3.1 – Introduction:

Both the terms financial performance appraisal and financial statement analysis are often interchangeable. It is actually the process of evaluating the overall financial position of an organization and the evaluation can be done by analyzing the financial statements. Hence, the financial appraisal includes the systematic assessment of financial data which is available in the financial statements (Kennedy & McMullen, 1973).

According to Foulke (1957) if a train is moving at a particular speed, it is always expected that it will move at the same speed unless an obstacle changes its speed. Similarly unless something unusual happens in an organization, it will continue to work in the same way.

The financial performance appraisal gives the facts about the, profitability, productivity, strengths, weaknesses, solvency and many other dimensions related to financial position of an organization. It is also relevant in analyzing the safety of the investments in a particular company, profit adequacy and solvency of an organization, reserves & surpluses in a company. On the basis of past financial performance the future of the organization can also be predicted with the same assumption that it will grow in the same way (Foulke, 1957).

Financial Performance Appraisal is generally related with two important aspects. First is about assessing the performance of an organization and second is about the remedial measures that should be taken to improve the future performance, if it is needed. Hence it critically compares and evaluates the profitability, productivity and other dimensions of financial performance. It analyzes the financial statements and business data to get the better understanding of financial performance (Metcalf & Titard, 1976).

Financial statement provides reliable and useful information regarding financial aspects of the organization. It consists of two basic statements called income statement (profit & loss account) and financial position statement (balance sheet). It is a blend of facts, accounting conventions and financial terminologies hence to understand the financial statements it is mandatory to have a good understanding of accounting and finance.
Accounting is a science as well as an art. It records and classifies the business transactions in a systematic way. It also summarize and interprets all the financial information to the required persons (Smith & Ashburn, 1960).

3.2 – Process of financial performance appraisal

The financial performance appraisal is actually the last step of the process which consists of four major steps. First three steps are purely related to the work of an accountant while the last step is related to the analysis. All the steps are as follows:

- Measure the valuation of amount involved in each transaction.
- Record the data in the books of accounts.
- Prepare the financial statements.
- Analyze the financial statements.

The first step is analyzing the value involved in each transaction and determines the accounts to be debited and credited. The second step involves the recording of financial data in the books of accounts and preparation of a trial balance. The third step is about making the financial statements which includes profit & loss account as well as the balance sheet. The fourth and last step involves the analysis and interpretation of these financial statements, to get the information about the financial performance. The process of analyzing financial statements is to extract the information from financial and operating data by the help of ratios, trends percentages etc.

Sometimes the financial data don’t represent homogenous data. It is actually the result of numerous transactions which have taken place from the beginning of the ledger till the last accounting year. In these cases it is very important to define the time limit. Without the time element the data would be useless for the managers (Metcalf & Titard, 1976).

Only the analysis of these financial statements would not lead to a concrete position about the financial status of the organization. It is the comparison which provides the exact position of the financial scenario. For instance, to gauge the debt paying capacity of a company, it is always necessary to compare the amount of current
liabilities with the current assets. If the amount of current assets is higher in comparison with current liabilities, it leads to a satisfactory debt paying capacity of the business and vice versa.

In addition to the comparison, a trend study should also be conducted. It is carried out by analyzing the history of important factors in financial statements. It provides a detailed description about the financial position of an organization after comparing it with different time periods. It can also be called as the trend analysis which is based on time factor (Myer, 1959).

3.3 – Historical background

From the beginning of accounting, it became mandatory to summarize the accounts. The summaries of accounts had also been termed as “inventory”. For small scale enterprises the summaries were enough to show the financial positions to the owners but for bigger enterprises, it became necessary to distribute the accounting summaries among the shareholders. It is how the present balance sheet and profit & loss accounts came into existence (Kennedy & McMullen, 1973).

Initially the financial statements meant to be used by the accountants only. By the end of nineteenth century the bankers had started insisting their clients to submit the financial statements, so that it would be easier for the banks to make decisions regarding the credit worthiness of their clients. In 1895, New York State Banker’s Association had decided to analyze the financial statement of the loan applicants before taking any decision regarding it. In 1900, the same Association had started the credit application form with a special section for balance sheet. The credit managers had been supposed to analyze the financial statements in all the dimensions of strengths and weaknesses (Reihl, 1909).

The modern analytical methods came into existence with the development of certain ratios. Earlier the pattern of analyzing the financial data was not being followed by all the bankers. In 1910, the special committee appointed by the Federal Reserve Board made it mandatory. In 1914, the Federal Reserve System had been established by the Federal Reserve act.
3.4 – Methods of analyzing the financial statements

- Horizontal Analysis: It is the analysis of a particular element from the financial statement, related to any two or more financial years.

- Vertical Analysis: It is the analysis of more than one element from the financial statement, related to any one financial year.

- Static & Dynamic Analysis: Static analysis examines the relationship between various elements belong to one particular statement where as the dynamic analysis examines the movements of these elements. The former is vertical analysis whereas the later is the horizontal analysis.

- Internal & External Analysis: The internal analysis is done by the management of the company itself for taking internal decisions whereas the external analysis is done by some outsider such as investors, government, customers etc.

3.5 – Techniques of analyzing the financial statements

3.5.1 - Trend Analysis:

In 1925, Stephen Gilman presented the concept of trend analysis. It was dividing the magnitudes of significant items or groups on the basis of time element. Then check the variations in the performance on the basis of base year (Meyer, 1980).

3.5.2 - Common Size Statement Analysis:

It includes common size income statements and common size balance sheet. It is based on the comparison of all the items with one common item. For instance the sales may be taken as 1 and compare all other items of the financial statement with it. Both trend analysis and common size statements will help in inter firm comparison.

3.5.3 - Fund flow statements:

It is all about the information regarding the sources of funds and allocations of funds for a certain accounting period. It helps in understanding the flow of funds along with the changes in assets and liabilities (Smith & Ashburn, 1960).
Sometimes funds are considered as cash only which is not correct because there are many transactions which are not related to cash but are represented in the flow of fund e.g. purchase of any asset on credit. Funds are also considered as the difference between current assets and current liabilities. It is actually the change in the amount of fund prior to the transactions.

3.5.4 - Cash flow statements:

It is popularly known as “where got, where gone” statement. It shows all the transactions related to the incoming and outgoing of cash for a particular period of time. It includes all the cash transactions related to operating, investing and financing activities. While there are some sources which provide information for preparing the cash flow statement like comparative balance sheets or income statements etc (Gupta & Sharma, 2011).

3.5.5 - Cost volume profit analysis:

It plays a very important role in profit planning. It examines the change in profit due to change in the volume of output. It focuses on determining the break-even point of cost and volume of goods which is very helpful for managers in taking many decisions. It helps the management in deciding various levels of manufacturing activity with different prices to maintain break even. It quantifies the different components of cost in various circumstances to make future plans regarding the functioning of business (Investopedia, 2007).

3.5.6 - Index Analysis:

It expresses the income statement and balance sheet in the form of an index, which is related to the base year. The values in base year are supposed to be 100 and it compares the movement of activities over a period of time.

