CHAPTER- VI

INTRODUCTION

This chapter deals with intent to consolidate the key findings of the present study. Based on the findings of the study a few suggestions have been outlined. This study has been carried out with an aim to assess and measure the working capital management and profitability of select software companies in India, i.e., 10 companies have been selected on the basis of sales value of the company in this study. Those companies which have exceeding sales value invested more than Rs.500 crores; during the end of the study period which have been selected for the present study.

The present study covers a period of 10 years starting from 1998-1999 to 2008-2009 and the required data for the sample companies were collected from the compilation made by the Centre for Monitoring Indian Economy (CMIE). In this study various statistical tools such as Arithmetic mean, Standard Deviation, Co-efficient of Variation, Correlation, Multiple Regression, Trend analysis, ANOVA and Compound Annual Growth Rate (CAGR) has been used.

Findings of Working capital Analysis

Current Ratio: Current Ratio ranges between 1.44 percent and 9.57 percent. The lowest Current Ratio of 1.44 is found in Siemens Ltd and the highest Current Ratio of 9.57 is found in Infosys Ltd. It is inferred that the lowest Current Ratio and lowest standard deviation may lead to high rate of return on investment. On the other hand, the highest Current Ratio may result in low rate of return. Among the sample companies the Siemens Ltd has maintained a very good balance between the current assets and current liabilities so as to get relevant growth prospectus.

Liquidity Ratio: The lowest Liquidity Ratio of 0.30 is found in 3i InfoTech Ltd and the highest Liquidity Ratio of 5.59 is found in Infosys Ltd. It is inferred that the though the standard Liquidity Ratio is 1:1, lower Liquidity Ratios, which may lead to have poor balance in cash in hand. On the other hand, the Infosys Ltd has highest Liquidity Ratio which may affect the profitability of the company.
**Debtor Turnover Ratio:** The lowest Debtor Turnover Ratio of -247.44 is found in TCS Ltd and the highest Debtor Turnover Ratio of 42.89 is found in Siemens Ltd. It is inferred that the lowest Debtors Turnover Ratio, may lead to prompt payment made by the debtors. On the other hand, the highest Debtors Turnover Ratio indicates the inefficiency of trade Credit management.

**Working Capital Turnover Ratio:** The lowest Working Capital Turnover Ratio of 1.94 is found in Infosys Ltd and the highest Working Capital Turnover Ratio of 17.91 is found in Siemens Ltd. It is inferred that the lowest Working Capital Turnover Ratio which may lead to excess of net Working Capital and slow turnover of inventories. On the other hand, the highest Working Capital Turnover Ratio may result in high return of profit. Among the sample companies, Siemens Ltd has maintained a very good balance between Net Sales and Working Capital of the company.

**Total Assets Turnover Ratio:** The lowest Total assets turnover ratio of 0.54 is found in 3iInfoTech Ltd and the highest Total Assets Turnover Ratio of 2.87 is found in Siemens Ltd. It is inferred that the lowest Total Asset Turnover Ratio indicate under utilization of fixed assets. On the other hand the highest Total Asset Turnover Ratio may result in successful utilization of fixed assets in the firm.

**Fixed Assets Turnover Ratio:** The lowest Fixed Assets Turnover Ratio of 1.32 is found in 3iInfoTech Ltd and the highest Fixed Assets Turnover Ratio of 14.7 is found in Mphasis Ltd. It is inferred that the lowest Fixed Asset Turnover Ratio it indicate under utilization of fixed assets. On the other hand the highest Fixed Asset Turnover Ratio is found in Mphasis Ltd, may result in successful utilization of fixed assets in the firm.
**Cash to Current Assets Ratio:** The lowest Cash to Current Assets Ratio of 8.6 is found in 3i InfoTech Ltd and the highest Cash to Current Assets Ratio of 57.9 is found in Infosys Ltd. It is inferred that the lowest Cash to Current Assets Ratio may lead to high rate of return on investment. On the other hand, the highest Cash to Current Assets Ratio may result in low Rate of Return.

**Cash to Current Liabilities Ratio:** The lowest Cash to Current Liabilities Ratio of 28.1 is found in TCS Ltd and the highest Cash to Current Liabilities Ratio of 558.6 is found in Infosys Ltd. It is inferred that the lowest Cash to Current Liabilities Ratio may lead to high Rate of Return On Investment. On the other hand, the highest Cash to Current Liabilities Ratio may result in low Rate of Return.

