

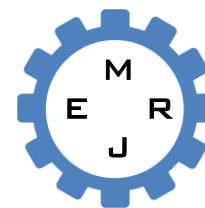


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### A NEW APPROACH TO ANALYZE INDUSTRIES BECOMING SICK: BANGLADESH PERSPECTIVE

A. K. M. S. Hoque<sup>1\*</sup>, S. K. Biswas<sup>2</sup> and M. A. Wazed<sup>3</sup>

<sup>1</sup>Bangladesh Steel & Engineering Corporation, Dhaka, Bangladesh

<sup>2</sup>Department of Mech. & Production Eng., Ahsanullah University of Science & Technology (AUST),  
Bangladesh

<sup>3</sup>Department of Mechanical Engineering, Chittagong University of Engineering & Technology (CUET),  
Bangladesh

**Abstract:** The performance of many established firms in Bangladesh seems to be really poor. This apprehension is becoming more intense day after day. This study is an attempt to identify the causes of sickness of industries becoming sick. For this purpose the study tried to shed light both on theoretical and conceptual issues considered as internal and external factors that usually influence industries. This study was made especially on matters influencing the productivity and market analysis. This paper points out some ways by showing how the sick industries can be improved. The overall objective is to overcome sickness and thus survive.

**Key Words:** *Sickness of industries, forecasting, marketing factors*

#### 1. INTRODUCTION

Before the birth of Bangladesh, the then Pakistan Government created Pakistan Industrial Development Corporation (PIDC). PIDC made significant contribution in the establishment of industrial units in sectors like jute, paper board, cement, fertilizer, sugar, chemicals, textiles and ship building, etc. At that time non-Bengalese dominated the list of entrepreneurs to establish many new industries in the then East Pakistan, now Bangladesh. After the independence of Bangladesh some industries have been nationalized through Government policy. Table 1 shows the nationalized enterprises and their related corporations.

Table 1 Nationalized enterprises and their related corporations [1]

Name of the corporation	Total numbers of established industries in '70s	Presently owned by the corporation
Bangladesh Jute Mills Corporation.	77	24
Bangladesh Textile Mills Corporation	72	18
Bangladesh Sugar and Food Industries Corp.	54	16
Bangladesh Steel & Engineering Corporation	54	12
Bangladesh Chemical Industries Corporation	13	13

#### 2. MEANING OF SICKNESS

Sick industries refer to those units which perform poorly against expected results, incur cash losses for consecutive years, erode away almost whole of the net worth of working capital and obviously fail to service the debt obligations. The major criteria [2] to identify a sick unit may generally be listed as follows:

- A unit incurring financial loss, not being capable to produce at or above break- even point
- A unit incurring continuous cash losses
- A unit having negative equity
- A unit having excess of current liabilities over current assets
- A unit having low capacity utilization
- A unit having worsening debt-equity ratio.

It can be said that an industry becomes sick if it suffers continuous losses, or if the gradual wiping out of its capital starts. A sick industry is one whose financial viability is threatened by adverse factors and in a word, it can be said the industry cannot pull on its normal activities.

Many authors defined industries falling into sickness in many ways. According to R.V. Raman [3] an industrial unit can be termed as 'sick' if one or more of the following:

- When the company has negative working capital
- Cash inflow during the last three years has been progressively going down

\* Corresponding author: Email: solaymanhoq@gmail.com; Tel: 880-1726574304

- Cash inflow is less than the operational commitment and inadequate for debt servicing or when debt servicing liabilities is equal to or less than one
- Cumulative loss exceeds capital and reserves.

### 3. CAUSES OF SICKNESS

The causes are classified into two broad categories: internal and external.

An industry might face various problems particularly at early stages of life and sometimes the problems persist as the industry moves forward through the future.

**3.1 External Causes :** External causes are those over which the industry has no control. This might be listed as follows:

- Irregular supply of energy /frequent power disruption
- Frequent change in govt. policies (specially about Tax determination, import/export policies / import liberalization)
- Delay in decision from bank and financial institution
- Shortage of working capital
- Higher rate of interest on bank loan
- Delay in implementing the project
- Labor unrest
- Political unrest
- Change in local and global condition
- Natural calamities
- Govt. policy (regarding production price and distribution), etc.

