Evaluating Performance Using the Balanced Scorecard Model: A Case Study of Dirham Industrial Co. Ltd.

Mohammed Ahmed Al Afif

Department of Studies and Research in Commerce

Mangalore University

Mangalore, India

Hph9124@gmail.com

**Abstract**

The aim of this study is to assess the performance of Dirham Company Ltd. using the Balanced Scorecard approach, which incorporates both financial and non-financial (operational) indicators within a framework of various perspectives that provide a comprehensive view of the company's performance. The study covers the period from 2019 to 2021, with 2019 as the baseline year for comparison and analysis. The main findings of this study are: (1) The company achieved a significant improvement in its net profit during the assessment period, due to the growth of its revenues, the increase in its market share, and its ability to deliver high-quality products, which enhanced and sustained its competitive advantage. (2) The company attained an outstanding current ratio of 274.8% for 2019 and 249% for 2020, which indicates its capacity to meet its short-term obligations. (3) The company maintained a good gross profit margin of 48% throughout the assessment period, which reflects its efficiency in covering the costs of its products. Based on the study results, the researcher offers some recommendations such as conducting an internal environment analysis to identify the strengths and weaknesses of the organization, conducting an external environment analysis to explore the opportunities and threats, matching the strengths with the opportunities by achieving a balance among its components and ensuring their alignment with the set objectives.

Keywords: balanced scorecard, financial performance, operational performance, performance measurement.

**1. Introduction**

Performance reflects the organization's ability to achieve its intended goals. Therefore, performance appraisal is a process of examining these capabilities for utilizing them and indicating the degree of progress in attaining these goals, as well as identifying the needs and challenges for achieving them. Moreover, performance appraisal has a supervisory role that involves using a set of criteria to measure the organization's performance and compare it with a set of standards that determine the actual level of achievement. Performance appraisal traditionally relies on a set of financial indicators, which are the sole basis for building the image and position of the company in the market. However, this approach requires an integrated link between two sets of financial and non-financial (operational) indicators and their consistent use in performance evaluation. This is because the environment surrounding business organizations is characterized by rapid and significant changes that exert pressures on the management of these organizations and require them to respond to these changes. Therefore, there is a need for a model such as the Balanced Scorecard, which represents an integrated and comprehensive framework of financial and non-financial (operational) indicators within various performance perspectives, and which contributes to providing a clear and comprehensive picture of the organization's performance.

**2. Research problem**

The company under study relies on financial indicators in its performance evaluation process, which does not provide a clear and integrated view of the actual performance of the organization during a specific period.

**3. Research significance**

The research is significant because it highlights the balanced scorecard approach, which created a new performance evaluation system that emerged in the early nineties based on the use of both financial and non-financial (operational) indicators in one practical framework. The financial perspective and the non-financial (operational) indicators feed into the other three perspectives, which are customer, internal processes, learning and growth.

**4. Research hypothesis**

The formulation and implementation of the balanced scorecard lead to an evaluation of the company's performance based on the following perspectives:

1. Financial perspective. 2- Customer perspective. 3- Internal processes perspective. 4- Learning and growth perspective. 5- Economic and social perspective.

**5. Research objective**

The objective of this study is to assess the performance of the company under investigation using the balanced scorecard approach, which incorporates financial and non-financial (operational) indicators within a range of diverse perspectives that provide a comprehensive view of the company's performance.

**6. Balanced Scorecard - Theoretical Framework**

The balanced scorecard model: an overview and its significance

The balanced scorecard is a strategic management tool that integrates financial and non-financial indicators to give senior managers a holistic and coherent view of their organizations' performance [1]. It also translates the mission and strategy of the organization into a set of performance measures that provide a framework for implementing and evaluating the organizational strategy. Moreover, the balanced scorecard goes beyond financial objectives and incorporates non-financial objectives that are essential for achieving long-term financial success [2]. The balanced scorecard consists of four main dimensions of performance: financial, customer, internal process, and learning and growth. Organizations use a balanced scorecard that contains a set of indicators for each dimension, and that aligns these indicators with the organizational strategy and goals [3]. The following table shows the performance measures of the balanced scorecard: -

