

# A STUDY ON OPERATING EFFICIENCY IN DYNAMATIC TECHNOLOGIES LIMITED (DTL), BANGALORE

#### S. Anusha\*

N. Sathyanarayana\*\*

**Abstract:** Operational Efficiency occurs when the right combination of people, process, and technology come together to enhance the productivity and value of any business operation, while driving down the cost of routine operations to a desired level. The end result is that resources previously needed to manage operational tasks can be redirected to new, high value initiatives that bring additional capabilities to the organization. This paper examined the operating efficiency in Dynamatic Technologies Limited. The study identified the efficient utilization of the available funds through proper management of the operating efficiency and to find out the correlation between the Profitability and Operating efficiencyduring the study period. The result showed, there was no optimal utilization of fixed assets in the year 2010-11 since the fixed asset turnover ratio was lowest compared to other years. The company had negative working capital in the year 2010-11 to 2012-13 with a decreasing trend. Also the result showed the decreasing trend in current ratio during study period. It is suggested to maintain sufficient current ratio by reducing current liabilities (or) by increasing current assets (or) both to make smooth run in future. From the analysis it can be suggested that the gross profit and net profit can be improved by increasing the sales of the company. Key Words: Correlation, Expenditure, Operating efficiency, Revenue, Ratio and Sales.

\* MBA Student, 4<sup>th</sup> Sem., Department of Management Studies and Research Centre, T John Institute of Technology, Bangalore, Karnataka

<sup>\*\*</sup> Asst. Professor, Department of Management Studies and Research Centre, T John Institute of Technology, Bangalore, Karnataka



# 1) INTRODUCTION

Mechanical engineering industry encompasses all mechanical operational like designing manufacturing or maintenance of mechanical structures. Mechanical engineering industry also deals with the engineering equipment's and accessories like Space crafts, automobile formation was in the year in 1847 by Britain.

Dynamatic technologies Limited (DTL) was incorporated on 8<sup>th</sup> March 1973, promoted by Mr. J. K. Malhoutra, present Chairman DTL was established with technical collaboration from Dowty Hydraulic Hydraulics Limited. In 1984, it indigenized the technology and ended their collaboration with Dowty, becoming one of the key players in the hydraulics field in India and worldwide.

Company's product range covers 2800 varieties of Hydraulics Gear Pumps and Hydraulics Systems, which is their forte. They also have diversified applications in the Defense & Aerospace Sectors and in Metallurgy. With that start thirty three years ago, they have now come a long way with ever increasing scale of operations and plans for expansion. Company's main manufacturing plant as well as the Head Office is suited at Dynamatic Park, Peenya, Bangalore. They have two plants in Chennai and one plant in Swindon, United Kingdom.

# 2) OPERATING EFFICIENCY (RATIO ANALYSIS)

**Operational efficiency – it's not just about cost cutting** Efficiency isn't just about reducing costs; other business objectives, including service quality, still have to be achieved in order to keep existing customers and revenue. Many organisations are too concerned with costs and are not aware that the real business value can be destroyed if approached purely as a cost cutting exercise.

Operating efficiency can be defined as the ratio between the input to run a business operation and the output gained from the business. When improving operational efficiency, the output to input ratio improves.

"Operational Efficiency is - what occurs when the right combination of people, process, and technology come together to enhance the productivity and value of any business operation, while driving down the cost of routine operations to a desired level. The end result is that resources previously needed to manage operational tasks can be redirected to new, high



value initiatives that bring additional capabilities to the organization."-Ensynchanization"-Ensynch

# 3) LITERATURE REVIEW

**Manjulakshmi (2013)** conducted a Comparative Study of Profitability of Two Companies a link between the concepts using Equity Multiplier, Profitability, Ratio and Turnover. Profitability is one of the factors reflected in share price. Therefore, it is necessary to know how to analyze various facets of profitability. Every business should earn sufficient profits to survive and grow over a long period of time. The firm should manage all aspects of the business in such a way that revenues are maximized and costs are minimized for maximizing profit".