**3.2 Internal causes:** Internal causes are those which are within the control of the management. These may include as below:

- Over employment /improper man-power planning
- Lack of proper education and training
- Non-availability of skilled labor
- Poor management
- Improper planning, location and layout
- Inadequate quality control
- Faulty project planning and appraisal
- Old machineries and technology
- Over estimation of demand
- Inadequate market survey
- Poor financial management policies
- Improper managing of accounts
- Incorrect financial analysis for investment
- Labour problem, etc.

### 4. SUB-SECTORAL / ENTERPRISE LEVEL SICKNESS

Saha [2] carried out a research work on industrial sickness of the DFI (Development Financing Institution) financed projects in Bangladesh. The sample was taken from the identified sick list approved by the Sick Industry Cell of Bangladesh in 1992. Based on his study report the principle causes attributed to the sickness are as follows. The authors too made some study and found almost similar results [11].

#### Internal:

- i. Marketing problem (31%)
- ii. Management inefficiency (22%)
- iii. Imbalance of machinery and appropriate technology(12%)

- iv. Delay in implementing the project (12%)
- v. Faulty project planning and appraisal (14%)
- vi. Others (Labour problem) (9%)

#### External

- i. Delay in loan sanction and disbursement (22%)
- ii. Non-availability / shortage of working capital (21%)
- iii. Power problem (15%)
- iv. Changes in Government policy (13%)
- v. Non-availability/ irregular supply of raw material (11%)
- vi. Natural calamities (5%)
- vii. Political unrest (5%)
- viii. Others (8%)

Saha [2] showed that most of the sick projects (64%) were abolished during the 1980's and average capacity utilization of the sick projects was about 41%.

### 5. PRODUCTIVITY

It is known that the condition of an enterprise can be judged to some extent by considering its productivity situation at a glance along with the other measures to measure the condition. Productivity is an overall measure of the ability to produce goods or services [5]. More specially, productivity is the measure of how specified resources are managed to accomplish timely objectives as stated in terms of quantity and quality. Productivity is concerned with the effective and efficient utilization of resources (inputs) in producing goods and/ or services (output). Total productivity is the ratio of total output to the sum of all input factors (Eq. 1).

$$\text{Productivity} = \text{Total output} / \text{Total input} \quad (1)$$

### 6. PRODUCTIVITY ANALYSIS

Productivity is usually expressed in three forms: Partial productivity, Total factor productivity, and Total productivity. The partial productivity is discussed below:

**6.1 Partial Productivity:** Partial productivity is the ratio of output to one class of input, e.g., labor productivity is thus the ratio of output to labor input. (Eq.2)

$$\text{Labor Productivity} = \text{Output} / \text{Labor input} \quad (2)$$

**6.2 Capital productivity:** Capital productivity is the ratio of output to capital input. (Eq.3)

$$\text{Capital Productivity} = \text{Output} / \text{Capital input} \quad (3)$$

Table 2 below shows some productivity data of Eastern Tubes Limited, a firm producing tubular electrical light of length 4 feet and 2 feet, in Dhaka of Bangladesh.

Increasing or decreasing of labor productivity [9] in an enterprise occurs by increasing or decreasing the ratio of sales per employee and value added ratio (Eq. 4).

$$\begin{aligned} \text{Labor Productivity} &= \text{Value addition} / \text{No of employees} \\ &= (\text{Net sales} / \text{No. of employees}) \times (\text{Value addition} / \text{Net sales}) \\ &= \text{Sales per employee} \times \text{Value addition ratio} \end{aligned} \quad (4)$$

From Table 2, we can find that labor productivity was 1.51 in FY 2007-08 and it decreased gradually. To overcome this situation the enterprise had to increase proper marketing activities of its product. Capital productivity too was not good

Table 2 Productivity Data of Eastern Tubes Limited [7],[8]

	Financial Year					
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Labor Productivity	1.46	1.29	1.51	1.46	1.50	1.02
Capital Productivity	3.85	3.66	4.54	4.72	5.25	4.03
Total Productivity	0.69	0.68	0.62	0.72	0.71	0.60

at all but it was seen that it maintained increasing trend until '09-'10; anyway this trend of increasing is a good sign / indication.