**Cash Position Ratio:** The lowest Cash Position Ratio of 0.3 is found in Mphasis Ltd, NIIT Ltd, Zensar Ltd and the highest Cash Position Ratio of 5.6 is found in Tech Mahindra Ltd. It is inferred that the though the standard Cash Position Ratio is 1:1, lower Cash Position Ratio which may lead to have poor balance in cash in hand. On the other hand, the Infosys Ltd has highest Cash Position Ratio which may affect the profitability of the company.

**Fixed Assets Ratio:** The lowest Fixed Assets Ratio of 0.1 is found in Mphasis Ltd and the highest Fixed Assets Ratio of 0.5 is found in 3i InfoTech Ltd. Among the sample companies Mphasis Ltd, Tech Mahindra Ltd, Wipro Ltd and Zensar Ltd has maintained a very good balance between Fixed Assets and Long-Term Funds.

**Debt Collection Period:** The lowest Debt Collection Period -6176.5 is found in Zensar Ltd and the highest Debt Collection Period 29.7 is found in 3i InfoTech Ltd. It is inferred that the lowest Debt Collection Period it indicate that there is a prompt payment by debtors. On the other hand the highest Debt Collection Period which implies that payment made by trade
creditors are delayed. Among the sample companies Zensar Ltd, Wipro Ltd has maintained a very good balance between Debt and Collection Period.

**Annual Growth Rate**

The Compound Annual Growth Rate of Current Ratio has been registered from -26.04 to 9.40. Out of ten companies, 7 companies namely, Hexaware Ltd, Infosys Ltd, NIIT Ltd, Mphasis Ltd, TCS Ltd, Tech Mahindra Ltd, Wipro Ltd, indicate negative annual growth rate.

The Compound Annual Growth Rate of Working Capital Turnover ratio has been registered from -23.79 to 19.40. Out of ten companies, 4 companies namely, 3i InfoTech Ltd, Infosys Ltd Siemens Ltd, and Wipro Ltd, indicate a negative annual growth rate.

The Compound Annual Growth Rate of Cash Position Ratio has been registered from -32.24 to 24.62. Out of ten companies, 5 companies namely, 3i InfoTech Ltd, Siemens Ltd, NIIT Ltd, Infosys Ltd, TCS Ltd, Wipro Ltd, indicate a negative annual growth rate.

**ANOVA**

The analysis of variance has been used to ascertain whether there is a significant difference in working capital ratios. Overall analysis of variance explains that there is no significant difference in the working capital ratios. Hence all hypothesis variables (Current Ratio, Liquidity Ratio, Working Capital Turnover Ratio, Total Assets Turnover Ratio, Fixed Assets Turnover Ratio, Cash to Current Assets Ratio, Cash to Current Liabilities Ratio, Cash Position Ratio,) are accepted, except in the ratios of Debtor Turnover Ratio, and Debt Collection Period.
Correlation Analysis

The Correlation matrix of 3i InfoTech Ltd shows that the significant relationship between Cash Position Ratio to Cash Current Liabilities Ratio and Liquidity Ratio. The highest negative correlation was observed between Fixed Assets Ratio to Total Assets Turnover Ratio (-.77). The highest positive correlation implies that when there is an increase in Cash Position there is also an increase in Cash to Current Liabilities.

The Correlation matrix of Siemens Ltd shows that the significant relationship between Cash Position Ratio and Cash to Current Liabilities Ratio. The highest negative correlation was observed between Fixed Assets Ratio to Fixed Assets Turnover Ratio (-.71). The highest positive correlation implies that when there is an increase in Cash Position, there is also an increase in Cash to Current Liabilities.

The Correlation matrix of Hexaware Ltd from shows that the significant relationship between Cash to Current Liabilities Ratio and Liquid Ratio, followed by the Cash Position Ratio and Liquid Ratio to Cash Position Ratio and Cash to Current Liabilities Ratio. The highest negative correlation was observed between Cash to Current Assets Ratio to Fixed Assets Turnover Ratio (-.70). The highest positive correlation implies that when there is an increase in Cash to Current Liabilities Ratio, cash position ratio and there is also an increase in liquid ratio.

The Correlation matrix of Infosys Ltd shows that the significant relationship between Cash to Current Liabilities Ratio to Liquid ratio and Cash Position Ratio. The highest negative correlation was observed between fixed assets ratio to Fixed Assets Turnover Ratio (-.76). The highest positive correlation implies that when there is an increase in Cash to Current liabilities Ratio and Cash Position ratio, there is also an increase in Liquid Ratio.
The Correlation matrix of NIIT Ltd shows that the significant relationship between Cash to Current Liabilities Ratio to Liquid Ratio and Cash Position Ratio. The highest negative correlation was observed between Fixed Assets Ratio to Current ratio, Liquidity Ratio and Debtor Collection Period to Working Capital Turnover Ratio (-.69). The highest positive correlation implies that when there is an increase in Cash to Current Liabilities Ratio and Cash Position Ratio, there is also an increase in Liquid ratio.