3.5.7 - Leverage Analysis:

It consists of three types of leverages. The financial leverage shows the dominance of one financial variable over some other financial variables. Whereas the operating leverage shows the changes in profit due to change in sales. Finally the total leverage shows the combined effect of both the leverages. It helps in understanding the cost behavior and strategic decisions.
3.5.8 - Balanced Scorecard:

It is a blend of both financial measures as well as non financial measures. Financial measures are used by the managers to gauge the overall performance of the firm whereas the non financial measures are generally used by operating managers to control short term operations. Nowadays, the balanced scorecard is used to solve the most critical issues of management and it is a comprehensive analytical tool of performance appraisal (BSC, 2017).

3.5.9 - Ratio Analysis:

In 1919, Alexander Wall had presented the concept of ratio analysis and criticized the bankers who were taking decisions regarding credit approval on the basis of current ratios only. He stated that to know the financial statements completely, it is mandatory to consider other ratios also. Wall became the pioneer of ratio analysis and presented his methods in many books (Dunning, 1928).

A ratio is an arithmetical relationship between two financial figures. It shows the relationship between various items in a financial statement. It provides the information regarding profitability, liquidity, productivity, solvency and turnover of the company.

The ratio measurements used in analyzing the financial statements are divided into two categories. The first one is static analysis which measures the financial position at a particular period of time while the second one is dynamic analysis which measures the change in financial position with reference to the time factor. Even in this study the financial performance has been measured by the help of ratios.

3.6 – Benefits of Ratio Analysis

- It is very effective in decision making process.
- It analyses the financial statements.
- It plays a pivotal role in future planning.
- It measures the profitability, liquidity, solvency and leverages.
- It enables the intra firm and inter firm comparisons.
• It does the SWOT analysis of a company.

• It is very useful for shareholders, investors and employees.

3.7 – Types of Ratios

3.7.1 - Liquidity Ratios:

It shows the quickness of an asset to get converted into cash. Liquidity Ratios are used to measure the short-term solvency of a business firm. They show the ability of the company to how quickly it converts its assets into cash and pay-off its short-term debts. The short term obligations are met by releasing amounts from current, floating or circulating assets. The sufficiency or insufficiency of current assets should be assessed by comparing them with short term liabilities. Liquidity refers to the ability of a concern to meet its current obligations as and when these become due. Generally the ideal liquidity ratio is 1:1 (Khan & Jain, 2016).

1. Net working capital ratio $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

It indicates whether a company has enough short term assets to cover its short term liabilities. If the ratio is below 1 it shows a negative working capital while above 2 means that the company have surplus investments.

2. Acid-test Ratio / Quick Ratio / Liquid Ratio $\frac{\text{Quick Assets or Liquid Assets}}{\text{Current Liabilities}}$

Quick Assets = Cash in hand + Cash at Bank + Short term marketable securities + Debtors/Receivables – Prepaid expenses – Inventory.

It is about the ability of a company to meet its short term liabilities with most liquid assets. The ratio is directly proportional to the company’s liquidity position. The higher the quick ratio leads to the better liquid position of a company.

3. Super Quick / Cash Ratio $\frac{\text{Cash + Marketable Securities}}{\text{Current Liabilities}}$

It is the ability of a company to repay its short term debts. It is purely about the cash which makes it a bit conservative in comparison to other liquidity ratios. Actually it excludes all the other assets except cash while other liquidity ratios include receivables also.
3.7.2 - Leverage Ratios:

A company always relies on the blend of funds which come from investors and creditors. They provide the relationship between borrowed funds and owner’s capital. It is an instrument which confirms the proportion of debt in the capital (Khan & Jain, 2016).

1. **Debt Equity Ratio** = \( \frac{\text{Long term debt}}{\text{Share Holder's Equity}} \)

   Share holder’s Equity = Equity & Preference share capital + Past accumulated profits + Discount on issue of share.

   It shows the percentage of financing in a company which comes from creditors and investors. Higher debt to equity ratio indicates that major portion of financing is being covered by the creditors and a minor share belongs to the investors. If the debt equity ratio is 1 it means that the investors and creditors have equal stake in the company.

2. **Debt to total Capital Ratio** = \( \frac{\text{Total Debt}}{\text{Total Assets}} \)

   The debt to capital ratio is the ratio of company’s debt and total assets. The debts of a company include both short term as well as long term liabilities. It gives an analysis about the financial structure of a company. The debt to capital ratio is directly proportional to the risk involved in the investments.

3.7.3 - Coverage Ratios:

It measures the ability of a firm to meet its financial obligations. They help in assessing the changes in the financial position of a company (Khan & Jain, 2016).

1. **Interest Coverage Ratio** = \( \frac{\text{Operating Profits}}{\text{Interest}} \)

   It measures the ability of a company to pay the interest expense on its debt. It is also known as times interest earned ratio and a ratio of 2 or higher is generally considered satisfactory.

2. **Debt Service Coverage Ratio** = \( \frac{\text{Net Operating Income}}{\text{Total Debt Service}} \)
The ratio measures the ability of a company to pay its entire debt service. It includes all the principal and interest payments due to be made at any point of time. Ratios of 1 or above shows that the company is generating enough earnings are being generated by a company to meet the debt obligation.

3.7.4 - Profitability Ratios:

Profitability ratios are all about the earning capacity of a company during a specific period of time. The profitability position of selected IT companies have been analyzed with the help of return on assets (ROA) and return on equity (ROE) ratios from 2006-07 to 2015-16. It measures the ability of a firm to generate earnings (Khan & Jain, 2016).

1. Gross Profit Ratio \[ \text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \]

   It gauges the efficiency of a company in using its materials and labor for the productions and sales in a profitable manner. It is very important for the management and investors because it shows the profitability of core business activities without considering the indirect costs. It shows the profitability of a particular product also.

2. Operating Profit Ratio \[ \text{Operating Profit Ratio} = \frac{\text{Operating Profit}}{\text{Net Sales}} \times 100 \]

   It actually measures the percentage of total revenues which are being made up by operating income. It also indicates the proportion of revenues which are available to meet the non-operating costs. It is important for the creditors as well as stakeholders because it shows the strength and profitability of the operations of a company. A higher operating profit ratio is always favorable because it indicates that the company is making enough money from their operations to pay off the variable and fixed costs. Higher operating ratio signifies the sustainable operating activities.

3. Profit Volume Ratio \[ \text{Profit Volume Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 \]

   It expresses the relationship of contribution to sales. It shows the changes in the profit due to the changes in volume. It is also very useful for calculating the break even point.
3.7.5 - Capital Structure Ratios:

It shows how the firm finances its overall operations and growth by using various sources of funds. Debt comes in the form of bond issues while equity means shares (Khan & Jain, 2016).

1. Debt Equity Ratio \[ \frac{\text{Debt}}{\text{Equity}} \]

It demarcates the portion of percentage which comes from creditors and which comes from investors. A higher debt to equity ratio indicates that more creditor financing is used than investor financing while a lower ratio shows more investor financing. A lower debt to equity ratio indicates a more stable capital structure while a higher debt to equity ratio is considered risky.

2. Debt to Capital Ratio \[ \frac{\text{Debt}}{\text{Shareholder's Equity} + \text{Debt}} \]

It is a measure of the financial leverage of a company. It includes both short term & long term liabilities along with the total capital.