**Khatik S. K. and Amit Kr. Nag (2013)** "This study was based on Appraisal of Fixed Assets of a Public Sector Undertaking. A Case Study of Madhya Pradesh State Agro Industries Development Corporation Limited. The study on analysis of profitability operational and financial efficiency of limited company concluded that huge amount of total asset are not properly utilised will reflect the profitability of the firm."

**Maheswara Reddy D and Mohan (2013)** analysed that if ROCE is far away from the industry average will show the ineffective utilisation of resources. DTR of the company reflects the efficient collection management.

**Faisal Abbas and Um-e- Habiba (2013)** "The main purpose of this study was to analyze the impact of liquidity on the performance of sugar industry in Pakistan. The data were collected from the non -financial companies' analysis of the State of Bank in Pakistan for the period of six years covering 2006-2011. For the purpose of analysis we used very famous software called SPSS and we have used regression analysis for our study result purposes".

# 4) **OBJECTIVES OF THE STUDY**

- 1. To know operating efficiency of Dynamatic Technologies Limited (DTL).
- 2. To identify the efficient utilization of the available funds through proper management of the operating efficiency.
- 3. To correlate the Profitability and Operating efficiency of Dynamatic Technologies Limited.
- 4. To offer suggestions to improve operating efficiency of DTL.



# 5) NEED FOR THE STUDY

- > The prime importance of the study is to analyze the maintenance of operations.
- > To have practical knowledge of operating efficiency in the company.
- The findings of the study can be used as secondary data for the various future study purposes.
- > Operating efficiency enables a firm to take the time dimension into account.

# 6) LIMITATIONS OF THE STUDY

- The study was limited to be the information available in the published financial statements.
- > Unavailability of confidential data was another limitation of the study.
- Ratios are only the postmortem of what happened in the past.

# 7) RESEARCH METHODOLOGY

The present study has been conducted on the basis of secondary data and is descriptive in its nature. The study period is confined to a period of five financial years from 2008-09 to 2012-13. The required secondary data for the study was collected through different websites, annual reports of DTL, different journals. The researcher selected dynamitic technologies limited for the study. To make the analysis meaningful advanced statistical tools like – Ratios, Mean and percentages were applied. To test hypothesizes the correlations and Regression was applied with the help of SPSS.21 Software package.

# 8) DATA ANALYSIS

# TABLE: 1 SHOWING FIXED ASSETS TURNOVER RATIO

		(`Rs in lacs)		
Years	Sales	Net Fixed assets	Fixed Assets turnover ratio	
2008-09	29,365	20,019	1.47	
2009-10	28,310	21,832	1.30	
2010-11	31,054	26,121	1.19	
2011-12	43,406	28,320	1.53	
2012-13	38,863	29,156	1.33	

Source: Annual reports of Dynamatic technologies limited.







#### INTERPRETATION:

A higher ratio is the indicator off over trading of fixed assets, while a low reveals ideal capacity in DTL. From the table 1itcan be identified that, the fixed asset turnover ratio is volatile during study period. In the year 2010-11 was showed there was no optimal utilization of fixed assets since the ratio is lowest compared to other years. The highest ratio in the year 2011-12 is 1.53 times.

#### TABLE: 2 SHOWING WORKING CAPITAL TURNOVER RATIO

(	`Rs	in	lacs)
			1000

Years	Sales	Working Capital	Working Capital turnover ratio
2008-09	29,365	7,956	3.69
2009-10	28,310	7,712	3.67
2010-11	31,054	-5131	-6.05
2011-12	43,406	-8046	-5.39
2012-13	38,863	-11,546	-3.36

Source: Annual reports of Dynamatic technologies limited.







#### INTERPRETATION:

Lower the working capital ratio indicates the inefficiency of the management. From the table 2 itcan be identified that, the company had negative working capital in the year 2010-11 to 2012-13 with a decreasing trend. The negative working capital is very good sign for management of current assets and current liabilities. In the year 2008-09 to 20012-13 the company has working capital turnover ratio 3.69, 3.67, -6.05, -5.39 and -3.36 respectively.