**Table (1) Performance Measures of the Balanced Scorecard**

|  |  |  |
| --- | --- | --- |
| **BSC dimensions** | **The question** | **Metrics** |
| **Financial** | Does the company achieve its financial goals? | Operating income / return on assets / sales growth / cash flows from operating processes |
| **Customer** | Does the company meet customer expectations? | Customer satisfaction / customer response / new customer acquisition / on-time market share |
| **Internal processes** | Does the company improve its internal operations? | Shortage and damage rate / standby time / number of processors / material turnover / working power ratio |
| **Learning and growth** | Does the company improve its ability to create value? | Staff training / Staff conviction / Number of new products / Ratio of new sales to total sales number of patents / Number of layoffs |

Source: Jaimbalvo 2001:374

The balanced scorecard plays a vital role in evaluating the organization's performance through the following aspects [4]:

1- Clarifying, communicating and implementing the organization's strategy.

2- Identifying and prioritizing strategic initiatives and their relevance to the organization.

3- Aligning the strategy with all levels of the organization's management.

4- Establishing and achieving goals of business units and individuals within the overall strategy of the organization.

5- Linking the results of periodic performance monitoring to learning and growth that enhance the skills of individuals in the organization to improve and update the organization's strategy.

**Balance in the balanced scorecard model:**

The balanced scorecard assesses current and future financial performance through a balanced interaction that occurs between the variables of the four perspectives, and each perspective reflects the viewpoint of a stakeholder. The financial perspective is mainly a reflection of the expectations of shareholders and stakeholders, which focuses on maximizing wealth, and it can be translated through a set of objectives related to the growth of net income, cash flow, and others. The other three perspectives, which are (customer, internal process, learning and growth), represent the future performance of the organization. The customer perspective reflects the activities that match the needs of customers, and the internal process perspective reflects the activities that differentiate the organization from other competing organizations that operate in the same field. The learning and growth perspective reflects the interaction process between the members of the organization and the tasks assigned to them within the managerial plans, and the degree of alignment between the individual goals and short-term and long-term organizational goals that create value for the organization, stakeholders and individuals. The balanced interaction of the balanced scorecard can be illustrated in the following figure:

**Figure (1): The balanced interaction of the balanced scorecard model**

(+)

Financial perspective

Operating expenses

Accounts receivable

Return on invested capital

(\*)

Customer perspective (+)

Product quality (+)

Internal processes

( - )

Recycled production

Employee morale

Learning and growth

Staff suggestions

( - )

Source: Kaplan and Norton, 1998:83

**Balanced scorecard perspectives**

The balanced scorecard framework consists of four perspectives that reflect the strategic objectives of a company: financial, customer, internal processes, and learning and growth [5]. The financial perspective measures the economic value created by the company for its shareholders, using indicators such as return on invested capital, net profit margin, cash flow, and return on sales. These indicators provide a comprehensive assessment of the company's financial performance in a given period, as well as a basis for comparison with its past results, planned targets, or competitors' performance. However, financial measures alone are not sufficient to guide the company's value creation, as they are lagging indicators that reflect the outcomes of past actions. The customer perspective focuses on the strategic goals of the company related to customer satisfaction, retention, acquisition, and market share. It evaluates how well the company meets the needs and expectations of its target segments, and how it differentiates itself from its rivals in the competitive market. The internal processes perspective examines the efficiency and effectiveness of the company's core activities and processes that deliver value to customers and shareholders. It requires both managers and employees to have a clear understanding of how the company operates and what skills are needed for their roles. It also involves identifying and eliminating non-value-adding processes and activities that increase costs or reduce quality (Hilton et al., 2000:44). The learning and growth perspective addresses the intangible assets of the company that enable it to innovate and improve its performance over time, such as human capital, organizational capital, and information capital. It measures the company's ability to develop the competencies, capabilities, and culture that support its strategic vision and goals.

**7. Evaluating the performance of Dirham Industrial Co. Ltd. using the balanced scorecard model**

Background of the company

Dirham Industrial Company Limited (Deco) was established in Al-Marawaa area, about 26 kilometers away from Hodeidah city (the second-largest port in Yemen after Aden Port), in the spring of 1980. Since its inception, the company has adopted a flexible and adaptive policy that involved many structural changes in its statute, to cope with the developments in the production of soft drinks, fruit juice, energy and water drinks, and non-alcoholic beer and beverages.