3. Shareholder Equity Ratio \[ \frac{\text{Equity}}{\text{Total Assets}} \]

It determines the share which would be received by the stakeholders in case of liquidation. The ratio is directly proportional to the claim of shareholders. If the ratio is higher the shareholders will have a larger portion to claim.

3.7.6 - Turnover Ratios:

Turnover ratios are based on the relationship between the levels of activity, represented by the sales or cost of goods sold and the levels of various assets. It measures how efficiently the assets are employed by the firm (Khan & Jain, 2016).

1. Inventory turnover Ratio: \[ \frac{\text{Cost of goods sold}}{\text{Average Inventory}} \]

It indicates the pace of sales of inventory. It shows the number of sales and replacement over a period of time. High ratio always leads to better liquidity. It also measures the performance by measuring the speed of sales of inventory.
2. Debtor’s turnover ratios: \[
\text{Debtor’s turnover ratios: } = \frac{\text{Net Credit Sales}}{\text{Average Debtors}}
\]

It is all about the efficiency of a firm in using its assets. It measures how rapidly receivables are collected. High ratio leads to shorter time lag between credit sales and cash collection.

3. Creditor’s turnover ratios: \[
\text{Creditor’s turnover ratios: } = \frac{\text{Net Credit Purchase}}{\text{Average Creditors}}
\]

It is the extent to which the company pays off its suppliers. Low ratio reflects liberal credit terms.

3.7.7 - Overall Ratios: (Khan & Jain, 2016).

1. Return on Investment \[
\text{Return on Investment } = \frac{\text{Earnings before Interest \& Tax}}{\text{Equity + Debt}}
\]

It calculates the profits of an investment as a percentage of the original costs. It measures the profits on a particular investment. It is very important for the investors because they measure the performance of different investments and compare these performances of taking any decision regarding investment. It is useful for the managers as well because they can compare the performance with the capital equipment purchase. High ratios are always favorable while a negative return on investment means indicates that the revenues are not sufficient to cover the total costs.

2. Return on Equity \[
\text{Return on Equity } = \frac{\text{Earnings before Tax}}{\text{Equity}}
\]

It is the ability of a firm to generate profits from its shareholders investments in the company. It is very important for the investors because they are keen to know the efficiency of a company in using their money. It also shows the effectiveness of the management in using equity financing to fund the operations. Higher ratios are always better than lower ratios and it also provides a detailed track about the progress of the company.

3. Return on Assets \[
\text{Return on Assets } = \frac{\text{Earnings before Tax}}{\text{Average Total Assets}}
\]

It is all about the profitability of the assets of a company. It shows the efficiency of a company in managing the assets to produce profits during a certain period of time. It
shows both investors as well as managers the effectiveness of a company in converting the money used to purchase assets into profit. Higher ratios are always preferable because they show that the assets are being managed more effectively and more profits would be generated.

3.8 – Trend of financial performance of Indian IT Industry

Table 3.1: Descriptive Analysis of financial performance of Indian IT Industry

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>No. of Observation</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Maximum</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitability Ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>561</td>
<td>-3.5164</td>
<td>1.2840</td>
<td>0.104805</td>
<td>0.2140106</td>
</tr>
<tr>
<td>ROE</td>
<td>561</td>
<td>-27.7770</td>
<td>4.2544</td>
<td>0.117549</td>
<td>1.2343705</td>
</tr>
<tr>
<td><strong>Productivity Ratio</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATO</td>
<td>561</td>
<td>-26.2822</td>
<td>92.9555</td>
<td>0.919245</td>
<td>4.0995239</td>
</tr>
<tr>
<td><strong>Market Valuation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MB</td>
<td>561</td>
<td>-118.0024</td>
<td>56.5700</td>
<td>3.255490</td>
<td>9.5322656</td>
</tr>
</tbody>
</table>

Source: Compiled by the author on the basis of financial data.

Table 3.1 shows the descriptive statistics for the financial performance by the help of different ratios. Return on assets is the ratio of average total assets and profit after tax. It has an average of -3.5164 while its standard deviation is 1.2840. It indicates an average return of -3.5% or loss of 3.5% on an average basis on total assets employed in the firm. The average is a clear indication of poor performance during the study. However the standard deviation of ROA during the study period indicates an insignificant level of dispersion in the given set of data from its mean value. It has a low variation and it falls from 0.105 to 0.214.

Return on equity is the ratio of average net worth and profit after tax. It has an average of -27.7770 while its standard deviation is 4.2544. It indicates an average net worth of -28% or loss of 28%. It is a clear indication of poor performance during the study. However the standard deviation of ROA during the study period indicates an
Financial Performance Appraisal

An insignificant level of dispersion in the given set of data from its mean value. It has a slightly high variation and it falls from .118 to 1.234.

Asset Turnover Ratio is the ratio of average total assets and net sales. It has an average of -26.2822 while its standard deviation is 92.9555. It indicates the productivity of -26%. It is a clear indication of poor performance during the study. However the standard deviation of ROA during the study period indicates a significant level of dispersion in the given set of data from its mean value. It has a high variation and it falls from .919 to 4.099.

Market Valuation is the ratio of book value and market value. It has an average of -118.0024 while its standard deviation is 56.57. It indicates the market valuation is -118. It is a clear indication that there must be something which causes these changes. However the standard deviation of ROA during the study period indicates a significant level of dispersion in the given set of data from its mean value. It has a high variation and it falls from 3.255 to 9.532.

Figure 3.1: Return on Assets

![ROA](https://via.placeholder.com/150)

Source: Compiled by the author

Figure 3.1 shows the profitability of Indian IT industry in the form of return on assets of Indian IT Industry from 2006 to 2016. It is clearly visible that there is an inconsistency in its trends. It suddenly increased in 2007 from 0.04 – 0.16. The period
from 1995-2007 has been considered as the golden era of Indian IT industry and the revenue generation had been grown from 1.2% to 5.8%. The economic slowdown has been responsible for the following fluctuations in Indian IT sector which had started from 2008. The return on assets started diminishing till 2011 and became 0.07. ROA again increased in 2012 and became 0.12 but decreased in 2013 and became 0.09. In 2014 it became 0.1 and keeps maintaining its position till 2016. It has started increasing again because the financial performance of Indian IT sector is expected to reach a remarkable point by 2017.

**Figure 3.2: Return on Equity**

![ROE Chart](image)

*Source: Compiled by the author*

Figure 3.2 again shows the profitability of Indian IT industry in the form of return on equity of Indian IT Industry from 2006 to 2016. It is clearly visible that there is an inconsistency in its trends. It suddenly increased in 2007 from 0.1 – 0.3. The period from 1995-2007 has been considered as the golden era of Indian IT industry and the revenue generation had been grown from 1.2% to 5.8%. The economic slowdown has been responsible for the following fluctuations in Indian IT sector which had started from 2008. Afterwards it started diminishing till 2011 and became 0.07. ROE again increased in 2012 and became 0.18 but again started diminishing and became -0.4 in 2015. This unusual fall in 2015 is due to the fluctuations in the stock market which are generally caused by rumors or news. In 2016 it increased and became slightly
more than 0.2. It has started increasing again because the financial performance of Indian IT sector is expected to reach a remarkable point by 2017.