The Correlation matrix of Mphasis Ltd shows that the significant relationship between Cash to Current Liabilities Ratio to Liquid Ratio and Cash Position Ratio. The highest negative correlation was observed between Debtor Collection Period to Working Capital Turnover Ratio (-0.82). The highest positive correlation implies that when there is an increase in Cash to Current Liabilities Ratio and Cash Position Ratio, there is also an increase in Liquid Ratio.

The Correlation matrix of TCS Ltd shows that the significant relationship between Cash Position Ratio and Cash to Current Liabilities Ratio. Negative positive correlation was observed between Working Capital Turnover Ratio to Current Ratio (-.78). The highest positive correlation implies that when there is an increase in cash position, there is also an increase in Cash to Current Liabilities.

The Correlation matrix of Tech Mahindra shows that the significant relationship between cash to Current Liabilities Ratio to Liquid Ratio and Cash Position Ratio significance. The highest Negative correlation was observed between Working Capital Turnover Ratio to current ratio (.88). The highest positive correlation implies that when there is an increase in Cash to Current Liabilities Ratio and Cash Position Ratio, there is also an increase in Liquid Ratio.
The Correlation matrix of Wipro Ltd shows that the significant relationship between Cash Position Ratio and Cash to Current Liabilities Ratio. The highest negative correlation was observed between Debtor Collection Period to Debtor Turnover Ratio (-.89). The highest positive correlation implies that when there is an increase in Cash Position, there is also an increase in Cash to Current Liabilities.

The Correlation matrix of Zensar Ltd shows that the significant relationship between Cash to Current Liabilities ratio to Liquid Ratio and Cash Position Ratio. The highest negative correlation was observed between Cash to Current Assets Ratio to Working Capital Turnover Ratio (.70) The highest positive correlation implies that when there is an increase in Cash to Current Liabilities Ratio, Cash Position Ratio and there is also an increase in liquid ratio.

Profitability Analysis

Gross Profit Ratio: The lowest Gross Profit Ratio of 163.7 is found in Tech Mahindra Ltd and the highest Gross Profit Ratio of 332.2 is found in 3i InfoTech Ltd. It is inferred that the lowest Gross Profit Ratio which may lead to decrease in sales volume and high competition. On the other hand the highest Gross Profit Ratio may result in increase in selling price without any proportionate.

Net Profit Ratio: The lowest net profit ratio 111.5 is found in Hexaware Ltd and the highest Gross Profit Ratio of 3245.7 is found in Mphasis Ltd. It is inferred that the lowest Net Profit Ratio which may lead to low performance of the business. On the other hand the highest Net Profit Ratio may result in high return to the shareholder.

Operating Profit Ratio: The lowest Operating profit ratio of 261.6 is found in Infosys Ltd and the highest operating profit ratio of 839.1 is found in Siemens Ltd. It is inferred that the
lowest Operating Profit Ratio which may lead to high profitability. On the other hand the highest Operating Profit Ratio may result in low profit and inefficiency of management.

**Return on Capital Employed:** The lowest return on capital employed of 13.7 is found in Hexaware Ltd and the highest Return On capital employed of 40.8 is found in Infosys Ltd. It is inferred that the lowest Return On Capital Employed which indicate that amount of capital employed in the firm was not properly utilized. On the other hand the highest Return On Capital Employed which may result in more efficiency in the utilization of capital employed.

**Capital Turnover Ratio:** The lowest Capital Turnover Ratio of 0.4 is found in 3i InfoTech Ltd and the highest Capital Turnover Ratio of 2.5 is found in Siemens Ltd. It is inferred that the lowest Capital Turnover Ratio which indicate that the firm has not properly utilized the capital employed. On the other hand the highest Capital Turnover Ratio which may result proper utilization of capital employed and efficient management

**Return on Shareholder Fund:** The lowest capital Return On Shareholder Fund of 8.3 is found in Hexaware Ltd and the highest Return On Shareholder Fund of 36.2 is found in Infosys Ltd. It is inferred that the lowest Return On Shareholder Fund which indicate that the firm has not properly utilized the capital employed. On the other hand the highest Return On Shareholder Fund employed which may result proper utilization of capital employed and efficient management

**Owned Capital Turnover Ratio:** The lowest owned capital turnover ratio of 0.7 is found in 3i InfoTech Ltd and the highest owned capital turnover ratio of 4.1 is found in Siemens Ltd.