**7.1 Applying the balanced scorecard framework to assess the company's performance**

The balanced scorecard framework was applied to Dirham Industrial Company for the period from 2019 to 2021, using 2019 as the base year for comparison and analysis purposes as follows:

**1. Financial perspective:** It consists of a set of measures that are used to evaluate the company's performance, namely:

**1.1 Company expenses**

**Table (2): Company's expenses for the period 2019-2021. Amounts in thousands**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Salaries and wages | 835,527 | 1,296,556 | 55% | 2,100,313 | 151% |
| Commodity supplies | 4,764,496 | 6,359,162 | 33% | 12,023,069 | 152% |
| Service supplies | 1,036,097 | 985,207 | 5% | 897,778 | 13% |
| Purchases for selling | - | - | - | 1,402,406 | - |
| Interests and rents | 7 | 2007 | 286% | 1,257 | 17857% |
| Depreciation | 76,880 | 217,592 | 183% | 337,538 | 339% |
| conversion expenses | 715,882 | 541,359 | 24% | 928,722 | 30% |
| Other expenses | 5,480 | 2119 | 61% | 84 | 98% |
| Total expenses | 7,434,369 | 9,404,005 | 26% | 17,691,167 | 138% |

As shown in Table (1), the company's total expenses rose over the evaluation period, reflecting its strategy to expand its operations and increase most of its costs.

**1.2 Company revenues**

**Table (3): Company's revenue for the period 2019-2021. Amounts in thousands**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Current activity revenue | 11,152,463 | 14,871,981 | 33% | 24,513,999 | 119.8% |
| Revenue of financial investments | 22,534 | 11,677 | 48.2% | 12,477 | 44.5% |
| Other revenues | 2,746 | 5,909 | 115.2% | 13,666 | 397.7% |
| Total revenue | 11,177,743 | 14,889,567 | 13.3% | 24,540,142 | 119.5% |

Source: company records

Table (3) shows that the company's revenues grew substantially over the evaluation period, as a result of its product differentiation strategy that met the customer needs and preferences, as well as the increasing demand in the Yemeni market, which enabled the company to utilize the market potential and enhance its market share significantly.

**1.3 Net profit**

**Table (4): Company's net profit for the period 2019-2021. Amounts in thousands**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| **Total revenue** | 11,177,743 | 14,889,547 | 13.3% | 24,540,142 | 119.5% |
| **Total expenses** | 7,434,369 | 9,404,005 | 26% | 17,691,167 | 138% |
| **Net profit** | 3,743,374 | 5,485,562 | 65.5% | 6,848,975 | 82.9% |

Source: company records

The evaluation period witnessed a remarkable enhancement in the net profit of the company, which resulted from the substantial expansion of its revenues, market share and product quality. These factors contributed to strengthening the company's competitive edge in the market.

**1.4 Company liquidity**

It shows the company’s ability to provide the necessary liquidity to pay off its short-term liabilities. (As shown in Table 5)

**Table (5): Liquidity ratios for the period between “2019 – 2021”**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Current assets | The extent of the company's ability to pay its short-term liabilities | 6,811,540 | 9,921,632 | 45.6% | 13,455,603 | 97.5% |
| Current liabilities | 2,748,324 | 3,979,332 | 44.8% | 4,179,682 | 52.1% |
| Inventory | 4,515,480 | 9,011,006 | 99.6% | 7,309,451 | 61.9% |
| Current Ratio | 247.8% | 249% | 0.48% | 322% | 29.9% |
| Quick ratio | 83.5% | 22.9% | 72.6% | 147% | 76% |

Source: company records

**1.5 Revenue capacity of the company**

It shows the company's ability to use the invested capital to achieve profits

**Table (6): Revenue capacity of the company**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Sales | Improve the company's revenue capacity and the extent to which it exploits its invested capital | 11,015,589 | 14,626,485 | 32.8% | 22,456,985 | 103.9% |
| Invested capital | 5,145,472 | 7,599,170 | 47.6% | 11,366,884 | 120.9% |
| Net profit | 3,743,374 | 5,485,562 | 65.5% | 6,848,975 | 82.9% |
| Sales profit rate | 33.98% | 37.5% | 10.36% | 30.49% | 10.3% |
| Sales turnover | 214% | 192.47% | 0.06% | 197.56% | 7.7% |
| Rate of return on invested capital | 2,714,280 | 3,965,728 | 0.77% | 4,575,598 | 17.2% |
| **Residual income** | **2,714,280** | **3,965,728** | **46.1%** | **4,575,598** | **68.6%** |