**Figure 3.3: Assets Turn Over Ratio**

![Bar chart showing assets turnover ratio from 2006 to 2016]

*Source: Compiled by the author*

Figure 3.3 shows the productivity of Indian IT industry in the form of assets turnover ratio of Indian IT Industry from 2006 to 2016. It is clearly visible that there is a consistency in its trends. In 2006 it was almost 2 but in 2007 it started decreasing and became 1. The period from 1995-2007 has been considered as the golden era of Indian IT industry and the revenue generation had been grown from 1.2% to 5.8%. The economic slowdown has been responsible for the following fluctuations in Indian IT sector which had started from 2008. It was diminishing constantly at a very slow pace till 2011. Afterwards it started increasing also but at the same pace. By and large it can be said that all the fluctuations in its trend are very minor and doesn’t make any remarkable difference in the productivity. ATO has started increasing again because the financial performance of Indian IT sector is expected to reach a remarkable point by 2017.
Figure 3.4 shows the market valuation of Indian IT industry in the form of market to book ratio of Indian IT Industry from 2006 to 2016. It is clearly visible that there is an inconsistency in its trends. It suddenly decreased in 2008 from 3.6 – 1.5. The period from 1995-2007 has been considered as the golden era of Indian IT industry and the revenue generation had been grown from 1.2% to 5.8%. The economic slowdown has been responsible for the following fluctuations in Indian IT sector which had started from 2008. MB decreased further in 2009 and became 1. In 2010 it increased up to 2.8 and kept increasing till 2016. The market value of Indian IT sector has started increasing again because it is expected to reach a remarkable point by 2017.

3.9 – Present scenario

It is absolutely true that traditionally the business performance was being measured by the help of physical capital while in modern days it has been shifted to knowledge. Earlier the production was the dominant activity and revenue used to be the most important criteria for a company’s size while labor and material costs were also highly significant. Now the scenario has changed completely and the significance of all production costs is marginal, all those resources which were being considered very significant at some point of time have now become less important. The main
Financial Performance Appraisal

challenge for a firm is to develop a completely different method for evaluating the value which has been added in an organization and not confined to cost control only (Pulic, 2000).

Basically the introductions of knowledge in product, labor and capital structure are those essential elements which are responsible for the difference in business activity. In contrast to earlier situations where the quantity used to be the most dominating factor, in current scenario the quality has become most important factor which also causes a fall in prices with increased information content. The introduction of knowledge in products, leads to change in the position of labor also. It is completely different from earlier times where a given amount of routine work produced more or less the same quantities of a product, now the same quantity of labor produce completely different output.

It is also correct that the companies have moved away from the industrial age to the information era but they are still trying to carve a niche for measuring the impact of their intangible assets in the financial performance. The financial statements cover only the physical assets of the companies; they don’t cover the intangible assets as it is very difficult to cover that information. This problem leads to the increasing trench between the market value and book value of the organizations. Some researchers argue that this gap is solely due to the non disclosure of intangible assets in financial accounts of the companies, while they are constantly affecting the financial performance of the companies (Gu & Lev, 2001).

In the present situation the knowledge driven companies must have to be more careful about their intellectual capital as compared to their physical capital. The analysis of financial performance which has been using as an acceptable measure to gauge the financial conditions of a firm for a certain period of time also get affected by the intellectual capital.

Even in the present study the Indian IT industry has been taken just because it is one of the most prominent knowledge driven sectors in India. The IT sector is solely dependent on its intangible assets which are not disclosed in its financial statements. It is very important to gauge the impact of intangible assets or intellectual capital on the
financial performance of knowledge driven companies. Actually without having proper information about the intellectual capital, the financial performance cannot be measured properly as it is always getting affected by the intangible assets.

The present study is a humble attempt to measure the financial performance of Indian IT sector and gauge the impact of intellectual capital on the financial performance of Indian IT sector. It is also an attempt to clarify the role of intangible assets in affecting the financial performance of Indian IT sector.

Till here every required aspect of the financial performance and current scenario of Indian IT industry has been discussed. Before analyzing the financial performance and gauging the impact of intellectual capital on it. It is very important to have a brief overview of the intellectual capital because it is quite difficult to go to the next level without understanding the concept of intellectual capital and its importance in the knowledge driven sector.

3.10 – Understanding Intellectual Capital or Intangible Assets

The term “Intellectual Capital” had been coined by John Kenneth Galbraith. It has been defined in many ways, Tom Stewart said that “it is something which can not be touched but which makes you rich”. According to Ted Lumley “it is the use of knowledge to increase economic order in the business process”. Gordon Petrash said “knowledge with potential for value”. Although all these authors have defined it in different ways, they agreed that intellectual capital is the combination of understanding, knowledge & expertise which can be used by the organization for some productive purposes. By and large it can be said that, intellectual capital is the understanding & traits that can be transformed into some value (Edvinsson & Sullivan, 1996).

Nowadays “intellectual capital” is a popular term for knowledge driven companies or for those firms which acquire profit from innovation and knowledge-intensive services. Knowledge companies are those companies in which understanding and traits are being used to get superior business position. These firms obtain the profit from the commercialization of knowledge which has been generated by their workers. In terms of product based industries computer, software and hardware producing companies are included while consultancies, financial services providers, law firms,
outsourcing industry are a part of service based industry. Generally a dissimilarity between the book values and market values is being faced by the knowledge intensive firms. The gap has been created by the unaccounted or intangible assets which are not recorded in balance sheets.

As the knowledge companies have different business models, they emphasize on various kinds of capital. The intellectual capital and structural capital are the most prominent type of capitals. Both of these have a significant dependence on human resource which is the fundamental element in the revenue generation. In case of knowledge companies, most valuable and leverage assets are being provided by the structural capital (Edvinsson & Sullivan, 1996).

It is necessary to understand “knowledge” in business context for understanding the concept of intellectual capital. Business knowledge generally has two kinds: codified and tacit. Knowledge which cannot be expressed easily & implanted in ways of doing things. It is difficult to copy or transfer is known as tacit knowledge. On the other hand knowledge which is written and easy to transfer is called codified knowledge. The value of knowledge doesn’t depend on its kind, it is largely realized through its application (Edvinsson & Sullivan, 1996).

**Table 3.2: Definition of Knowledge**

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Tacit</th>
<th>Codified</th>
</tr>
</thead>
<tbody>
<tr>
<td>What it is?</td>
<td>Knowledge which cannot be transferred and develop by doing things.</td>
<td>Knowledge which is easily accessible and understandable.</td>
</tr>
<tr>
<td>Who owns it?</td>
<td>Human resource/employees who develop a particular way.</td>
<td>Owners in the form of patents and copyrights</td>
</tr>
<tr>
<td>Example</td>
<td>Work culture, experience</td>
<td>Software, blueprints, computer program</td>
</tr>
</tbody>
</table>

*Source: Compiled by the author*

The concept of intellectual capital engulf more “intellectual action” as compared to “intellect as pure intellect”. For managers intellectual capital is a blend of two major components: human assets and structural capital (including intellectual assets). Human assets are those which can not be swaped and owned by shareholders whereas
intellectual assets are absolutely exchangable and can be owned by shareholders also. It is one of the major tasks for managers to transform the human assets into intellectual assets efficiently.

