CHAPTER – 5
SUMMARY AND CONCLUSIONS

Today, the methods which create value for the companies have undergone a sea change. During the industrial age tangible assets like land, building, machinery etc. played a major role in creating value for a company. However, in the new globalized economy, when companies are having edge to edge competition, the intangibles like strategies, brands, market leadership, management policies etc. play a major role in creating value for a company. Increasing importance of intangibles can be well assessed from the report on Global Intangible Tracker (GIT, 2006)\(^1\) which highlights a significant rise in the value of intangibles over a five year period. As per the GIT (2006), 62% of the value of the world’s quoted companies is now intangible. Further, the study reveals that the enterprise value of the companies increased by $ 9.4 trillion since 2001. Of this increase, there has been an increase of $ 3.4 trillion in tangible net assets, $ 1.3 trillion increase in disclosed intangible assets (including goodwill), and $ 4.7 trillion increase in ‘undisclosed’ value. As per this study, India has the second highest proportion of the intangible value after Switzerland. Another study carried out by Fukao et al. (2007)\(^2\) explains the increasing importance of intangibles in creating an enterprise value of the world’s three most developed countries, viz. Japan, U.S. and U.K. As per this study, the ratio of intangible investment to tangible investment is 0.3, 1.2 and 1.1 times by the Japanese, U.S. and U.K. industries respectively. Further, the study reveals that the ratio of intangible investment to GDP in Japan has risen during the past 20 years and now it stands at 7.5% but the same is smaller than the values estimated for U.S. and U.K., i.e., 11.7% and 10% respectively. Further, Lev (2004) pointed out that intangible assets account for well over half the market capitalization of public companies. They absorb a trillion

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1. The Brand Finance ‘Global Intangible Tracker’ is the most extensive report ever compiled into intangible assets and it covers over 5000 companies in 25 countries.
2. The study compares the results for U.S. and U.K. found by Corrado et al. (2006), and Marrano and Haskel (2006) respectively.
dollars of corporate investment funds every year. In fact, these ‘soft’ assets are what give today’s companies their hard competitive edge.

Increasing importance of intangible assets in today’s economy requires transformation in the management, accounting and reporting practices as the financial management framework still lags behind when it comes to recognizing and reporting the true value of intangible assets. Till date, no definition, classification, measurement and reporting on intangibles has been globally accepted. The point of discussion among the regulators and academicians is whether to consider intangible assets as financial or non-financial assets. If considered financial then they must be measured, valued and reported in financial accounts but then many intangibles are left out because of the volatile nature of these assets. Accounting standards like IAS-38 on ‘intangible assets’, SFAS-142 on ‘goodwill and other intangibles’, and SFAS-86 on ‘research and development costs’ consider intangibles from financial point of view. As a result, very few intangibles are being covered under the mandatory rules and regulations of accounting all over the world. Despite these regulatory limitations, increasing number of companies are voluntarily opting to include information on their intangibles in the notes to their annual accounts or as an appendix thereto in narrative form. As a result, intangible reporting is divided into mainly two domains, i.e., financial reporting in the profit and loss account, and balance-sheet, and narrative reporting through business review section of the annual report. The narrative reporting on intangibles has not yet been regularized by various accounting authorities but to have competitive edge in the market a number of companies are voluntarily disclosing information on intangibles in their business review section along with the mandatory information on intangibles in the financial accounts. A number of organisations, accounting regulators, academicians and researchers have suggested measurement and reporting frameworks in order to manage these assets. Some of the prominent reporting frameworks on intangibles include Balanced Scorecard, Skandia Navigator, Intangible Asset Monitor, Lev’s Value Chain Scoreboard, List of Intangibles.
The growing importance of intangibles and the issues relating to its reporting in financial statements all over the world demanded further research on this topic. This study examines and compares the various disclosure practices on intangibles of the Indian, U.S. and Japanese companies. Indian top companies have been compared with the world’s top companies from two countries, i.e., U.S. and Japan as these companies were found to be the most dominating in the global market. The study examines the type and extent of information being disclosed by the companies on intangibles. This has been done with the help of a disclosure Index. To have a wider coverage of items being disclosed on intangibles, the index prepared for the study includes both the mandatory and voluntary items. The index has been divided into seven broad groups, namely, research and development, strategy and competition, market and customer, human resource, IPRs & goodwill and other intangibles, corporate and shareholder, and environment and others. The study uses the unweighted, dichotomous index as it reduces subjectivity involved in determining the weights of each item. A disclosure item is scored one (1) if it is disclosed in the annual report or zero (0) if it is not disclosed in the annual report.

For the purpose of this study, a sample of 100 top-most companies of India listed in the compendium of ‘Top 500 companies in India’ has been taken. The U.S. and Japanese companies constituting the sample included 100 U.S. and 60 top-most companies respectively listed in the Fortune ‘Global 500 World’s Largest Corporations’. A five year period, i.e. 2001 to 2005 has been selected to see the improvements in the disclosure practices on intangibles in each country as many new developments on intangibles have taken place during this period. In all 192 annual reports were collected for the year 2005, 177 for 2004, 162 for 2003, 148 for 2002 and 137 for 2001.