**Expenses Ratio:** The lowest Expenses Ratio of 74.8 is found in Infosys Ltd and the highest Expenses Ratio of 502.4 is found in Zensar Ltd. It is inferred that the lowest Expenses Ratio which may lead to high rate of return. On the other hand the highest Expenses Ratio employed which may result in low Profitability of the company.
Administration Expenses Ratio: The lowest Administration Expenses Ratio of 32.6 is found in Tech Mahindra Ltd and the highest Administration Expenses Ratio of 162.1 is found in Zensar Ltd. It is inferred that the lowest Administration Expenses Ratio which may lead to high rate of return. On the other hand the highest Administration Expenses Ratio employed which may result in low Profitability of the company.

Selling and Distribution Expenses Ratio: The lowest Selling And Distribution Expenses Ratio of 0.7 is found in Tech Mahindra Ltd and the highest Selling and Distribution Expenses ratio of 7.9 is found in NIIT Ltd. It is inferred that the lowest Selling and Distribution Expenses Ratio which may lead to high rate of return. On the other hand the highest Selling and Distribution expenses ratio employed which may result in low Profitability of the company.

Annual Growth Rate

The Annual Growth Rate of Gross Profit Ratio has been registered from -4.28 to 22.74. Among the ten companies, 2 companies namely, Hexaware Ltd, 3i InfoTech Ltd, indicate a negative annual growth rate. The Annual Growth Rate of Net Profit Ratio has been registered from -16.44 to 27.94. Among the ten companies, 4 companies namely, Siemens Ltd, Mphasis Ltd, TCS Ltd, Wipro Ltd indicate a negative annual growth rate. Compound Annual Growth Rate of Operating Profit Ratio has been registered from -3.17 to 30.92. Among the ten companies, 2 companies namely, Siemens Ltd, TCS Ltd, indicate a negative annual growth rate. The Compound Annual Growth Rate of Return On Capital Employed has been registered from -13.50 to 13.76. Among the ten companies, 8 companies namely, 3i InfoTech Ltd, Siemens Ltd, Hexaware Ltd, Infosys Ltd, NIIT Ltd, TCS Ltd, Tech Mahindra Ltd and Wipro Ltd, indicate a negative annual growth rate.
The Annual Growth Rate Of Capital Turnover Ratio has been registered from -11.90 to 47.57. Among the ten companies, 6 companies namely, 3i InfoTech Ltd, Siemens Ltd, Infosys Ltd, TCS Ltd, NIIT Ltd, Wipro Ltd, indicate a negative annual growth rate. The Compound Annual Growth Rate of Return on Shareholder Fund has been registered from -12.34 to 37.72. Among the ten companies, 7 companies namely, 3i InfoTech Ltd, Hexaware Ltd, Infosys Ltd, NIIT Ltd, TCS Ltd, Tech Mahindra Ltd, and Wipro Ltd, indicate a negative annual growth rate. The Compound Annual Growth Rate of Owned Capital Turnover Ratio has been registered from -20.75 to 50.31. Among the ten companies, 5 companies namely, Siemens Ltd, Hexaware Ltd, Infosys Ltd, TCS Ltd, and Wipro Ltd, indicate a negative annual growth rate.

The Compound Annual Growth Rate of Expenses Ratio has been registered from -19.57 to 2.64. Among the ten companies, 6 companies namely, 3i InfoTech Ltd, Siemens Ltd, Hexaware Ltd, Mphasis Ltd, Wipro Ltd, Zensar Ltd, indicate a negative annual growth rate. The Compound Annual Growth Rate of Administration Expenses Ratio has been registered from -13.04 to 5.77. Among the ten companies, 5 companies namely, 3i InfoTech Ltd, Infosys Ltd, Mphasis Ltd, TCS Ltd, Zensar Ltd, indicate a negative annual growth rate. The Annual Growth Rate of Selling and Distribution Expenses Ratio has been registered from -21.66 to 97.70. Among the ten companies, 6 companies namely, Siemens Ltd, Hexaware Ltd, Infosys Ltd, Tech Mahindra Ltd, Wipro Ltd, Zensar Ltd indicate a negative annual growth rate.