Years	Sales	Average debtors	Debtors Turnover Ratio	Average collection period in days
2008-09	29,365	7,742	3.79	96.31
2009-10	28,310	6,642	4.26	85.68
2010-11	31,054	8,683	3.58	101.96
2011-12	43,406	9,589	4.53	80.57
2012-13	38,863	6,857	5.67	67.37

#### TABLE: 3 SHOWING DEBTORS/ RECEIVABLE TURNOVER RATIO

(`Rs in lacs)

**Source:** Annual reports of Dynamatic technologies limited.

#### **INTERPRETATION:**

This ratio measures how many times a company converts its receivables into cash in a year. Average collection period represents on an average how many days it takes to collect an account receivable. It measures the quality of debtors, since it measures the rapidity or slowness with which money is collected from them. It implies prompt payment by the debtors. It is inferred from the above table 4.6 that debtors turnover ratio for the years 2008-09 to 2012-13 are 3.79, 4.26, 3.58, 4.53 and 5.67 respectively. The debtor's turnover ratio was increased during the study period. The company recorded highest average collection period in the year 2010-11 is 101.96 days but later it decreased to 67.37 days by the year 2012-13. It is a positive sign of company debtor's management.

#### TABLE: 4 SHOWING CASH TURNOVER RATIO

(`Rs in lacs)

Years	Sales	Cash	Cash Turnover Ratio
2008-09	29,365	729	40.28
2009-10	28,310	525	53.92
2010-11	31,054	701	44.30
2011-12	43,406	788	55.08
2012-13	38,863	628	61.87

Source: Annual reports of Dynamatic technologies limited.



#### INTERPRETATION:

The standard or ideal cash turnover ratio is 10:1. It indicates the effective utilization of cash resources of the company form the above table 4 found that, the company had very good cash turnover ratio in the year 2012-13 was 61.87. From the year 2008-09 to 2012-13 cash turnover ratio has been increasing gradually from 40.28 to 55.08 and which were more than the standard ratio. It is inferred that the company was maintaining very good cash turnover ratio during the study period.

# TABLE: 5 SHOWING CURRENT RATIO

		•	
Years	Current assets	Current liabilities	Current Ratio
2008-09	15,380	7,424	2.07
2009-10	15,052	7,340	2.05
2010-11	20,362	10,204	2.00
2011-12	21,547	29,593	.73
2012-13	19,919	31,465	.63

Source: Annual reports of Dynamatic technologies limited.

#### INTERPRETATION:

Table 5 shows the current ratio for the study period. The company had recorded the decreasing trend in current ratio during study period. But the first three years from 2008-09 to 2010-11 the company had satisfactory ratio, later years the company does not maintained sufficient current assets to meet the current assets up to standards. It was a serious bad condition faced by the company during last 2 years during study period.

# TABLE: 6 SHOWING QUICK/ LIQIUD/ ACID TURNOVER RATIO

			, , , , , , , , , , , , , , , , , , ,
Years	Quick assets	<b>Current liabilities</b>	Quick Turnover Ratio
2008-09	11,635	7,424	1.57
2009-10	10,794	7,340	1.47
2010-11	14,642	10,204	1.43
2011-12	15,658	29,593	0.53
2012-13	13,356	31,465	0.42

(`Rs in lacs)

(`Rs in lacs)

Source: Annual reports of Dynamatic technologies limited.

# INTERPRETATION:

A quick ratio of 1:1 indicates standard solvent position. This ratio is also called acid test ratio. This ratio serves as a supplement to the current ratio in analysing liquidity. But the first three years from 2008-09 to 2010-11 the company had satisfactory ratio, later years the



company does not maintained sufficient current assets to meet the current assets up to standards. It was a serious bad condition faced by the company during last 2 years during study period.

#### TABLE: 7 SHOWING NET PROFIT TURNOVER RATIO

(`Rs in lacs)

Years	Net profit	Net Sales	Net profit Turnover Ratio
2008-09	48.7	29,365	0.17
2009-10	108.2	28,310	0.38
2010-11	148.4	31,054	0.48
2011-12	165	43,406	0.38
2012-13	30	38,863	0.08

**Source:** Annual reports of Dynamatic technologies limited.

#### **INTERPRETATION:**

A low Net profit ratio is preferable as it indicates lower profitability from the table 7 it is identified that in the year 2010-11 the net profit is high at 0.48 and thereafter it was gradually decreasing and reached 0.08. It is suggested for the company to improve net profit position since the profit motive is the main objective to survive business.

