.7 per unit.

Total Revenue of the Company	\$1,672,000
Total Expenditure of the Company	1,14,000
Total Profit	\$53,200

The total cost per unit will be \$1.50, and the companies will sell it at the price of \$2.2 per coffee cup. The profit per unit will be \$0.70. The Company will sell 760,000 units of the coffee cup. So, the total profit of the company will be $0.70 \times 760,000 = \$532,000$.

Total revenue of the Company will be $2.2 \times 760,000 = \$1,672,000$

The total expenditure of the Company will be $1.50 \times 760,000 = \$1,140,000$

Total profit of the Company = Total revenue - total expenditure = $1,672,000 - 1,140,000 = \$532,000$

- Purchase the canisters from the Local Market

The Company has an offer to buy the canisters for \$1 per unit. If the Company accepts this offer, The Company could avoid the cost of fixed overhead, that is, 80,000 of supervisory salaries and save \$28,000 in machinery depreciation.

The only fixed overhead that would be avoided would be \$80,000 of supervisors' salaries and \$28,000 of machinery depreciation. The remaining fixed overhead would continue to be incurred².

Direct materials	\$300,000
Direct labor 12000 hours at \$15 per hour	\$180,000
Variable overhead \$10 per direct labor hour	\$120,000
Fixed overhead \$45 per direct labor hour	\$540,000

Total cost	\$1,140,000
the fixed overhead of supervisors' salaries	\$80,000
machinery depreciation	\$28,000
Total cost	\$1,032,000
Cost per Unit	\$1.30

Conclusion

Suppose the company decides to purchase the canisters for \$1 from the local company. The cost per unit will decrease from \$1.5 to \$1.3. This will decrease the total expenditure from \$1140000 to \$988000 and will increase the profit of the company from \$53000 to \$684000.

Total Revenue of the Company	\$1,672,000
Total Expenditure of the Company	\$988,000
Total Profit	\$684,000

The company has decided to continue manufacturing the canisters and has a special order for the canisters from an outside client who has offered \$1.40 per canister for 20,000 canisters. As the firm has capacity purely on financial grounds should the firm accept the offer?

Since the Company is producing the canisters for \$1.5 per unit, it cannot sell the outside client for \$1.4. If the company decides to sell to the outside client the company has to bear the loss of \$.1 per unit³.

Manufacturing cost of 1 unit	\$1.50
Offer from an outside Company	\$1.40
Loss per Unit	\$0.10
Total loss of 20000 units	\$2,000

The total cost per unit will be \$1.50, and the companies will sell it at the price of \$1.40 per unit. The loss per unit will be \$0.10. The Company will sell 20,000 units of the coffee cup. So, the total loss of the company will be $\$0.10 \times 20,000 = \$2,000$.

Total revenue of the Company will be $\$1.4 \times 20,000 = \$28,000$

The total expenditure of the Company will be $\$1.50 \times 20,000 = \$30,000$

Total loss of the Company = Total revenue - total expenditure = $\$28,000 - \$30,000 = -\$2,000$

So the Company should not take this special order as it has to bear the loss of \$2000 if he takes this order.

What other factors should the firm consider before deciding whether to accept the order in part (c)?

The other factor that needs to be considered is whether the special customer will give further orders or not. If there is a possibility that the special order will bring more orders with good prices in the future, then the firm should consider this order even if this order is in high loss. Some other factors are listed below.

- Credibility of the customer
- If the customer will give more orders in the future or not
- History of the customer
- Relations of the customer with the company
- Future interests of the company with the customer⁴.

All these factors are considered and evaluated before deciding whether to accept this order or not.

The Playdough Company has been approached to manufacture special coffee cups. This would have the following costs per unit :

Direct material \$ 0.60

Direct labor 0.20

Variable overhead 0.10

Fixed overhead 0.15

The coffee cups would then be sold for \$1.20 per coffee cup. It could manufacture and sell 400,000 of these coffee cups. Should. The Playdough Company purchases the canisters from the Canister Company and starts manufacturing coffee cups or continues manufacturing canisters? Show workings.

Calculations of Coffee Cup

Direct materials cost per unit	\$0.60
Direct labor cost per unit	\$0.20
Variable overhead cost per unit	\$0.10
Fixed overhead per unit	\$0.15
Total cost per unit	\$1.05

The total cost per unit will be \$1.05, and the companies will sell it at the price of \$1.2 per coffee cup. The profit per unit will be \$0.15. The Company will sell 400,000 units of the coffee cup. So the total profit of the company will be $\$0.15 \times 400,000 = \$60,000$.⁵

Total revenue of the Company will be $\$1.2 \times 400,000 = \$480,000$

The total expenditure of the Company will be $\$1.05 \times 400,000 = \$420,000$

Total profit of the Company = Total revenue - total expenditure = $\$480,000 - \$420,000 = \$60,000$

Calculations of Manufacturing Canisters:

Direct materials	\$300,000
Direct labor 12000 hours at \$15 per hour	\$180,000
Variable overhead \$10 per direct labor hour	\$120,000
Fixed overhead \$45 per direct labor hour	\$540,000
Total cost	\$1,140,000
Cost per Unit	\$1.50
Profit per Unit	\$0.70

The total cost per unit will be \$1.50, and the companies will sell it at the price of \$2.2 per coffee cup. The profit per unit will be \$0.70. The Company will sell 760,000 units of the coffee cup. So, the total profit of the company will be $0.70 \times 760,000 = \$532,000$.

Total revenue of the Company will be $2.2 \times 760,000 = \$1,672,000$

The total expenditure of the Company will be $1.50 \times 760,000 = \$1,140,000$

Total profit of the Company = Total revenue - total expenditure = $1,672,000 - 1,140,000 = \$532,000$

Total Revenue of the Company	\$1,672,000
Total Expenditure of the Company	\$1,140,000
Total Profit	\$53,200

Conclusion:

The Company should start manufacturing coffee cups because the total profit of manufacturing coffee cups is \$60,000, whereas the profit from manufacturing canisters is \$53,200. So, the company should

start manufacturing the coffee cups⁷.

The production of the coffee cup will increase the profit of the company by up to 11.25%. This will have a huge impact on the growth of the company.

References

1. Weygandt JJ, Kimmel PD, Kieso DE. *Financial & Managerial Accounting*. John Wiley & Sons; 2015.
2. DRURY CM. *Management and Cost Accounting*. Springer; 2013.
3. Cooper R, Kaplan RS. Measure costs right: make the right decisions. *Harv Bus Rev*. 1988;66(5):96-103.
4. Horngren CT. *Cost Accounting: A Managerial Emphasis, 13/E*. Pearson Education India; 2009.
5. Kokubu K, Kitada H. Material flow cost accounting and existing management perspectives. *J Clean Prod*. 2015;108:1279-1288.
6. Hansen D, Mowen M, Guan L. *Cost Management: Accounting and Control*. Cengage Learning; 2007.
7. Kaplan RS, Anderson SR. Time-driven activity-based costing. 2003.