Actually it is the conversion of knowledge into a tangible form and once intellectual asset receives legal protection it becomes intellectual property. Generally the firms use their intellectual assets internally are not legally protected; it includes software, procedure, strategies etc.

The entire foundation which has been developed by a company for the commercialization of their human resources is known as structural capital. It can be said that structural capital is that part of the company which remains with the firm in non working days.

Importance of structural capital depends on the nature of the firms, it is more relevant in knowledge industry as compared to others. Its major portion is either in tangible form or intangible form, it also depends upon the nature of the firm and industry. In a law firm the major portion will be in tangible form whereas in software developing firms the major portion will be in intangible form.

Intellectual assets and structural capital are not different form each other, if a firm produces something with the help of human resources that is the intellectual assets. But if the company reinvests those intellectual assets or arrange those resources from others they become structural capital. For example a software developing firm develops software “A” with the help of programmers and developers (human capital), that software “A” is the intellectual asset and those computers, plans, strategies which are being used to develop that software “A” are termed as structural capital. But if that company reuse its own developed software “A” in developing new software “B” than in this case software “A” becomes structural capital and software “B” is intellectual asset (Edvinsson & Sullivan, 1996).

Actually structural capital assets of the firm are also know as complementary business assets, which are being used for value creation. If the complementary business assets are widely available and can be bought in an open market they are called as generic complementary assets. On the other hand if they require some manufacturing exercise they are called specific complementary assets.
### 3.11 - Various definitions of Intellectual Capital

#### Table 3.3: Definitions

<table>
<thead>
<tr>
<th>Author</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouritsen, Bukh, Larsen, &amp; Johansen (2002)</td>
<td>The intellectual capital is not a traditional term of accounting. It can be defined as an effect, strategy or a mathematical formula.</td>
</tr>
<tr>
<td>Stewart (1997).</td>
<td>Intellectual components – Understanding, traits, expertise, intellectual property – that can be put to create wealth.</td>
</tr>
<tr>
<td>Edvinsson &amp; Malone (1997).</td>
<td>Knowledge that can be converted into value.</td>
</tr>
<tr>
<td>Bontis (1999)</td>
<td>IC “is quite simple the collection of intangible resources and their flows”, intangible resource is “any factor that contributes to the value generating processes of the company”.</td>
</tr>
<tr>
<td>Rastogi (2003)</td>
<td>IC may properly be viewed as the holistic or meta-level capabilities of an enterprise to co-ordinate, orchestrate, and deploy its knowledge resources towards creating value in pursuit of its future vision.”</td>
</tr>
<tr>
<td>Itami (1991)</td>
<td>IC includes a wide range of activities such as technology, trust, faithfulness, working culture and characteristics of employees.</td>
</tr>
<tr>
<td>Hall (1992)</td>
<td>IC is a value driver that transforms productive resources into value added assets.”</td>
</tr>
</tbody>
</table>

*Source: Compiled by the author*

Brooking (1996) identifies intellectual capital as the creation of value by combining the “market assets”, “human-centered assets”, “intellectual property assets”, “infrastructure assets” with other productive resources of an organization.
Edvinsson & Malone (1997) argued that the intellectual capital is not an object, in fact it is a debt which is being borrowed from the customers and employees.

Boudreau & Ramstad (1996) said the intellectual capital is closely related to human resource management which is always required for the expansion and functioning of a company.

Lev (2000) said that an intangible asset does not have any physical existence and it is a claim to future benefits. He stated that Intangible Assets (IA) consist of innovation, traits, experience and understanding etc. It can be further classified into three subcategories: IP (intellectual property), separately identifiable IA’s, and non-separately identifiable IA’s.

Daum (2002) indicates that intangibles are characterized by a set of attributes, and they can bring in economic benefits rather quickly, and they often show network effects.

Rastogi (2003) said that IC is the blend of combine efforts of the human capital and structural capital. Hence, views of Daum, 2002 and Rastogi, 2003 have similarities in two senses, firstly, intellectual capital is the result of network effect and secondly it does not exist to its own.

Mouritsen (2004) indicates that IC mobilizes “things” such as workers, consumers and understanding. He added, “IC cannot stand by itself as it merely provides a mechanism that allows the various assets to be bonded together in the productive process of the firm”.

From the accounting point of view International Accounting Standard Board (IASB, 2004) defines intangibles in revised IAS 38. It defines an identifiable Intangible Assets as a “non-monetary asset without physical substance held for use in the production or supply of goods or services, for rental to others, or for administrative purposes”.

Now it is quite clear that intellectual capital is the knowledge and traits that can be converted into value and that bring future benefits to the organization. It also appears that:
(1) Intellectual capital has no separate identity and it cannot be identified or valued separately from other assets; and

(2) It is the outcome of the collaborative effort of various intangible, human and structural resources.

For the purpose of this study intellectual capital is considered as intangible and non-monetary assets, having no physical existence and generates future benefits to the organization.

### 3.12 – Categorization of Intellectual Capital

Intellectual capital has been categorized or consisted of different components which have been described by different authors in different ways. Some of these compositions are as follows:

**Table 3.4: Categorization**

<table>
<thead>
<tr>
<th>Author(s) with year</th>
<th>Term</th>
<th>Categorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brooking (1996)</td>
<td>Intellectual Capital</td>
<td>Market assets, human centered assets, intellectual property and infrastructure assets</td>
</tr>
<tr>
<td>Edvinsson &amp; Malone (1997)</td>
<td>Intellectual Capital</td>
<td>Human capital and structural capital</td>
</tr>
<tr>
<td>Roos &amp; Roos (1997)</td>
<td>Intellectual Resources</td>
<td>Human capital and structural capital</td>
</tr>
<tr>
<td>Sveiby (1997)</td>
<td>Immaterial values</td>
<td>Internal structure, External structure and personnel competence</td>
</tr>
<tr>
<td>Stewart (1997)</td>
<td>Intellectual Capital</td>
<td>Human capital and structural capital and customer capital</td>
</tr>
<tr>
<td>Bontis (1999)</td>
<td>Intangible resources</td>
<td>Human capital and structural capital</td>
</tr>
<tr>
<td>Canibano et al. (2000)</td>
<td>Intangibles</td>
<td>Human capital and structural capital and relational capital</td>
</tr>
<tr>
<td>Sullivan &amp; Sullivan (2000)</td>
<td>Intellectual Capital</td>
<td>Human capital, Intellectual assets that include intellectual property</td>
</tr>
</tbody>
</table>
Gu & Lev (2001) | Intangible assets | Advertising, IT, capital expenditures and human resource practices  
Stovel & Bontis (2002) | Intangible capital | Human capital and structural capital and relational capital  
Ordóñez de Pablos (2003) | Intellectual Capital | Human capital and structural capital and relational capital