 TABLE: 8 SHOWING CREDITORS / ACCOUNTS PAYABLE TURNOVER RATIO

(`Rs in lacs)

Years	Purchase	Average trade creditors	Creditors Turnover Ratio	Average payment period in days
2008-09	17,128	2,361	7.25	50.34
2009-10	16,443	3,545	4.64	78.66
2010-11	20,414	5,772	3.54	103.11
2011-12	24,796	9,542	2.59	140.93
2012-13	20,765	8,758	2.37	154.00

Source: Annual reports of Dynamatic technologies limited.

#### INTERPRETATION:

Average payment period measures the quality of creditors, since it measures the rapidity or slowness with which money is payment from the company. Average payment period implies prompt receivables by the creditors. It is inferred from the above table 8 that creditor's turnover ratio form the year 2008-09 to 2012-13 is 7.25, 4.64, 3.54, 2.59 and 2.37 respectively. From the analysis the creditor's turnover ratio was increased and there is a slight variation between last 4 years, this is because of decrease in purchase and also in creditors increase in the year 2012-13. The company recorded continuous growth of creditors/ account payable turnover ratio during study period by paying delay in creditors.

Vol. 3 | No. 6 | June 2014



#### Hypothesis 1:

Null Hypothesis: There is no actual correlation between income and expenditure of DTL.

Alternative hypothesis: There is a correlation between income and expenditure of DTL.

APPENDIX-1 Null Hypothesis is rejected as Pearson Correlation is 0.852, and p = 0.067 (p > 0.05) at confidence level of 0.01. Since p > 0.05, indicates there is strong positive correlation between income and expenditure of DTL. Hence **alternative hypothesis** is accepted.

# Hypothesis 2:

**Null Hypothesis:** There is no actual correlation between cost of material consumed and inventories maintained in DTL.

**Alternative hypothesis**: There is a correlation between cost of material consumed and inventories maintained in DTL.

APPENDIX-2 Null Hypothesis is Rejected as Pearson Correlation is 0.799, and p = 0.105 (p > 0.05) at confidence level of 0.01. Since p > 0.05, indicates there is strong positive correlation between cost of material consumed and inventories. Hence **Alternative hypothesis** is accepted.

### Hypothesis 3:

Null Hypothesis: There is no significant correlation between the income and profit of DTL.

**Alternative hypothesis**: There is a significant correlation between the income and profit of DTL.

APPENDIX-3 Null Hypothesis is Rejected as Pearson Correlation is 0.636, and p = 0.249 (p > 0.05) at confidence level of 0.01. Since p > 0.05, indicates there is positive correlation between income and profits of DTL. Hence **Alternative hypothesis** is accepted.

# <u>Hypothesis</u> 4:

**Null hypothesis:** There is no significant impact of income & expenditure on profitability of DTL.

**Alternative hypothesis:** There is a significant impact of income & expenditure on profitability of DTL.

The APPENDIX -4 **Model Summary** tables provides the R and R<sup>2</sup> value. The R value is 0.809, which represents the simple correlation. It indicates a lower degree of correlation between Income and profitability. Since the R<sup>2</sup> value is 65.4 per cent approximately for Income & Expenditure, it shows that Gross profit is affected by 65.4 per cent and remaining 34.6 per



cent by some other factor. **ANOVA** table indicates that the regression model predicts the outcome variable significantly well, p < 0.703, which is higher than 0.05, and we can say that, there is a no significant impact of Income & Expenditure on Gross Profit of DTL by not rejecting null hypothesis. **Coefficients** table provides us with information on each predictor variable. So the regression equation can be framed as:

# Gross Profit of DTL = 122.709 +0.009 (Income) +0.006 (Expenditure) -0.225 (Depreciation) <u>Hypothesis</u> 5:

Null hypothesis: There is no significant impact of sales on trade receivables of DTL.

Alternative hypothesis: There is a significant impact of sales on trade receivables of DTL.

