



The Markley Division

MBA 628: Managerial Accounting Instructor: Dr. Juan J. Segovia

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THE NUMBER CRUNCHERS

Simon Foucher –*Uncertified Accountant*

 Geneviève Lavigueur – *Consultant*

Leo Pérez Saba – *Final Draft Writer*

Mohamed Shadi – *Consultant*

Kenny Somerville – *Project Manager*

**Problem Definition**

The Markley Division has an ineffective budgeting and control system that prevents management from fully understanding the causes of variances. As a consequence, management cannot apply proactive corrective measures in order to improve results.

**Quantitative Analysis (Q1)**

* Exhibit 1: Flexible budget and unit costs. The contribution margin per unit of metal is twice that of plastic.
* Exhibit 2: L2 breakdown of static budget variance into flexible budget and sales volume variances. The largest contributor of variance comes from flexible budget variance ($41,100U) as opposed to sales volume variance ($8,500F).
* Exhibit 3: L3 analysis of price, spending and efficiency variances. Except for $39,000U due to the higher price paid for plastic materials, most of the variances come from efficiency. Efficiency variance is larger for plastic ($7,400U) than that of metal ($2,600U), while spending variances are almost negligible ($600U).
* Exhibit 4: Changes in finished goods and raw materials inventory. The net change in inventory of $49,600 is coincidently equal to manufacturing variances from standard because it will only affect the balance sheet and not the presented income statement.

**Qualitative Analysis**

* The major causes of Markley’s negative first quarter performance are purchase price of plastic material and manufacturing waste (Q2a).
* Since the status report did not contain sufficient details regarding variances (L2 and L3 analyses), management was unable to implement corrective actions in manufacturing (Q2b).
* The higher than budgeted average selling price for plastic chairs ($10.50) is likely due to management raising list price in order to account for higher raw material costs (Q2b).
* Sales were higher than budgeted for lower CM item (plastic @14% sales), and higher than budgeted for higher CM item (metal @27%). Management should look into changing prices and/or commission plans accordingly.
* A significant portion of the static variance can be assigned to purchasing because it is due to material costs. It could be the result of external factors (market prices, material quality, etc.) or internal factors (poor negotiation skills, smaller lot sizes, etc.).
* Since most of the efficiency variances come from waste, the company should research potential waste reduction initiatives (Six Sigma, Lean Manufacturing, aligning bonus structures, etc.).

**Recommendation**

## Implement flexible budget practices and compare variances to actual results on a monthly basis to facilitate identification of potential corrective actions.

## Set the selling price of plastic chairs to $11, and decrease the selling price of metal chairs to $14.

## Adjust the standard cost per unit of plastic chairs to reflect the price increase in raw materials.

## Exhibits

**Exhibit 1 – Flexible Budget and Unit Cost Structure**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   |   | **PLASTIC** |   |   |
|   |   |   |   | Budgeted | Sold |
|   |   | Volume (Units) | 50,000 | 60,000 |
| **Cost Driver** | **QTY** |   |   |   |   |
|   |   |  |  | **Budgeted/Unit** | **Flex Budget** |
| Qty Sold | 60,000 | Revenues |  $10.00  |  $600,000  |
|   |   |   |   |   |   |
|   |   | Less Manufacturing Variable Costs |   |   |
| Qty Made | 55,000 |   | Raw Materials | $5.00 | $275,000 |
| Qty Made | 55,000 |   | DL | $1.00 | $55,000 |
| Qty Made | 55,000 |   | Mfg Overhead | $2.00 | $110,000 |
|   |   | Total Manufacturing Variable Costs | $8.00 | $440,000 |
|   |   | Selling Variable Costs |   |   |
| $ Sold | 600,000 |   | Commissions (0.5% sales) | $0.50 | $30,000 |
| $ Sold | 600,000 |   | AFDA (1% Sales) | $0.10 | $60,000 |
|   |   | Total Selling Variable Costs | $0.60 | $90,000 |
|   |   |   |   |   |   |
|   |   | Total Variable Cost | $8.60 | $530,000 |
|   |   |   |   |   |   |
|   |   | Contribution Margin | $1.40 | $70,000 |
|   |   |   |   |   |   |
|   |   | Other Costs |   |   |
| Qty Made | 55,000 |   | Fixed MFG Costs Plastic | $0.55 | $30,030 |
| Qty Sold | 60,000 |   | Fixed SGA | $0.36 | $21,600 |
| Qty Sold | 60,000 |   | Corporate Office Allocation | $0.18 | $10,500 |
|   |   | Total Other Costs | $1.08 | $62,130 |
|   |   |   |   |   |   |
|   |   | Division Operating Income | $0.32 | $7,870 |
|   |   |   |   |   |   |
|   |   | **CONTRIBUTION MARGING % SALES** | **14%** |  |
|   |   | **METAL** |  |  |
|   |   |   |   | Budgeted | Sold |
|   |   | Volume (Units) | 25,000 | 20,000 |
| **Cost Driver** | **QTY** |   |   |   |   |
|  |  |  |  | **Budgeted/Unit** | **Flex Budget** |
| Qty Sold | 20,000 | Revenues |  $15  |  $300,000  |
|   |   |   |   |   |   |
|   |   | Less Manufacturing Variable Costs |   |   |
| Qty Made | 22,500 |   | Raw Materials | $6.00 | $135,000 |
| Qty Made | 22,500 |   | DL | $2.00 | $45,000 |
| Qty Made | 22,500 |   | Mfg Overhead | $2.00 | $45,000 |
|   |   | Total Manufacturing Variable Costs | $10.00 | $225,000 |
|   |   | Selling Variable Costs |   |   |
| $ Sold | 300,000 |   | Commissions (0.5% sales) | $0.75 | $15,000 |
| $ Sold | 300,000 |   | AFDA (1% Sales) | $0.15 | $45,000 |
|   |   | Total Selling Variable Costs | $0.90 | $60,000 |
|   |   |   |   |   |   |
|   |   | Total Variable Cost | $10.90 | $285,000 |
|   |   |   |   |   |   |
|   |   | Contribution Margin | $4.10 | $15,000 |
|   |   |   |   |   |   |
|   |   | Other Costs |   |   |
| Qty Made | 22,500 |   | Fixed MFG Costs Metal | $0.83 | $18,630 |
| Qty Sold | 20,000 |   | Fixed SGA | $0.72 | $14,400 |
| Qty Sold | 20,000 |   | Corporate Office Allocation | $0.35 | $7,000 |
|   |   | Total Other Costs | $1.54 | $40,030 |
|   |   |   |   |   |   |
|   |   | Division Operating Income | $2.56 | -$25,030 |
|   |   |   |   |   |   |
|  |  | **CONTRIBUTION MARGING % SALES** | **27%** |   |