*Source: Compiled by the author*

**Table 3.5: Classification of Intellectual Capital, IFAC (1998)**

<table>
<thead>
<tr>
<th>Human Capital</th>
<th>Relational (customer) Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know-how</td>
<td>Brands</td>
</tr>
<tr>
<td>Education</td>
<td>Customers</td>
</tr>
<tr>
<td>Vocational Qualification</td>
<td>Customer Loyalty</td>
</tr>
<tr>
<td>Work-Related Knowledge</td>
<td>Company Names</td>
</tr>
<tr>
<td>Occupational Assessments</td>
<td>Backlog Orders</td>
</tr>
<tr>
<td>psychometric Assessments</td>
<td>Distribution Channels</td>
</tr>
<tr>
<td>Work-Related Competencies</td>
<td>Business Collaborations</td>
</tr>
<tr>
<td>Innovativeness, Proactive and Reactive Abilities, Changeability</td>
<td>Licensing Agreements</td>
</tr>
<tr>
<td></td>
<td>Favourable Contracts</td>
</tr>
<tr>
<td></td>
<td>Franchising Agreements</td>
</tr>
</tbody>
</table>

**Organizational (structural) capital**

<table>
<thead>
<tr>
<th>Infrastructure assets</th>
<th>Intellectual Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Philosophy</td>
<td>Patents</td>
</tr>
<tr>
<td>Corporate Culture</td>
<td>Copyrights</td>
</tr>
<tr>
<td>Management Processes</td>
<td>Design Rights</td>
</tr>
<tr>
<td>Information Systems</td>
<td>Trade Secrets</td>
</tr>
<tr>
<td>Networking Systems</td>
<td>Trademarks</td>
</tr>
<tr>
<td>Financial Relations</td>
<td>Service Marks</td>
</tr>
</tbody>
</table>

*Source: Compiled by the author*
3.13 - Components of Intellectual Capital

Intellectual Capital is the main asset for a knowledge driven company as it promotes competitive advantages which form the basis of value creation (Bontis & Nikitopoulos, 2001; Edvinsson & Malone, 1997). It is not related to the knowledge only, in fact it consists of human, structural (organizational & process) and relational capital.

3.13.1 - Human capital is defined as the combination of knowledge, understanding, traits, exposure and potential of employees (Edvinsson & Malone, 1997). Roos, Bainbridge, & Jacobsen (2001) said that the human capital is actually the value which is being obtained from the knowledge, expertise, way of thinking of the employees.

Several studies (Appuhami, 2007; Ashton, 2005; Bontis, 1999; Bozbura, 2004) consider human capital as the blend of adroitness, comprehension and professionalism incorporated in the employees for producing economic value. The roots of human capital can be traced in the Smith’s economic theories, where he defined contribution of human capital is important to the organizational performance and economic growth of the country as well. Ashton (2005) also supported the argument by suggesting that the human capital consists of virtuosity, apprehension and aptitude of employees. Bozbura (2004) said that the human capital can be recognized as an accumulation of all the traits and characteristics of the employees.

Human capital encompasses the mastery and productivity that employees keep with them while they are not at their jobs. It consists understanding, artistry, expertise and capabilities of workers. Roos & Roos (1997) stated that the intellectual capital can be generated by the comprehension, understanding and traits of the workers.

Elements of human capital are as follows:

- Understanding
- Expertise
- Innovation & Creativity
- Practical Exposure
• Level of Satisfaction

• Grasping Power

3.13.2 - Organizational Capital or Structural Capital encompasses of all kinds of “knowledge deposits”, which includes working environment, procedures, digital resources (Boisot, 2002; Edvinsson & Sullivan, 1996; Ordóñez de Pablos, 2004; Walsh & Ungson, 1991). Structural capital consists of enabling structures that allow the organization to exploit Intellectual Capital (Muhammad & Ismail, 2009). These structures includes both patents, trademarks, databases, copyrights, corporate culture, skills and confidence (Muhammad & Ismail, 2009; Seetharaman, Low, & Saravanan, 2004). Ashton (2005) said that the structural capital is a blend of procedures, techniques, database and organization structures.

The organizational/structural capital includes working culture, procedures, relations and intellectual property (Guthrie & Petty, 2000; Lee & Guthrie, 2010; Sveiby, 1997). Earlier the structural capital used to be a combination of the way of doing things and the order in which the things should be done (Carson, Ranzijn, Winefield, & Marsden, 2004). Moon & Kym (2006) had defined the structural capital in terms of working environment, techniques, procedures and intellectual property.

The basic distinction between the human capital and structural capital is, whatsoever left in the company when workers are not there is structural capital and the capital which employees take along with them is human capital (Bontis, Keow, & Richardson, 2000; Bontis & Nikitopoulos, 2001; Curado, 2008; Roos, Roos, Dragonetti, & Edvinsson, 1998; Stewart, 1997). Although structural capital is interrelated with human capital, it exists independently also (Chen, Zhu, & Xie, 2004). For example, patents are created by human capital but once they get created they belong to the company only.

Some authors further divided the organizational/structural capital into process capital and innovation capital (Wang & Chang, 2005). The process capital includes the activities & processes of the firms and the role & responsibilities of the employees whereas the innovation capital encompasses the set of technologies and methods the firm owns (Agostini, Nosella, & Filippini, 2017; Canibano et al., 2000).
The following are the elements of structural capital:

- Procedures
- Databases
- Copyrights
- Patents
- Culture
- Strategies

3.13.3 – **Relational Capital** is all about the value of relationships with different stakeholders who are not related internally to the business, such as the knowledge of market channels, customers, suppliers and regulatory agencies (Maditinos, Mandilas, Gstraunthaler, & Alonso, 2009). It includes not only the set of external relationships established by the firm, but also other dimensions such as branding and reputation (Bontis, 1999; Lowendahl, 2005; Sveiby, 1997; Urde, 1999; Wong & Merrilles, 2008). It consist the understanding planted in various relationships of an organization, these relationships are with customers, competitors, suppliers, trade associations or government bodies (Bontis, 1999).

Chen, Cheng, & Hwang (2005) said that the relational capital incorporate strong levels of understanding, confidence, bonding and coordination between different strategic alliance partners. Therefore it includes trust, faithfulness, intimacy, affinity between the company and its stakeholders.


Moon & Kym (2006) also made an addition of community capital, which refers to the faith and trust in relations, coordination and collaboration in working of stakeholders (Kogut & Zander, 1996; Nahapiet & Ghoshal, 1998).
Elements of relational capital are as follows:

- Relationship with customers
- Satisfaction and faithfulness of customers
- Relationships with distributors
- Relationships with different stakeholders

3.14 - Techniques for measuring the Intellectual Capital

There are many intellectual capital measurement and reporting models, which have been developed by academicians, consultants and practitioners. Popular models used to construct reports on intellectual capital include:

3.14.1 - Balanced Score Card

In 1992, Robert Kaplan and David Norton pioneered their balanced scorecard (BSC). Since then, it has become a model for many of the reporting systems that include non-financial measures. Over the past decade, the balanced scorecard has evolved from being a measurement framework to being a strategy implementation tool. Its aim is to give managers a multidimensional measurement system to measure both financial and non-financial qualities and to link all these measures in one system (Kaplan & Norton, 1992). According to this model organization can be seen from four perspectives:

- Financial Perspectives: It is all about how we look to shareholders. The financial performance measures gauge whether the company’s strategy and its implementation are contributing to the fulfillment of typical financial objective (e.g. profit, growth and shareholder value) or not.

- Customer Perspectives: It is all about the perception of customers towards the business. It identifies the target groups for the company’s products and measures customer satisfaction and customer retention.