It is found that total productivity of the industry may not be taken as that very good if considered in the overall sense, it has been gradually decreasing from the base year 2005-06 to 2007-08 and again it increased for short period and further it went down in the financial year 2010-11. In a word we can say that it shows erratic results

From this situation we may conclude that production should be increased gradually, the enterprise needs to increase proper marketing activities, wastages in production are to be reduced and finally quality of the production should also be ensured.

## 7. MARKET ANALYSIS

Discussion with the executives of enterprises, reveal that there is a virtual absence of information with respect to the market analysis. The top management does not call for such information in its decision making. A goal of a market analysis is to determine the attractiveness of a market and to understand its evolving opportunities and threats as they relate to strengths and weakness of the firm. David A. Aaker [6] outlined many dimensions of a market analysis which include Market size, Market growth rate, Market profitability, Industry cost structure, Distribution channel, Market trends, Key success factors, etc.

### 7.1 Market Size:

The size of the market can be evaluated based on present sales and on potential sales if the sale of the product can be expanded. Data from the Government and trade associations, financial data from major customers and customer surveys are some information sources for determining market size.

### 7.2 Market Growth Rate:

It is the annual increase in product sales within a given market population. The market growth rate is a factor which is to be considered when evaluating the performance of a particular product in a particular market. Market growth rate refers to the pace by which any given market increases or decreases in value. Companies use this measurement to determine the success or failures of current sales. When the rate increases, it is said to be positive development, while a decrease is associated with negative growth.

Companies keep track on market growth rate in an effort to decide the best direction of the business operations. It can be measured most accurately on a monthly or yearly rate. The firms analyze the health of the company through numbers for the annual increase in product sale as well as market share. Ultimately, the company wants to control as much of the industry in which it operates as possible. This helps in determining where to go with a marketing campaign and if the product or service is being fully saturated to its potential.

Demand in a market can be forecasted by various methods. In the following one of the useful methods is discussed briefly as it has been used to forecast sales volume.

## 8. EXPONENTIAL SMOOTHING

Exponential Smoothing is a sophisticated weighted moving average forecasting method that is easy to use (Eq.5). It involves very little record keeping of past data. The basic exponential smoothing formula can be shown as follows:

$$F_t = F_{t-1} + \alpha (A_{t-1} - F_{t-1}) \\ = \alpha A_{t-1} + (1 - \alpha) F_{t-1} \quad (5)$$

where  $F_t$  = new forecast;  $F_{t-1}$  = previous forecast;  $\alpha$  = Smoothing Constant ( $0 \leq \alpha \leq 1$ );  $A_{t-1}$  = previous periods actual demand.

In simple terms, this equation states that next year's sales will be governed by two factors, first, the market behavior (sales) of new year and second, the market behavior in previous periods. In Table 3 forecasted data of Sales of Eastern Tubes Ltd. has been summarized. Where  $\alpha = 0.2$  was used. Eastern Tubes Ltd. has been using  $\alpha = 0.2$  for long as it minimized the MAD (Mean Absolute Deviation) for the same product in the past, for the year 2005-06 and onward.

Table 3 Forecasted sales of Eastern Tubes Ltd. [7],[8] (Fig. in thousand)

Sl. No.	Financial Year	Actual Sale	Forecasted Value
1	2005-06	644	723
2	2006-07	490	707
3	2007-08	493	664
4	2008-09	449	630
5	2009-10	500	604
6	2010-11	455	583
7	2011-12	512	563

An exponentially weighted moving average with a smoothing constant  $\alpha$ , corresponds roughly to a simple moving average of length (i.e., period)  $n$ , where  $\alpha$  and  $n$  are related by, Eq. 6.

$$\alpha = 2 / (n + 1) \\ \text{or } n = (2 - \alpha) / \alpha \quad (6)$$

For most businesses, an Alpha parameter smaller than 0.4 seems to become often effective. From the forecasting analysis, it is seen that with the decrease of data of actual sales, forecasted sales values have also been decreased. So, we may conclude that the marketing inputs are necessary for the analysis and thinking about sick or would be sick units (say for Eastern Tubes Limited.)

## 9. REHABILITATION

We think, the responsibility for reviving sick units rests largely with Government and financial institutions. The role

of the government is to bring about changes in management by using the authority and power available under the Industries and Companies Act. The government can also help in controlling sickness by not making sudden and frequent changes in the industrial policies.