Determinants of Profitability

It is evident from the result of determinants of profitability of 3i InfoTech Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio is the strongest determinant of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio, growth rate of sales are statistically insignificant. There is a
significant relationship between Operating Expenses to Sales Ratio and profitability that was rejected in significant level.

It is evident from the result of determinants of profitability of Hexaware Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio and other variables like Current Ratio, Growth Rate of Sales are the statistically insignificant. There is no relationship between Operating Expenses to Sales Ratio and profitability which was accepted in insignificant level.

It is evident from the result of determinants of profitability of Infosys Ltd which shows that the regression co-efficient of the Operating Expenses to Sales Ratio is the strongest determinants of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio are statistically insignificant. There is a significant relationship between Operating Expenses to Sales Ratio and profitability which was rejected in significant level.

It is evident from the result of determinants of profitability of Mphasis Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio is the strongest determinants of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio are statistically insignificant. There is a significant relationship between Operating Expenses to Sales Ratio and profitability which was rejected in significant level.

It is evident from the result of determinants of profitability of NIIT Ltd which shows that the regression co-efficient of the Operating Expenses to Sales Ratio is the strongest determinants of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio and growth rate of sales are also statistically significant at 5
percent and 1 percent level. There is a significant relationship between Operating Expenses to Sales Ratio and profitability which was rejected in significant level.

It is evident from the result of determinants of profitability of Siemens Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio and also other variables like Current Ratio, and growth rate of sales are also statistically insignificant. There is no relationship between Operating Expenses to Sales Ratio and profitability which was accepted in insignificant level.

It is evident from the result of determinants of profitability of TCS Ltd that the operating expenses to sales ratio and also other variables like Current Ratio, and growth rate of sales are also statistically insignificant. There is no relationship between Operating Expenses to Sales Ratio and profitability which was accepted in insignificant level.

It is evident from the result of determinants of profitability of Tech Mahindra Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio is the strongest determinants of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio are statistically insignificant. There is a significant relationship between Operating Expenses to Sales Ratio and profitability which was rejected in significant level.

It is evident from the result of determinants of profitability of Wipro Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio is the strongest determinants of profitability statistically significant at 5 percent and 1 percent level. The other variables like Current Ratio are statistically insignificant. There is a significant relationship between Operating Expenses to Sales Ratio and profitability was rejected in significant level.
It is evident from the result of determinants of profitability of Zensar Ltd which shows that the regression co-efficient of Operating Expenses to Sales Ratio and also other variables like Current Ratio are also statistically significant at 1 percent and 5 percent level. There is a significant relationship between Operating Expense to Sales Ratio and profitability that was rejected in significant level.
Suggestions

It is of great interest to mention here that out of working capital variables, Debtor Turnover Ratio and Cash Position Ratio alone influenced the profitability of the sample firm under study. Hence there is a need for more efficient management in the firms. Consequently it will improve the profitability.

It is seen from the analysis that the investment in current assets constitute more than one-third of total assets during the period of study. It is better to reduce the investments in current assets at least one-fourth of total assets to improve the working capital management. Consequently the profitability will improve to that extent.

As the size of firm increases the management of all resources both human and non-human resources may sometimes be difficult. In such a situation, the application of modern management techniques may help the firm to utilize the resources more effectively and economically.

This study has been constrained to sample size and the nature of the data which would have well affected the results. Further studies will aim at increasing the sample size for still better and consistent panel estimates.

To increase the working capital efficiency the companies concentrate on their performance utilization of current assets management.

Further this research concludes that there is a pressing need for further empirical studies to be undertaken on corporate financial management, in particular, their working capital practices by extending the sample size. So that an industry wise analysis can help to cover the factors that explain the better performance of some industries. This would also exist the policies makers to identify the specific problems faced by small or big firms and to find out solutions for such problems.
Conclusion

The Research Study on the title, “Working Capital Management and Profitability Analysis of Software Industry in India”, would definitely be a value addition to the existing Knowledge of Commerce and Management. It has been rightly pointed out in the second chapter, Review of Literature, the study has been mainly focused on Working Capital Management and Profitability Analysis of Selected Software Companies in India because very few studies have been done on this topic. Optimum Working Capital Management is essential in order to strike a balance between Liquidity and Profitability position of Software Companies.

Among sample companies, a few companies namely, Mphasis Ltd, Infosys Ltd, Siemens Ltd, are maintained Profitability Position in a best possible manner. Other companies like Hexaware Ltd, Tech Mahindra Ltd, NIIT Ltd, these companies maintained Liquidity and Profitability position in desired levels. Hence, it is learned from the study that ideal ratios of all kinds shall be maintained to get maximum profit.