Source: company records

1- Return on investment rate = Sales turnover

2- Residual income = net profit - the cost of capital

= Net profit + (invested capital x interest rate)

Interest rate 20% (represents the cost of capital, which is the interest rate on the loan).

**1.6 Indicators of sources and costs of financing**

**Table (7): Sources and cost of financing**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Nominal capital (riyals per share) | Self-financing the company's activities through its profits | 777,000 | 1,554,000 | 100% | 2,331,000 | 200% |
| Reserves | 4,368,472 | 6,045,170 | 38.38% | 9,035,884 | 106.8% |
| Net profit | 3,743,374 | 5,485,562 | 65.5% | 6,848,975 | 82.9% |
| Capital invested | 5,145,472 | 7,599,470 | 47.6% | 11,366,884 | 120.9% |
| Creditors | 2,703,023 | 3,934,031 | 45.5% | 4,134,381 | 52.9% |
| The rate of return per share | 4,818 | 3,530 | 27.7% | 2,938 | 39% |
| The rate of return on creditors | 138.5% | 139% | 0.36% | 165.6% | 19.6% |
| Debt rate on the invested capital | 52.53% | 51.77& | 1.44% | 36.37% | 30.8% |

Source: company records

Table (7) shows a decline in the earnings per share ratio, despite the growth of the company's profits, due to the increase in the company's nominal capital during the evaluation period. This was achieved by transferring some of the company's realized gains to the nominal capital and issuing more shares in the market. The table also reveals a noticeable drop in the return on invested capital ratio throughout the evaluation period, which implies a reduction in the company's risk exposure and its ability to fulfill its obligations effectively.

**1.7 Profitability indicators**

**Table (7): Profitability indicators for the period 2019-2021**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Sales | Development in profitability indicators of the company | 11,015,589 | 14,626,485 | 32.8% | 22,456,985 | 103,9% |
| Gross profit | 5,296,572 | 7,142,851 | 34.8% | 10,913,753 | 106% |
| Net profit | 3,743,374 | 5,485,562 | 65.5% | 6,848,975 | 82.9% |
| fixed assets | 1,082,256 | 1,656,780 | 53% | 2,090,963 | 93.2% |
| Total assets | 7,893,796 | 11,578,502 | 46.7% | 15,546,566 | 96.9% |
| Ratio of gross profit to sales | 48.80% | 48.83% | 1.56% | 48.59% | 1.1% |
| Gross profit ratio to fixed assets | 489.4% | 431.1% | 11.9% | 521,94% | 6.6% |
| سRate of return on fixed assets | 345.88% | 331.07% | 4.28% | 327,55% | 5.3% |
| Rate of return on total assets | 47.42% | 47.37% | 60.1% | 44,05% | 7% |
| Fixed assets turnover | 10,178 | 8,827 | 13.27% | 10740 | 5.5% |
| Total asset turnover | 1,395 | 1,263 | 9.46% | 1,444 | 3.5% |

Source: company records

The table indicates that the gross profit margin reflects the company's efficiency in covering the costs of its products in the market, as the company sustained an excellent gross profit margin during the evaluation period. Moreover, the table demonstrates that the return on fixed assets measures the contribution of fixed assets to the company's return, and the company achieved a satisfactory rate during the evaluation period. The company also attained favorable rates of return on total assets throughout the evaluation period, which signifies the company's ability to utilize its assets to generate profits.

**2. Customer Perspective**

This perspective encompasses activities that address customer needs and their future expectations to achieve customer satisfaction, which is one of the strategic objectives of the company and is based on retaining existing customers, acquiring new customers in the competitive market. The customer service perspective is manifested in the company's activity.