- Internal Business (Process) Perspective: It includes the totality of the internal operations which the company undertakes to meet customer expectations and the technology used by the company.
• Innovation and Learning Perspective: It determines the possibility to improve and create value. It includes all measures relating to employees and system, which company has to facilitate for learning and knowledge diffusion. Globalization forces companies to continually improve their current products and process to penetrate the new market with new products and services with a view to enhance the profit margins.

Kaplan & Norton (1992) suggests that key success factors must be determined for each perspective and those must be translated into critical measures (which are concrete goals). All measures should be linked through a cause and effect chain that ends in a relationship with the financial results. Critical measures-indicators vary from company to company but may consist of improved suppliers relationship, improved corporate culture or increasing the skills of employees.

Steps includes in implementing the balance scorecard framework:

• Translating the vision into present strategic objectives and determine the actions that should be taken in each case.

• Communicating and linking the strategy to specific goals.

• Designing an appropriate plan for the allocation of business resources in a manner that eliminates problems from current goals.

• Investigating divergences from goals, giving feedback to managers and reallocate priorities when needed.
Of all the systems for measuring IC Skandia’s navigator model, developed in 1997, is probably the best known, even though it is only implemented in the Swedish part of the organization. It reflects four key dimensions of its business: financial focus, customer focus, process focus and renewal & development focus. Human focus is the core which drives the whole model. The similarity of Skandia navigator with the balanced scorecard is immediately apparent. Indeed, Sveiby (1997) had seen the navigator as a combination of the BSC and Celemi’s intangible assets monitor.

Edvinsson & Malone (1997) said that navigator can be viewed as a house. The financial focus is the roof whereas the customer focus and process focus are the walls. The soul of the house is the human focus. The renewal and development focus is the platform. With such a metaphor, renewal and development become the critical bottom line for sustainability.
3.14.2 - Hubert Saint-Onge’s Model

Hubert Saint-Onge is the founder and Principal of Saint Onge Alliance. In addition to holding key senior management positions in leading companies over the past 25 years, he has developed and refined a model called the Knowledge Assets Framework. This model strategically integrates business plans with branding, leadership and people management in order to optimize the performance of an organization. He indentified three key categories of intellectual capital. These are as follows:

- Human Capital
- Structural Capital
- Customer Capital

3.14.4 - Sveiby’s Model

Karl Erick Sveiby, the chief executive of ‘Sveiby Knowledge Management’, is the first from the non accounting perspective to propose the classification of intellectual capital and believes that the building blocks of forming intellectual capital comprise three elements.
Sveiby (1997) defined the individual components of intellectual capital as mentioned below:

External Structure: It refers to the relationships of the organization with the customers and suppliers. It also includes organization’s brand names, trademarks, reputations, image etc.

Internal Structure: It includes routines, procedures, process, computer and administrative system. These are actually being created by organizational employees and are owned by the organization.

Employee Competence: Individual competence is the thing which cannot be owned by the organization. It is actually the capacity to face various situations and create tangible and intangible assets.

3.14.5 - Wiig’s Model

Wiig (1997) supports the individual components of Skandia’ Intellectual Capital Model.

Figure 3.7: Wiig’s Model

Human Capital: It refers to the competences and capabilities of all the employees.

Structural Capital: It is the results of human capital and reflected in data/knowledge bases or documents of the organizations.

Customer Capital: It refers to the relationship of an organization with its customers.

Organizational Capital: It consists of embedded knowledge assets in the areas of process and innovations.

3.14.6 - Brooking’s Model

Brooking (1996) defined the composition of intellectual capital in a quite different way. The intellectual capital consists of these assets:

Table 3.6: Brookings Model

<table>
<thead>
<tr>
<th>Human Capital</th>
<th>Market Assets</th>
<th>Organizational (Structural) Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intellectual Property</td>
<td>Infrastructure Capital</td>
</tr>
<tr>
<td>Know-how</td>
<td>Brands</td>
<td>Patents</td>
</tr>
<tr>
<td>Education</td>
<td>Customers list</td>
<td>Copyrights</td>
</tr>
<tr>
<td>Vocational qualifications</td>
<td>Customer loyalty</td>
<td>Design rights</td>
</tr>
<tr>
<td>Work related knowledge</td>
<td>Company name</td>
<td>Trade secrets</td>
</tr>
<tr>
<td>Cultural diversity</td>
<td>Distribution channels</td>
<td>Trademarks</td>
</tr>
<tr>
<td>Work related competencies</td>
<td>Business collaborations</td>
<td>Service marks</td>
</tr>
<tr>
<td>contracts</td>
<td>Favorable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Brooking (1996)


IC - dVal approach had been proposed by Ahmed Bounfour in 2003 (Bounfour, 2003). He proposed that there are four dimensions of competitiveness, resources, process, building intangible assets and outputs. From these indicators an overall index of performance is computed by giving relative weighting to each category. The index that comes up from this procedure multiplied by the company’s market value gives
‘Intellectual Capital Dynamic Value’. Later it had been discovered by that this combination had no theoretical interpretation (Andriessen, 2004).

3.14.8 - Intellectual Capital Index (IC-Index™)

It had been developed by Goran Roos and Johan Roos and first used by Skandia (a Swedish insurance company) in 1997 (G. Roos & Roos, 1997). According to Bontis & Nikitopoulos (2001), the IC-index is an example of second generation practices that attempt to consolidate all different individual indicators into a single index and to correlate the changes in intellectual capital with changes in the market (G. Roos & Roos, 1997).

Some of its features are as follows:

- It focuses on the monitoring of the dynamics of IC.
- It is capable of taking into account performance from prior periods.
- It provides a different perspective to the typical valuation based on an examination of physical assets.

**Figure 3.8: Index’s Intellectual capital Tree**

![Figure 3.8: Index’s Intellectual capital Tree](source: Roos et al. (1997))
Roos & Roos (1997) suggested that company specific IC measures depend on the strategy of the companies, business characteristics and operation frequency of the companies. However the specific components of the IC-Index vary from company to company but by and large the categories of index are always same. Some are as follows:

- Human capital index
- Infrastructure capital index
- Innovation capital index
- Relationship capital index

The universal applications of IC index are limited since it is very much context specific. Different definitions, strategic prioritizing, choice of indicators and other elements are all limit the value of the index comparison between companies (Bontis & Nikitopoulos, 2001). Like other measures of intangible assets, an IC-index depends on value judgments in the choice of weights and indicators. Despite this charge of subjectivity Roos & Roos (1997) favors IC index because it makes a large part of the organization visible and open for valuation.

3.14.9 - Intangible Assets Monitor

Sweden based international training consultancy Celemi, had developed Intangible Assets Monitor in co-operation with Karl-Erick Sveiby in 1997. Sveiby identified three overall categories: customers (external structure); people (competence); and organization (internal structure). Under each of these interdependent categories, the three key areas of growth/renewal, efficiency and stability are tracked, each with its own performance indicators. Celemi also produced a management training game called Tango which uses intangible assets monitor thinking and accounting (Sveiby, 1997).

The Sveiby’s Intellectual Capital model consists of the following:

External Structure: It refers to the relationships of the organization with the customers and suppliers. It also includes organization’s brand names, trademarks, reputations, image etc.
Internal Structure: It includes routines, procedures, process, computer and administrative system. These are actually being created by organizational employees and are owned by the organization.

