**Decentralization in Organizations:**

In a decentralized organization, decision-making authority is spread throughout the organization rather than being confined to a few top executives. As noted above, out of necessity all large organizations are decentralized to some extent. Organizations do differ, however, in the extent to which they are decentralized. In strongly centralized organizations, decision-making authority is reluctantly delegated to lower-level managers who have little freedom to make decisions. In strongly decentralized organizations, even the lowest-level managers are empowered to make as many decisions as possible. Most organizations fall somewhere between these two extremes.

***Advantages and Disadvantages of Decentralization***

The major advantages of decentralization include:

1. By delegating day-to-day problem solving to lower-level managers, top management can concentrate on bigger issues, such as overall strategy.

2. Empowering lower-level managers to make decisions puts the decision-making authority in the hands of those who tend to have the most detailed and up-to-date information about day-to-day operations.

3. By eliminating layers of decision making and approvals, organizations can respond more quickly to customers and to changes in the operating environment.

4. Granting decision-making authority helps train lower-level managers for higher-level positions.

5. Empowering lower-level managers to make decisions can increase their motivation and job satisfaction.

**The major disadvantages of decentralization include:**

1. Lower-level managers may make decisions without fully understanding the company’s overall strategy.

2. If lower-level managers make their own decisions independently of each other, coordination may be lacking.

3. Lower-level managers may have objectives that clash with the objectives of the entire organization. 1 For example, a manager may be more interested in increasing the size of his or her department, leading to more power and prestige, than in increasing the department’s effectiveness.

***Cost, Profit, and Investment Centers***

**Cost Center** The manager of a cost center has control over costs, but not over revenue or the use of investment funds. Service departments such as accounting, finance, general administration, legal, and personnel are usually classified as cost centers. In addition, manufacturing facilities are often considered to be cost centers. The managers of cost centers are expected to minimize costs while providing the level of products and services demanded by other parts of the organization. For example, the manager of a manufacturing facility would be evaluated at least in part by comparing actual costs to how much costs should have been for the actual level of output during the period. Standard cost variances and flexible budget variances, such as those discussed in earlier chapters, are often used to evaluate cost center performance.

**Profit Center** The manager of a profit center has control over both costs and revenue, but not over the use of investment funds. For example, the manager in charge of a Six Flags amusement park would be responsible for both the revenues and costs, and hence the profits, of the amusement park, but may not have control over major investments in the park. Profit center managers are often evaluated by comparing actual profit to targeted or budgeted profit.

**Investment Center** The manager of an investment center has control over cost, revenue, and investments in operating assets. For example, General Motors ’ vice president of manufacturing in North America would have a great deal of discretion over investments in manufacturing—such as investing in equipment to produce more fuel-efficient engines. Once General Motors’ top-level managers and board of directors approve the vice president’s investment proposals, he is held responsible for making them pay off. As discussed in the next section, investment center managers are often evaluated using return on investment (ROI) or residual income measures.

1. Calculation of Margin:

|  |  |
| --- | --- |
| Margin = | Net Operating Income |
| Sales |

1. Calculation of Turnover:

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average Operating Assets |

1. Return on Investment (ROI):

ROI = Margin \* Turnover

1. For example, suppose that the Montvale Burger Grill expects the following operating results next month:

|  |  |
| --- | --- |
| Sales/ Revenues | $100,000 |
| Operating expenses | $90,000 |
| Net operating income | $10,000 |
| Average operating assets | $50,000 |

The expected return on investment (ROI) for the month is computed as follows:

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | $10,000 |
| $100,000 |

= 10%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | $ 1,00,000 |
| $50,000 |

= 2 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

=10%\*2

= 20%

1. Suppose that the manager of the Montvale Burger Grill is considering investing $2,000

in a state-of-the-art soft-serve ice cream machine that can dispense a number of different flavors. This new machine would boost sales by $4,000, but would require additional operating expenses of $1,000. Thus, net operating income would increase by $3,000, to $13,000. The new ROI would be:

Solution:

|  |  |
| --- | --- |
| Sales | (1,00,000+ 4,000)= $104,000 |
| Operating expenses | (90,000+1,000) = $ 91,000 |
| Net operating income | (10,000+3,000)= $13,000 |
| Average operating assets | (50,000+2,000)= $52,000 |

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | $13,000 |
| $104,000 |

= 0.125 = 12.5%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | $ 1,04,000 |
| $52,000 |

= 2 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

=12.5%\*2

= 25%

**Decision making: from example 1 and 2, which project is better?**

***Criticisms of ROI***

Although ROI is widely used in evaluating performance, it is subject to the following criticisms:

1. Just telling managers to increase ROI may not be enough. Managers may not know how to increase ROI; they may increase ROI in a way that is inconsistent with the company’s strategy; or they may take actions that increase ROI in the short run but harm the company in the long run (such as cutting back on research and development). This is why ROI is best used as part of a balanced scorecard, as discussed later in this chapter. A balanced scorecard can provide concrete guidance to managers, making it more likely that their actions are consistent with the company’s strategy and reducing the likelihood that they will boost short-run performance at the expense of long-term performance.