**2.1 The effect of sales growth on the company**

**Table (8): The effect of sales growth on the company**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Net sales | Increasing customer satisfaction to provide desired products | 11,015,589 | 14,626,485 | 32.8% | 22,456,985 | 103.8% |
| Current assets | 6,811,540 | 9,921,632 | 45.6% | 13,455,603 | 97.5% |
| Final stock | 46,929 | 119,111 | 153.8% | 11,234 | 137% |
| Planned sales | 9,000,000 | 1,950,000 | 116.66% | 19,500,000 | - |
| Sales ratio to current assets | 161.7% | 147.4% | 8.84% | 166.89% | 3.2% |
| Sales ratio to final stock | 234,73 | 122,80 | 47.68% | 201,88 | (14%) |
| Actual sales ratio to the planned sales | 122.4% | 75% | 37.72% | 115.2% | (5.9%) |

Source: company records

Table (8) reveals the following points: -

1. The sales to current assets ratio is moderate throughout the evaluation period and implies the investment of large amounts of current assets to satisfy the demand for sales growth.

2. The sales to total inventory ratio is high during the evaluation period and indicates the rapid conversion of inventory into sales.

3. The actual sales to planned sales ratio varied during the evaluation period due to inadequate planning in the company.

**2.2 The improvement in customer service activity**

**Table (9): The improvement in customer service activity**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Cost of marketing services | Improve customer services in line with increasing demand for the company's products | 612,874 | 766,569 | 25.07% | 2,783,909 | 354.2% |
| Amount of sales | 4,528,455 | 5,903,490 | 30.36% | 9,411,695 | 107.8% |
| Marketing outlets | 6 | 6 | - | 9 | 50% |
| Types of products | 3 | 4 | 33.33% | 4 | 33.33% |

Source: company records

Table (9) shows the rise in the cost of marketing services due to the company's strategy to differentiate its products in the market from other products, such as; measures to prevent counterfeiting of its products and advertisements in newspapers and TV to promote its products, which resulted in the growth of the company's sales amount by more than double. The company also has increased the number of distribution outlets through marketing associations from 6 to 9 complexes due to the large expansion in the company's activity and the increased demand for its products.

**3. Internal processes perspective**

**3.1 Energy utilization rate**

**Table (10(: The extent of the company's ability to exploit its energies**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Production capacity | Optimizing the company's energy | 22,350 | 22,350 | - | 22,350 | - |
| Planned energy | 4,500 | 10,000 | 122.22% | 10,000 | 122.22% |
| Actual production | 4,540 | 5,977 | 31.65% | 9,379 | 62.6% |
| Ratio of actual production to production capacity | 20.31% | 26.74% | 31.65% | 41.96% | 92.6% |
| Ratio of actual production to planned energy | 100.88% | 59.77% | 40.75% | 93.79% | (2.7%) |
| Hourly throughput | 498 | 614 | 23.29% | 710 | 212.6% |

The data provided in Table (10) lead to the following conclusions:

1. The company has attained a remarkable enhancement in the utilization rate of the company's production capacity during the evaluation period, 20.31%, 26.74%, and 41.96% from 2019-2021, respectively. This implies the company's ability to make various improvements and better use of energy.

2. There is a clear fluctuation in the ratio of actual production to the planned capacity of the company, 100.88%, 59.77% and 93.79% for the years of the study, respectively, indicating inadequate planning in the company.

3. The company has achieved a significant improvement in the productivity rate at 498, 614 and 710 hours for the years of study, respectively, due to increasing the efficiency of production lines and providing the necessary materials for production, as well as increasing Production efficiency of workers.

**3.2 Growth in monthly production**

**Table (11(: Growth in monthly production**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| January | Monthly production growth in response to the increased demand for the company's products | 141,579 | 256,392 | 81.09% | 308,307 | 117.7% |
| February | 193,024 | 303,194 | 57.07% | 420,283 | 117.7% |
| March | 245,274 | 423,655 | 72.72% | 776,619 | 216.6% |
| April | 335,906 | 551,963 | 64.32% | 862,651 | 156.8% |
| May | 488,617 | 582,599 | 19.23% | 869,430 | 77.9% |
| June | 520,800 | 572,274 | 13.81% | 990,594 | 90.2% |
| July | 533,527 | 770898 | 44.49% | 1,126,788 | 111.1% |
| August | 926,255 | 798,568 | 26.09% | 1,216,480 | 13.33% |
| September | 509,868 | 581,951 | 14.13% | 919,548 | 80.3% |
| October | 477,226 | 471,140 | (1.27%) | 882,684 | 84.96% |
| Nov | 298,655 | 310,639 | 4.01% | 555,798 | 86.1% |
| Dec | 184,947 | 354,042 | 91.42% | 450,034 | 143.33% |
| Total | 4,540,678 | 5,977,315 | 31.63% | 9,379,216 | 106.5% |