The APPENDIX-5 **Model Summary** table provides the R and R<sup>2</sup> value. The R value is 0.500, which represents the simple correlation. It indicates a lower degree of correlation between trade receivables and sales. Since the R<sup>2</sup> value is 25 per cent approximately for trade receivables, it shows that sales is affected by 25 per cent and remaining 75 per cent by some other factor. **ANOVA** table indicates that the regression model predicts the outcome variable significantly well, p < 0.391, which is higher than 0.05, and we can say that, *there is no* significant impact of Sales on Trade receivables of DTL by not rejecting null hypothesis.

**Coefficients** table provides us with information on each predictor variable. So the regression equation can be framed as:

# Sales of DTL = 13169.712+ 2.661 (Trade Receivables)

# 9) FINDINGS:

- The fixed asset turnover ratio is volatile during study period. In the year 2010-11 was showed there was no optimal utilization of fixed assets since the ratio is lowest compared to other years.
- The company had negative working capital in the year 2010-11 to 2012-13 with a decreasing trend. The negative working capital is very good sign for management of current assets and current liabilities.
- The total assets turnover is less than 1 during the study period showed that the company is not utilized total assets.
- It indicated the company had good stock turnover ratio by reducing the investment in average stock.



- The company recorded highest average collection period in the year 2010-11 is 101.96 days but later it decreased to 67.37 days by the year 2012-13. It is a positive sign of company debtor's management.
- It reveals that the firm is maintaining same trend in current asset turnover during the study period.
- The creditor's turnover ratio was increased and there is a slight variation between last 4 years, this is because of decrease in purchase and also in creditors increase in the year 2012-13. The company recorded continuous growth of creditors/ account payable turnover ratio during study period by paying delay in creditors.
- The company had recorded the decreasing trend in current ratio during study period. It was a serious bad condition faced by the company during last 2 years during study period.
- > There is strong positive correlation between income and expenditure of DTL.
- There is strong positive correlation between cost of material consumed and inventories.
- > There is a significant relation the between income and profit of DTL.
- > There is a no significant impact of Income & Expenditure on Gross Profit of DTL
- > There is a no significant impact of Sales on Trade receivables of DTL

#### 10) SUGGESSIONS:

- It is suggested to maintain sufficient current ratio by reducing current liabilities (or) by increasing current assets (or) both to make smooth run in future.
- The company can put efforts to improve the negative working capital to utilize funds in the future.
- The company is having an average liquidity position because it does not have the ability to pay its current obligations in time and also the solvency position of the company is unstable.
- From the analysis it can be suggested that the gross profit and net profit can be improved by increasing the sales of the company.

#### 11) CONCLUSION:

From the study it is clear that Dynamatic Technologies Limited is performing well. It is notable that, the DTL sales not much affected by the market conditions and performing



consistently. The current study was only an effort to analyzing the operating efficiency of the company having similar features, this study can be further extended to study the operating efficiency of DTL, which would help the organizations to fine tune their products. The DTL was applying a good operating efficiency through the departments. It must have internal controls to protect its operating efficiency. Hence DTL is not only helping the rural society but is also catering the urban region by providing its products to all ages supplying hydraulics to nook and corner of all over the world.

# 12) **REFERENCES**:

# BOOKS

- I.M. Pandey (1999): "Financial management", Vikes Publication House Put. Ltd, Bangalore, 8<sup>th</sup> Edition.
- A.K. Sharma (2005) "Business Statistics" First published, Discovery Publishing House.
- M.N. Arora (2008) "Cost and management accounting" Third Edition, Himalaya Publishing House.

#### ARTICLES/JOURNALS

- Amit Kumar Dwivedi; PriyankoGhosh; G.S. Dangayach (2013) "Efficiency measurement of Indian steel industry using data envelopment analysis with special reference to public and private firms", International journals of Operational Research, Vol.18, No.4, pp.386 – 400".
- Manjulakshmi A. S. (2013) "A Comparative Study of Profitability of Two Companies a link between the concepts using Equity Multiplier, Profitability, Ratio and Turnover", International Journal of Research in Research and Management, Volume no. 4, Issue no. 10, pp. 58-63.
- Khatik S.K. and AmitKr.Nag (2013) "This study is based on Appraisal of Fixed Assets of A Public Sector Undertaking with reference to Madhya Pradesh state Agro industries development corporation limited", Indian Journal of Finance, Volume 7, Number 2, pp. 43-53.
- Faisal Abbas and Um-E- Habiba (2013) "Impact of Liquidity on the Performance of the Sugar Industry in Pakistan (Short Term Assets and Liabilities)", Research Journal of Commerce and Behavioural Science Volume: 02, Number: 07, pp. 01-08.