2. A manager who takes over a business segment typically inherits many committed costs over which the manager has no control. These committed costs may be relevant in assessing the performance of the business segment as an investment but they make it difficult to fairly assess the performance of the manager.

3. As discussed in the next section, a manager who is evaluated based on ROI may reject investment opportunities that are profitable for the whole company but would have a negative impact on the manager’s performance evaluation.

***Residual income***is another approach to measuring an investment c enter’s performance. Residual income is the net operating income that an investment center earns above the minimum required return on its operating assets. In equation form, residual income is calculated as follows:

|  |  |
| --- | --- |
| Residual income = Net operating income - | (Average operating assets\* Minimum required rate of return) |

For purposes of illustration, consider the following data for an investment center— the Ketchikan Division of Alaskan Marine Services Corporation. Alaskan Marine Services Corporation Ketchikan Division Basic Data for Performance Evaluation

Average operating assets . . . . . . . . . . . . . $100,000

Net operating income . . . . . . . . . . . . . . . . $20,000

Minimum required rate of return . . . . . . . . 15%

**Calculation of Residual income:**

|  |  |
| --- | --- |
| Residual income = Net operating income - | (Average operating assets\* Minimum required rate of return) |

= $20,000 – ($100,000\*15%)

= $20,000 - $ 15,000

= $ 5,000

Problem 01.

Financial data of MRF Construction Ltd. for the year 2019:

|  |  |
| --- | --- |
| Sales | Tk. 80,00,000 |
| Net operating income | Tk. 12,00,000 |
| Average operating assets | Tk. 40,00,000 |
| Minimum required rate of return | 15% |

Requirement:

Calculate margin, turnover, ROI and the residual income of the company.

Solution:

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | 12,00,000 |
| 80,00,000 |

= 0.15 = 15%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | 80,00,000 |
| 40,00,000 |

= 2 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

=15%\*2

= 30%

|  |  |
| --- | --- |
| Residual income = Net operating income - | (Average operating assets\* Minimum required rate of return) |

= 12,00,000 – (40,00,000\*15%)

= 12,00,000- 6,00,000

= Tk. 6,00,000

Problem 02.

From the following information of Uttara Construction Ltd. for last year as

|  |  |
| --- | --- |
| Sales | Tk. 90,00,000 |
| Net operating income | Tk. 18,00,000 |
| Average operating assets | Tk. 50,00,000 |
| Minimum required rate of return | 18% |

Requirement: Calculate margin, turnover and ROI and the residual income of the company.

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | 18,00,000 |
| 90,00,000 |

= 0.20 = 20%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | 90,00,000 |
| 50,00,000 |

= 1.8 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

= 20 %\* 1.8

= 36%

|  |  |
| --- | --- |
| Residual income = Net operating income - | (Average operating assets\* Minimum required rate of return) |

= 18,00,000 – (50,00,000\*18%)

= 18,00,000- 9,00,000

= Tk. 9,00,000

Problem 03.

From the following information of Shapnil Construction Ltd. and Fardin Construction Ltd. for last year as:

|  |  |  |
| --- | --- | --- |
| Particulars | Shapnil Construction Ltd. | Fardin Construction Ltd.. |
| Sales | Tk. 1,00,00,000 | Tk. 75,00,000 |
| Net operating income | Tk. 25,00,000 | Tk. 15,00,000 |
| Average operating assets | Tk. 40,00,000 | Tk. 25,00,000 |
| Minimum required rate of return | 13% | 15% |

Requirement:

1. Calculate margin, turnover and ROI and the residual income of Shapnil Construction Ltd. and Fardin Construction Ltd.
2. Draw comments which company is doing better?

Solution:

|  |  |
| --- | --- |
| Shapnil Construction Ltd. | Fardin Construction Ltd. |
| |  |  | | --- | --- | | Margin = | Net operating income | | Sales |  |  |  | | --- | --- | | Margin = | 25,00,000 | | 1,00,00,000 |   = 0.25 = 25% | |  |  | | --- | --- | | Margin = | Net operating income | | Sales |  |  |  | | --- | --- | | Margin = | 15,00,000 | | 75,00,000 |   = 0.20 = 20% |
| |  |  | | --- | --- | | Turnover = | Sales | | Average operating assets |  |  |  | | --- | --- | | Turnover = | 1,00,00,000 | | 40,00,000 |   = 2.5 Times | |  |  | | --- | --- | | Turnover = | Sales | | Average operating assets |  |  |  | | --- | --- | | Turnover = | 75,00,000 | | 25,00,000 |   = 3 Times |
| Return on Investment (ROI):  ROI = Margin \* Turnover  = 25% \* 2.5  = **62.5%** | Return on Investment (ROI):  ROI = Margin \* Turnover  = 20% \* 3  = **60%** |
| Residual income:  25,00,000 – (40,00,000\*13%)  = 25,00,000- 5,20,000  = Tk. 19,80,000 | Residual income:  15,00,000 – (25,00,000\*15%)  = 25,00,000- 3,75,000  = Tk. **21,25,000** |

Problem 04.