Source: company records Note: - the scale (a dozen units produced)

Through the above table, we notice an increase in the monthly production quantities during the study years, in response to the increasing demand for the company's products.

**4. Learning and growth**

**4.1 Development in associate preparation**

**Table (12(: Development in the rehabilitation of individuals within the company**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Higher Management | Preparing, qualifying and training the personnel working in the company | 3 | 2 | (33.3%) | 3 | - |
| Technicians | 20 | 26 | 30% | 25 | 25% |
| Permanent supervisors | 36 | 35 | (2.7%) | 36 | - |
| Temporary supervisors | 60 | 76 | (26.6%) | 150 | 150% |
| Ratio of permanent skilled and unskilled supervisors | 30 | 70 | 133.3% | 63 | 110% |
| Ratio of temporary skilled and unskilled supervisors | 107 | 322 | 200.9% | 350 | 227.1% |
| Permanent production services | 259 | 209 | (19.3%) | 188 | (27.4%) |
| Temporary production services | 224 | 154 | (31.25%) | 200 | (10.7%) |
| Permanent marketing services | 63 | 88 | 39.6% | 90 | (42.8%) |
| Temporary marketing services | 64 | 103 | 60.9% | 130 | 103.1% |
| Permanent management services | 60 | 43 | 28.3% | 45 | (25%) |
| Temporary administration services | 55 | 17 | (69.09%) | 60 | 9.1% |
| Total | 981 | 1145 | 16.7% | 1340 | 39.6% |

**4.2 The development in the qualifications of the company's employees**

**Table (13): Development in the qualifications of individuals**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Technical Trainee | Development in the qualifications of associates through the courses held by the company | 28 | 51 | 82.14% | 77 | 175% |
| Administrative Trainee | 3 | 5 | 66.67% | 7 | 139.3% |
| Total number of trainees | 31 | 56 | 80.64% | 84 | 1.709% |
| Training and qualification costs | 378,325 | 50500 | 33.48% | 750,000 | 0.982% |
| Ratio of a technical trainee to the total number of employees | 90.32% | 91.07% | 0.83% | 91.67% | 1.49% |
| Ratio of an administrative trainee to the total number of employees | 9.68% | 8.93% | 7.74% | 8.33% | (13.9%) |
| Average cost of training | 1,220,432 | 9,017,857 | 26.1% | 8,928,571 | (0.268%) |

Table No. (13) shows: The decline in training courses in the company despite the growth in their number from one year to another during the evaluation period, due to the administration’s lack of interest in developing the qualifications of its employees, and this is evident by the low cost of training and qualification in the company, due to the reduction in the cost of training from year to year and the decrease in the ratio of trainees to the total associate in the company.

**4.3 Company productivity indicators**

**Table (14): Company productivity indicators**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement** | **Target** | **2019** | **2020** | **Evolution rate** | **2021** | **Evolution rate** |
| Cost of final production | The extent to which individuals working in the company's productivity contribute | 5,847,918 | 7,727,609 | 32.14% | 13,540,942 | 75.22% |
| Number of workers in production | 736 | 892 | 21.2% | 1,012 | 13.45% |
| Number of employees in the company | 981 | 1,145 | 16.7% | 1,340 | 36.6% |
| Average productivity per capita at the level of production 1/2 | 795,540 | 8,663,238 | 9% | 13,380,081 | 68.4% |
| Average productivity per capita at the company level 1/3 | 5,961,180 | 6,749,003 | 13.2% | 10,104,956 | 69.5% |
| Research and development services | 1,989,226 | 3,053,195 | 53.5% | 4,168,284 | 109.5% |

Table No. (14) reveals: the improvement of the individual productivity at the level of production and the level of the company as a whole during the study period, due to the substantial growth in the company's activity as well as the experience and efficiency acquired by the working individuals during their long work period, and the high cost of research and experience services during the study period, due to the company's interest in developing its products.