 Maheswara Reddy D and Mohan P (2013) "The study of Financial Performance of IFFCO Limited- A comparative analysis with the fertilizer Industry", The Management Accountant volume 48 July pp. 819-825.

#### NEWSPAPERS

- Business line,
- ➢ Economic times,
- Business standards

#### WEBSITES

- www.dynamatics.com
- www.wikipedia.com

#### REPORTS

> Annual Reports of Dynamatics Technologies Limited form (2008-09 to 2012-13)

۶

#### APPENDIX -1

Correlations						
		Income	Expenditure			
	Pearson Correlation	1	.852**			
Income	Sig. (2-Tailed)		.067			
	Ν	5	5			
	Pearson Correlation	.852	1			
Expenditure	Sig. (2-Tailed)	.067				
	N	5	5			

\*\*. Correlation is significant at the 0.01 level (2-tailed).

#### APPENDIX -2

Correlations						
	Cost of Material Consumed Inventories					
Cost of Matorial	Pearson Correlation	1	.799**			
Concurred	Sig. (2-Tailed)		.105			
Consumed	Ν	5	5			
	Pearson Correlation	.799	1			
Inventories	Sig. (2-Tailed)	.105				
	Ν	5	5			

\*\*. Correlation is significant at the 0.01 level (2-tailed).



# APPENDIX -3

Correlations						
		Income	Profit			
	Pearson Correlation	1	.636**			
Income	Sig. (2-Tailed)		.249			
	Ν	5	5			
	Pearson Correlation	.636	1			
Profit	Sig. (2-Tailed)	.249				
	N	5	5			

\*\*. Correlation is significant at the 0.01 level (2-tailed).

# APPENDIX -4

Model Summary							
Model R		R Square	Adjusted R	Std. Error of the			
			Square	Estimate			
1	.809 <sup>a</sup>	.654	385	62.33799			
a. Predictors: (Constant), Depreciation, Income, Expenditure							

ANOVAª								
Model		Sum of	Df	Mean Square	F	Sig.		
		Squares						
	Regression	7338.775	3	2446.258	.630	.703 <sup>b</sup>		
1	Residual	3886.025	1	3886.025				
	Total	11224.800	4					
a. Dependent Variable: Gross Profit								
b. Predictors: (Constant), Depreciation, Income, Expenditure								

Coefficients <sup>a</sup>								
Model		Unstandardized		Standardized	t	Sig.		
		Coefficients		Coefficients				
		В	Std. Error	Beta				
	(Constant)	122.709	726.058		.169	.893		
1	Income	.009	.060	1.181	.144	.909		
	Expenditure	.006	.048	1.082	.125	.921		
	Depreciation	225	.270	-1.704	834	.557		
a. Der	a. Dependent Variable: Gross Profit							



# APPENDIX -5

Model Summary						
Model	R	R Square	Adjusted R	Std. Error of		
			Square	the Estimate		
1	.500 <sup>a</sup>	.250	.000	6603.77594		
a. Predictors: (Constant), trade receivables						

	ANOVAª								
	Model	Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	43631075.263	1	43631075.263	1.000	.391 <sup>b</sup>			
	Residual	130829569.937	3	43609856.646					
	Total	174460645.200	4						
а	a. Dependent Variable: Sales								
b	D. Predictors: (Constant), Trade receivables								

	Coefficients <sup>a</sup>									
	Model	Unstandardized Coefficients		Standardized Coefficients	+	Sig				
Widdei		В	Std. Error	Beta		515.				
1	(Constant)	13169.712	21231.182		.620	.579				
T	Trade Receivables	2.661	2.660	.500	1.000	.391				
а	. Dependent Variabl	e: Sales								