From the following information of. Alpha Developer Ltd. for last year as

|  |  |
| --- | --- |
| Sales | Tk. 75,00,000 |
| Net operating income | Tk. 15,00,000 |
| Average operating assets | Tk. 25,00,000 |
| Minimum required rate of return | 15% |

Requirement:

1. Calculate margin, turnover and ROI and the residual income of the company.
2. If average assets increase by Tk. 10,00,000, sales increase by Tk. 25,00,000, Net operating income increases by Tk. 5,00,000, Calculate margin, turnover and ROI and the residual income of the company. Minimum required rate of return 20%.
3. Draw your comments.

Solution (i)

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | 15,00,000 |
| 75,00,000 |

= 0.20 = 20%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | 75,00,000 |
| 25,00,000 |

= 3 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

=20% \* 3

= 60%

Residual income:

15,00,000 – (25,00,000\*15%)

= 15,00,000- 11,25,000

**= Tk. 3,75,000**

Solution (ii)

|  |  |
| --- | --- |
| Sales | (75,00,000 + 25,00,000) = Tk. 1,00,00,000 |
| Net operating income | (15,00,000 + 5,00,000) = Tk. 20,00,000 |
| Average operating assets | (25,00,000 + 10,00,000) = Tk. 35,00,000. |
|  |  |

|  |  |
| --- | --- |
| Margin = | Net operating income |
| Sales |

|  |  |
| --- | --- |
| Margin = | 20,00,000 |
| 1,00,00,000 |

= 0.20 = 20%

|  |  |
| --- | --- |
| Turnover = | Sales |
| Average operating assets |

|  |  |
| --- | --- |
| Turnover = | 1,00,00,000 |
| 35,00,000. |

= 2.87 Times

Return on Investment (ROI):

ROI = Margin \* Turnover

=20% \* 2.87

= 57.14 %

Residual income:

20,00,000 – (35,00,000\*15%)

= 20,00,000- 5,25,000

**= Tk. 14,75,000**

Problem 05.

From the following particulars of Alpha Developer Ltd. and Sigma Developer Ltd. for the year ended December 31, 2018.

|  |  |  |
| --- | --- | --- |
| Particulars | Alpha Developer Ltd. | Sigma Developer Ltd. |
| Sales | Tk. 30,00,000 | Tk. 45,00,000 |
| Net operating income | Tk. 5,00,000 | Tk. 8,00,000 |
| Average operating assets | Tk. 40,00,000 | Tk. 50,00,000 |
| Minimum required rate of return | 12% | 15% |

Requirement:

1. Calculate margin, turnover and ROI and the residual income of Alpha Developer Ltd. and Sigma Developer Ltd.
2. Which company is doing better and which company is better for investment?

|  |  |
| --- | --- |
| Alpha Developer Ltd. | Sigma Developer Ltd. |
| |  |  | | --- | --- | | Margin = | Net operating income | | Sales |  |  |  | | --- | --- | | Margin = | 5,00,000 | | 30,00,000 |   = 0.1666 = 16.67% | |  |  | | --- | --- | | Margin = | Net operating income | | Sales |  |  |  | | --- | --- | | Margin = | 8,00,000 | | 45,00,000 |   = 0.17777 = 17.78% |
| |  |  | | --- | --- | | Turnover = | Sales | | Average operating assets |  |  |  | | --- | --- | | Turnover = | 30,00,000 | | 40,00,000 |   = 0.75 Times | |  |  | | --- | --- | | Turnover = | Sales | | Average operating assets |  |  |  | | --- | --- | | Turnover = | 45,00,000 | | 50,00,000 |   = 0.90 Times |
| Return on Investment (ROI):  ROI = Margin \* Turnover  = 16.67% \* 0.75  = 12.5% | Return on Investment (ROI):  ROI = Margin \* Turnover  = 17.78% \* 0.90  = **16%** |
| Residual income:  5,00,000 – (40,00,000\*12%)  = 5,00,000- 4,80,000  = Tk. 20,000 | Residual income:  8,00,000 – (50,00,000\*15%)  = 8,00,000- 7,50,000  = Tk. **50,000** |