The balanced scorecard translates the company's strategy into measures and goals that mutually reinforce each other as shown in Figure (2):

**Figure (2): Goals and measures of the company's balanced scorecard**

- Increasing the efficiency of workers to ensure higher productivity.

-Optimal utilization of material and human resources.

-Working to improve customer satisfaction and conviction.

-Achieve and provide liquidity and profits to implement a strategy.

-The company and support its economic and social shareholder.

Strategy

Vision

Enhancing the company's competitive advantage in the market by distinguishing its products

**Learning and growth perspective**

- Development in the preparation of associates.

-Development in workers' qualifications.

-Productivity indicators.

**Internal processes**

-Energy utilization ratios

- Improvement in production quality.

Growth in monthly production.

- Growth in the company's products

**Customer dimension**

-Sales growth impact.

- Improvement in customer service activity.

-Growth of the monthly share.

-Growth in the sale of products.

**Financial dimension**

-Liquidity

-Revenue capacity.

-Sources and cost

-Funding.

-Profitability

The balance in the balanced scorecard is achieved through correlation and interaction between the different measures in an attempt to achieve the interrelated objectives that the company needs to achieve, in order to create and maintain the competitive advantage of the company, by relying on the tangible and intangible assets of the company, and the balance can be illustrated through -:

**1. The impact of the individual's efficiency on the company performance:** The operational measures are indicators that show the progress that occurs in the company's operational processes, which leads to improving the performance of the company, as shown in Figure (3). And that ultimately works to increase the efficiency of workers in the company, which in turn leads to improving financial performance by relying on the interaction and interrelationships between operational and financial metrics.

**Figure (3): The impact of worker’s efficiency on the company's performance**

Enhance the company's competitive advantage

Vision

The improvement in the company’s profitability and revenue ability by raising the efficiency of employees in the company

Strategy

**Learning and growth perspective**

Development in workers' qualifications.

**Internal processes**

- Improvement in product quality

- Growth in production quantity.

**Customer dimension**

- Growth in the monthly market share

- Growth in product sales

**Financial dimension**

-Profitability

-Revenue capacity.

-Liquidity

**2. The balanced scorecard as a system of interrelated and integrated performance measures:** The balanced scorecard achieves balance by combining a set of coherent metrics that mutually reinforce each other to achieve the company's strategic objectives. Thus, the balanced scorecard comprises the performance system that reflects the company's vision and mission, and the critical success factors that define the proposed performance perspectives for different dimensions. Moreover, it enables the company to sustain and enhance its competitive advantage through the differentiation strategy, as illustrated in Figure (4) which depicts the company's balanced scorecard.

**Figure (4): Interaction, interdependence and complementarity in performance measures**

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Liquidity

The growth of the company's product sales

Ratios of achieving economic indicators

Social indicators

Revenue ability

Growth in the production of the company's products

Growth in monthly production

Evolution in associate preparation

Value Added

Programming

Sales growth on company activity

Growth in the monthly share

Productivity indicators

Improvement in customer service activity

Energy utilization ratios

Development in workers' qualifications

Improvement in product quality

Sources and financing cost

**Customer dimension**

**Learning and growth**

**Internal processes**

**Financial dimension**

**8. Conclusions and recommendations**

**8.1 Findings**

This study has revealed the following main findings: -

1. The dynamic and complex nature of the business environment requires the use of multiple and diverse indicators to assess the company's performance adequately and accurately, as relying on a single measure may not capture the full picture of the company's outcomes and processes.

2. The balanced scorecard provides a comprehensive and integrated framework for measuring the company's performance, as it incorporates both financial and non-financial indicators that reflect the results of the company's activities and operations.

3. The non-financial performance indicators are interrelated and mutually reinforcing, as they emphasize the link between internal excellence, customer satisfaction, and organizational learning and innovation. These three perspectives shape the future financial performance of the company, as well as the financial perspective that evaluates the current financial performance of the company in the balanced scorecard.