Financial institution plays a major role in the rehabilitation of sick units. In the case of established unit that become sick, commercial banks and established financial organizations may play a dominant role. Financial Institution may come forward to help the sick units in general, which are facing problem due to shortage of working capital, by providing the bank loan.

We think, an important aspect of assistance by financial institutions is the conversion of past loans into equity, to provide relief from interest burden. The government may also form a committee for continuous monitoring the activities of sick units. Monitoring and supervisory services should be improved to ensure proper use of fund [10]. The aspect of supervision of this committee is to locate surplus assets of industrial units which can be sold, for mobilizing funds.

## 10. RECOMMENDATIONS

The authors have studied the big and medium industries of Bangladesh steel & Engineering Corporation and Bangladesh Chemical Industries Corporation only. The natures of causes of operation of heavy industries are not same with those of the natures of Small and Medium Enterprises (SME). So the recommendations for improvement given here may only be applicable for big and medium industries. Our recommendations for the improvement of conditions of the sick industries can be summarized as follows:

- The enterprise has to increase proper marketing activities of its products
- Proper utilization of raw materials is to be ensured
- Wastage of raw materials should be reduced
- Unnecessary expenditure is to be controlled
- Inventory should be controlled
- Labor productivity should be increased
- Surplus assets is to be sold out
- Lowering of interest rate on industrial loan is a necessity
- Supply of electricity and other utilities on regular basis is to be made
- Provision should be made for the continuous availability of necessary working capital
- The government policy should not change frequently policies relating to duty and tax structure
- Labor unrest has to be removed at any cost
- Utilization of full production capacity should be ensured
- Supply of adequate raw materials is to be ensured
- Sanction and disbursement of loan when needed is to be ensured for implementation the project as per schedule
- BMRE (Balancing, Modernization, Rehabilitation and Expansion) and product diversification wherever possible should be undertaken [10].

## 11. CONCLUSIONS

From our study, we found that productivity analysis and improvement techniques are either partially followed or ignored. We think, due to limited application and non-application of

production planning and control tools the industries are suffering. We also found that the machineries of the industry where we made our case study are too old [12] by which the improvement of productivity is not possible and, further there is the absence of motivation to the employee and of the absence of marketing drive.

So, we may conclude that production should be increased gradually and quality of the product should be ensured. Also the enterprise needs to increase marketing drive to avoid becoming a sick industry.

## REFERENCES

- [1] Chittagong University Studies, University of Chittagong, Commerce Vol. 5, pp. 325-345, 1989.
- [2] Economic Policy Paper on "Sick industries: causes, remedies and prevention", pp.1-19. [online] Available: <http://www.Hustgeni.com/host-info/dhakachamber.com>
- [3] R. V. Raman, "Industrial sickness in India-A few teasing thoughts", Decision, Indian Institute of Management, Calcutta, Vol. 6, No. 1, pp.3-7, Jan. 1979.
- [4] J. Heiger and B. Render, Productivity Operations & Management., pp. 127-143.
- [5] Web site: [www.referenceforbusiness.com/management/Pr-Sa/Productivity-Concept-and-Measures](http://www.referenceforbusiness.com/management/Pr-Sa/Productivity-Concept-and-Measures)
- [6] D. A. Aakar, "Market Analysis" [Online] Available: [www.netmba.com/marketing/market/analysis](http://www.netmba.com/marketing/market/analysis)
- [7] MIS report 2005-06, 2006-07 and so on, BSEC.
- [8] Audit report 2005-06, 2006-07 and so on, BSEC.
- [9] National Productivity Report, September, 2010.
- [10] S. M. J. Alam, "Industrial rehabilitation strategy paper Bangladesh", Prepared for Ministry of Industries, August, 2003.
- [11] A. K. M. S. Hoque, S. K. Biswas and M. A. Wazed, "Some suggestions relating to reduction of problems of industries becoming sick in developing countries", Submitted to 'Decision', Indian Institute of Management Calcutta, India. February, 2015.
- [12] Hasan, Jahid, et al., "Study and improvement of the condition of a local industry through the application of re-engineering & productivity improvement methods (case study in a company, Tejgaon, Dhaka)", an undergraduate thesis Submitted to MPE Dept., AUST, in Fall 2013.