**Exhibit 2 – Level 2 Analysis: Breakdown of static budget variance into flexible budget and sales volume variances.**



**Exhibit 3 – Level 3 Analysis: Price, Spending and Efficiency Variances.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sum of Variance** | **Column Labels** |  |  |  |
| **Row Labels** | **DL** | **DM** | **Fixed OH** | **Var OH** | **Grand Total** |
| **EFFICIENCY** |  **$(600)** |  **$(8,000)** |  |  **$(1,400)** |  **$(10,000)** |
| METAL |  $200  |  $(3,000) |  |  $200  |  $(2,600) |
| PLASTIC |  $(800) |  $(5,000) |  |  $(1,600) |  $(7,400) |
| **SPENDING** |  |  |  **$(1,200)** |  **$(600)** |  **$(1,800)** |
| METAL |  |  |  $(600) |  $(200) |  $(800) |
| PLASTIC |  |  |  $(600) |  $(400) |  $(1,000) |
| **PRICE** |  **$-**  |  **$(39,000)** |  |  |  **$(39,000)** |
| METAL |  $-  |  $-  |  |  |  $-  |
| PLASTIC |  $-  |  $(39,000) |  |  |  $(39,000) |
| **Grand Total** |  **$(600)** |  **$(47,000)** |  **$(1,200)** |  **$(2,000)** |  **$(50,800)** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Item** | **Actual Quantity**  | **Actual Price**  | **Budgeted Price** | **Difference in price** | **Price Variance** |
| Raw Materials - Plastic | 60,000 |  $5.65  |  $5.00  |  $0.65  |  $(39,000.00) |
| Raw Materials - Metal | 30,000 |  $6.00  |  $6.00  |  $-  |  $-  |
| DL - Price - Plastic | 9,300 |  $6.00  |  $6.00  |  $-  |  $-  |
| DL - Price - Metal | 5,600 |  $8.00  |  $8.00  |  $-  |  $-  |
|   |   |   |   |   |   |
| **Item** | **Actual Input Used** | **Budgeted Allowed** | **Delta in units** | **Cost per unit** | **Efficiency Variance** |
| Raw Materials - Plastic | 56,000 | 55,000 | 1,000 |  $5.00  |  $(5,000) |
| Raw Materials - Metal | 23,000 | 22,500 | 500 |  $6.00  |  $(3,000) |
| DL - Plastic | 9,300 | 9,167 | 133 |  $6.00  |  $(800) |
| DL Metal | 5,600 | 5,625 | -25 |  $8.00  |  $200  |
| Variable MFG OH - Plastic | 9,300 | 9167 | 133 |  $12.00  |  $(1,600) |
| Variable MFG OH - Metal | 5,600 | 5625 | -25 |  $8.00  |  $200  |
|   |   |   |   |   |   |
| **Item** | **Total OH Cost** | **Variable cost per unit** | **Budgeted Variable cost per unit** |  **Delta in cost per unit**  |  **Spending Variance**  |
| Plastic | 112000 | 12.04 | 12 |  $(0.04) |  $(400) |
| Metal | 45000 | 8.04 | 8 |  $(0.04) |  $(200) |
|   |   |   |   |   |   |
| **Item** | **Actual** | **Budgeted** | **Variance** |  |  |
| Plastic Fixed PH |  $27,900  |  $27,300  |  $(600.00) |   |   |
| Metal Fixed OH |  $21,300  |  $20,700  |  $(600.00) |   |   |

**Exhibit 4 – Changes in finished goods and raw materials inventory.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CHANGES IN FINISHED GOODS** |   |   |   |   |
| **Material** |  **Var**  | **Actual Manufactured** | **Actual Sold** | **QTY From INV** | **Unit Cost** | **Var** |  |
| PLASTIC |  $(40,000) |  $55,000  |  $60,000  |  $5,000  |  $8.00  |  $(40,000) |  |
| METAL |  $25,000  |  $22,500  |  $20,000  |  $(2,500) |  $10.00  |  $25,000  |  |
|   |   |   |   |   |   |   |  |
| **CHANGES IN RAW MATERIALS** |   |   |   |   |   |   |  |
| **Material** |  **Cost of new Inventory**  | **Quantity Required** | **Quantity Purchased** | **Effect on stock** | **Material Cost** | **Cost of new Inventory** |  |
| PLASTIC |  $22,600  |  $56,000  |  $60,000  |  $4,000  |  $5.65  |  $22,600  |  |
| METAL |  $42,000  |  $23,000  |  $30,000  |  $7,000  |  $6.00  |  $42,000  |  |