4. The balance in the balanced scorecard is achieved by creating a coherent and consistent set of financial and non-financial (operational) indicators that support each other and demonstrate the contribution of activities, individuals, and management to the attainment of the company's objectives.

**Practical implications**

1. The company achieved a remarkable improvement in its net profit during the evaluation period, which resulted from revenue growth, increased market share, and the company's ability to deliver high-quality products that enhanced its competitive advantage.

2. The company exhibited an excellent liquidity ratio of 274.8% in 2019 and 249% in 2020, which indicates the company's ability to meet its short-term obligations.

3. The company obtained satisfactory rates of return on invested capital, which were 72.75% in 2019, 72.18% in 2020, and 60.25% in 2021. The decline in the return on invested capital was attributed to a decrease in the profitability of sales and the turnover rate of the company.

4. The debt-to-equity ratio on invested capital decreased from 52.53% in 2019 to 36.37% in 2020, which implies a reduction in the company's risks and an increase in its ability to pay its debts.

5. The company maintained a good gross profit margin of 48% during the evaluation period, which reflects the company's efficiency in covering the costs of its products.

6. The company demonstrated a high capacity and effectiveness in marketing its products in the market, as the company set the shelf life of the product at two months from the date of production, but the storage period in winter did not exceed a week, while the product did not stay in the company's warehouses for more than two days in summer.

7. The company's sales volume increased more than twofold in 2020 compared to 2019 (base year) due to the company's great attention to marketing services to maintain the excellence of its products.

8. There was unused idle capacity, as the company only utilized 41.96% of its design capacity in 2021.

9. The company showed a lack of interest in developing the skills of its employees by providing training courses, except when necessary, and this was evident from the low cost of training and qualification.

10. There was a noticeable improvement in the individual productivity at both the production and the company levels due to the significant increase in the company's activity, experience, and efficiency gained by the employees working in the company.

**8.2 Recommendations**

Based on the findings of this study, the following recommendations are suggested:

1. Conducting an internal environment analysis of the organization to identify its strengths and weaknesses, as well as an external environment analysis to explore its opportunities and threats, and then aligning the strengths with the opportunities by achieving a balance between the components of the organization and ensuring the compatibility of performance with the specified objectives.

2. Applying the techniques offered by strategic cost management to provide useful information for developing and implementing competitive strategies that are suitable for these techniques within an integrated and comprehensive framework.

3. Adopting an integrated and comprehensive set of financial and non-financial indicators that include a number of operational and strategic performance indicators that provide a clear and objective picture of the performance outcomes.

4. Investing the cash surplus available in the company by expanding its production and service activities, as well as purchasing financial investments that generate financial benefits for the company.

5. Expanding the marketing activity of the company and delivering high-quality products compared to competitors, which leads to increasing its market share and achieving its goals.

6. Increasing the company's ability to utilize the capital to obtain returns on invested capital by increasing the turnover rate, sales profitability, or both.

7. Improving the gross profit margin achieved by the company by maintaining and enhancing the efficiency of the company in covering the costs of its products and selling them in the market.

8. Recruiting a specialized staff in accounting, financial, and marketing matters with high efficiency in planning the company's various sales and activities, so that it includes different specialties and takes into account the nature of the changes occurring in the market.

9. Increasing the market share of the company by conducting extensive market studies that help the company in setting sales plans based on scientific and practical foundations, as well as expanding the production volume and distribution outlets.

10. Utilizing the capacity available at the company in a manner that matches the actual demand for the company's products in the market.

11. Enhancing the product differentiation of the company in the market by maintaining the quality of the company's products by adhering to the standard specifications of the products.

**References**

[1]. Kaplan, Robert and Norton, David, "Why Does Business Need a balance scorecard" in Reading and Issues in cost Management" ed, reeve James, 2nd ed, South western college publishing 2000.

[2]. Kaplan, and Atkinson, advanced Management 3rd ed Prentice-Hall 1998.

[3]. Horngren, Charles, Foster, Datar George and srikant , Datar "Cost Accounting A managerial emphasis" 10th ed, prentice –Hall 2000.

[4]. Jiambalvo , James Management Accounting , John Wiley and sons Inc us, A 2001.

[5]. Hilton, Ronald, Maher, Micheal and Setto, frank," Cost management for Business Decision", Mc Graw-Hill,2000.