Employee Competence: Individual competence is the thing which cannot be owned by the organization. It is actually the capacity to face various situations and create tangible and intangible assets.

An example of Intangible Assets Monitor

**Table 3.7: Intangible Assets Monitor**

<table>
<thead>
<tr>
<th>Growth or Renewal</th>
<th>External Structure (our Clients)</th>
<th>Internal Structure (Our Organization)</th>
<th>Competency (Our People)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth in market share</td>
<td>Profit / customer</td>
<td>IT investment</td>
<td>Years of education</td>
</tr>
<tr>
<td>Satisfied customer Index</td>
<td>Growth in market share</td>
<td>R&amp;D investment</td>
<td>Level of education</td>
</tr>
<tr>
<td>Satisfied customer Index</td>
<td>Satisfied customer Index</td>
<td></td>
<td>Competence enhancing clients</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>Revenue per client</td>
<td>Proportion of administrative staff</td>
<td>Value added per expert</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revenues per administrative staff</td>
<td>Value added margin on sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>Client satisfaction index</td>
<td>Administrative staff turnover</td>
<td>Expert seniority</td>
</tr>
<tr>
<td></td>
<td>Repeats order</td>
<td>Administrative staff seniority</td>
<td>People satisfaction index</td>
</tr>
<tr>
<td></td>
<td>Five largest clients</td>
<td></td>
<td>Median age of all employees</td>
</tr>
</tbody>
</table>

*Source: Sveiby (1997)*
3.14.10 - Inclusive Valuation Methodology

It had been developed in 2001 by Philip M. Pherson and Stephen Pike. It provided and overall business value as reflected by the sum of intellectual capital and company’s cash flow. The model also showed the relationship between the company value, intellectual capital and monetary measurement to provide an inclusive business valuation (Mpherson & Pike, 2001).

The main components of this model are as follows:

Intrinsic Value: It represents the internal effectiveness of the company.

Extrinsic Value: It is measured by the delivery effectiveness of the company.

Instrumental Value: It reflects the impacts on the competitive environment. The combined value added, under this method is calculated by adding intangible value added with monetary value added.

3.14.11 - Knowledge Capital Earnings Method

It had been developed by Baruch Lev with the aim of measuring financial impact of knowledge related investments. The method is based on the assumption that the resources are of two types, one tangible which includes fixed and long term financial assets and other intangible assets which are employed to generate earnings.

The first step in Lev’s method is to estimate annual normalized earnings based on three year end results. In the second step identify the portion of normalized annual earnings attributable to tangible assets and the portion attributable to long term financial assets. To obtain this portion he suggested an average expected yield rate, e.g. 7% for tangible assets and 4.5% to long term financial assets. Third step of the model is to calculate earnings deriving from intangible assets, which is as a result of the difference between total earnings (calculated in step-1) and the amount of earnings attributable to tangible and long-term financial assets (calculated in step-2). Finally, knowledge capital can be determined by discounting knowledge earnings with an appropriate discount rate.

The method is summarized below
Knowledge Capital = \frac{\text{Normalized earnings} - \text{earnings from tangible and financial assets}}{\text{Knowledge capital discount rate}}

3.14.12 - Economic Value Added

It is a financial performance measure which had been proposed by Stern Stewart and company in 1991. EVA method is primarily used as an internal performance indicator to evaluate the effectiveness of invested capital. The main objective of EVA is to develop a performance measure that properly captures all ways in which corporate value has been added or lost. It does not relate directly to the management of intellectual capital but indirectly an effective management of intellectual capital will increase the EVA.

EVA can be calculated according to one of the following formulas;

(i) EVA = (ROIC – WACC) * invested capital, or
(ii) EVA = NOPAT – (WACC * invested capital)

Where,

a) WACC (Weighted Average Cost of Capital) is the weighted average of cost of debts after taxes and the cost of equity.

b) NOPAT (Net Operating Profit After Taxes)

= Earnings before Interest and Expenses (EBIT) – cash operating expenses

= (Net Sales – Operating Expenses) – Cash operating Taxes

c) ROIC = ratio between NOPAT and invested capital

d) Cash operating taxes are calculated starting from the taxes appearing on the face of income statement and by subtracting the deferred taxes and adding the pre-paid taxes as well as amount of the ‘tax shield’.

Finally it can be said that if a company generates a positive and increasing EVA it is creating value while if the return on invested capital is less than the weighted average cost of capital, therefore the company destroying value. Hence the EVA indicates whether the organization’s intellectual capital is productive or not. But it doesn’t
provide any information about the contribution of intellectual capital to the organization’s performance.

3.14.13 - Value Added Intellectual Coefficient (VAIC™)

It is one of the most accepted models to measure the intellectual capital. In this study it has been taken as an independent variable and the intellectual capital have been calculated by the VIAC™.

The Value Added Intellectual Coefficient (VAIC™) had been developed by Ante Pulic in 2000. In his words VAIC™ is an analytical procedure designed to enable management, shareholders and other relevant stakeholders to effectively monitor and evaluate the efficiency of VA by a firm’s total resources and each major resource component. Basically the Value Added means, wealth which has been created by a company; it can be calculated by subtracting expenses from revenues. Value Added = Output – Input. It is the prime objective of every business to maximize the value addition out of a given amount of physical, financial and intellectual capital. The method to measure the value added creation capacity of all these factors, capital employed (physical & financial capital), human & structural capital (intellectual capital) is known as VAIC™. All three of its components are as follows – Capital Employed Efficiency, Human Capital Efficiency, Structural Capital Efficiency (Pulic, 2000).

Capital Employed Efficiency (CEE): It indicates how much new value has been created by one invested unit of capital employed which includes both physical and financial capital. It shows how successfully tangible assets have been employed.

CEE = VA/CE

Intellectual capital includes both intangible assets human capital & structural capital. Human capital includes all the costs incurred on employees, so to calculate this payroll costs are taken as equivalent to HC. Structural capital includes all those resources which are left behind in the office while employees go back to their homes (software, databases etc). It can be calculated by subtracting the human capital from value added (SC = VA – HC). SC & HC are in reverse proportion the less HC participates in value added the more SC is involved.
Human Capital Efficiency (HCE): It shows how much value added has been created by one money unit invested in the employees.

\[ HCE = \frac{VA}{HC} \]

Structural Capital Efficiency (SCE): It indicates the value added which has been created by one money unit invested in structural capital.

\[ SCE = \frac{SC}{VA} \]

\[ VAIC = CEE + HCE + SCE \]

The CEE, HCE & SCE indicators are being considered precise and objective as they are derived from the balance sheet. They enable the management to know the value added creation efficiency of capital employed and human capital. The higher the VAIC coefficient, the better way management has utilized the company’s potential.

Whereas Value Added = Wages & Salaries + Interest expenses + Taxes paid + Profit after tax

This chapter describes all the dimensions of financial performance appraisal. Its historical background and its methods for measuring the financial performance have also been discussed. It provides a detailed description regarding the techniques which play a very important role in analyzing the financial performance. With the help of tables and graphs the trend of financial performance of Indian IT sector has been shown. It also gives a brief introduction of intellectual capital and its importance in relation to financial performance.