Three types of analyses have been carried out to understand the overall and group-wise disclosure practices on intangibles of the countries under study. Firstly, a comparative and statistical analysis is done to have a temporal comparison of the disclosure practices of a particular country over
the study period. In comparative analysis, the disclosure scores are compared both on the yearly and five year period basis. To generalize the above results, two statistical tests, namely, paired t-test and Wilcoxon pair-sign rank test have been applied on the data. Secondly, to study the impact of industry on disclosure practices on intangibles, an independent sample t-test has been applied on two types of industry classification, i.e., service or manufacturing companies, and companies with or without R&D expenditure. Thirdly, to study the association between the disclosure on intangibles and company attributes (organizational size, profitability, leverage, market to book value and industry type), a step-wise multiple regression has been applied. In all, eight regression models were tested. Model-I tests the association between overall disclosure and the selected company attributes. Model-II tests association between the R&D group disclosure and the selected company attributes. Model-III tests association between the strategy & competition group disclosure and the selected company attributes. Model-IV tests association between the market & customer group disclosure and the selected company attributes. Model-V tests association between the human resource group disclosure and the selected company attributes. Model-VI tests association between the IPRs & goodwill and other intangibles group disclosure and the selected company attributes. Model-VII tests association between the corporate & shareholder group disclosure and the selected company attributes. Model-VIII tests association between the environment & others group disclosure and the selected company attributes. The conclusions of the above analyses for each country have been discussed in four parts, i.e., Indian disclosure practices, the U.S. disclosure practices, Japanese disclosure practices and finally, a cross national comparison is discussed to understand the differences in the disclosure practices on intangibles of the three countries.
5.1 INDIAN DISCLOSURE PRACTICES ON INTANGIBLES

A comparative analysis of the overall disclosure scores of Indian companies reveals that during the whole period of study except the year 2003, Infosys Technologies Ltd. is the top scorer. Further, three Indian companies, viz. Indian Rayon Ltd., Aurobindo Pharma Ltd. and Mahindra & Mahindra Ltd. have shown a remarkable improvement of more than 100% in the mean disclosure scores over the five year period. The mean disclosure scores of the Indian companies increased from 16.38 in 2001 to 21.47 in 2005 showing an increase of 31% over the five year period. Statistical analysis of Indian companies revealed a significant improvement in the overall disclosure scores on intangibles in the comparison made both on the yearly and five year basis.

A comparative analysis of the disclosure scores of Indian companies reveals that by the end of 2005 more than 50% of the Indian sample companies disclosed maximum information on items from the R&D group as this is a mandatory requirement under section 217(1) (e) of the Companies Act, 1956 and Companies (Disclosure of particulars in the Report of the Board of Directors) Rules, 1988. Also, 81% of the sample Indian companies disclosed information on corporate governance which is also mandatory requirement as stipulated in Clause 49 of the Listing Agreement with the Stock Exchanges. In case of Indian companies the disclosure on shareholder information mainly forms a part of corporate governance report, as a result of which more than 50% of Indian sample companies disclosed information on share price data and shareholding distribution patterns. The other item on which about 77% of the Indian companies disclosed information includes particulars of remuneration paid to key managerial employees which is also mandatory under the section 217(2A) of the Companies Act,1956. On the whole, it can be said that mandatory disclosure is more in case of Indian companies as compared to voluntary disclosure on intangibles. Voluntary disclosure is also increasing with the time as major shift of more than 100% can be seen on the items like R&D facilities, R&D personnel, growth strategy,
strengths, strategic alliances, brand value, number of dealers, training programmes, corporate history, and major shareholders. Further analysis of the various items included in the index reveals that during the period of five years maximum increase of 200% has taken place in the disclosure scores of items from IPRs & goodwill and other intangibles group. The increase in these items can be attributed to the coming up of Accounting Standard-26 on intangible assets in the year 2003 as major shift in the disclosure on the same can be seen in the consecutive year, i.e., 2004 (mean disclosure scores increased from just 1.65 in 2003 to 3.3 in 2004 showing an increase of 100%).

The area where the Indian companies are lacking in disclosure on intangibles is strategy and competition group and market and customer group. Statistical analysis of group-wise comparison of the disclosure scores reveals a significant improvement during the study period in all the seven groups. A yearly comparison of seven groups reveals that three groups, viz. R&D, IPRs & goodwill and other intangibles, and environment & others showed a significant increase in their mean disclosure scores during each year of study.

The univariate analysis for industry classification of Indian companies as service or manufacturing reveals that the overall mean disclosure of service companies is more than the manufacturing companies but this result can’t be generalized as the mean difference is not significant at 95% level of significance in any of the study years. For group-wise analysis the results reveal that till 2004, service companies disclosed significantly more on three groups, viz. strategy & competition, market & customer and human resource. But during the last year of study, i.e. 2005 the difference in the mean disclosure scores is not significant which shows that manufacturing companies are also coming up with information on these items.

The results for other industry classification, i.e. companies with or without R&D expenditure reveal significant differences in the overall mean disclosure scores during all the years of study except 2001. It means, generally, Indian companies with R&D expenditure disclose more on intangibles as compared to those without R&D expenditure. The results for
group-wise univariate analysis reveal that the companies with R&D expenditure disclosed significantly more on R&D, human resource and environment & others groups.

The results for step-wise multiple regression reveal that the two company attributes, viz. profitability in terms of return on assets and industry type are significantly associated with the Indian companies’ overall disclosure on intangibles. The results for group-wise disclosures reveal that different attributes are associated with different groups as disclosures on R&D group and environment & others group are found to be significantly associated with the type of industry, whereas disclosures on groups like market & customer, and human resource are significantly associated with profitability in terms of return on assets. Disclosure on strategy & competition is significantly associated with both profitability in terms of return on assets and industry type, whereas disclosures on IPRs & goodwill and other intangibles show varied results over the study period.

5.2 U.S. DISCLOSURE PRACTICES ON INTANGIBLES

A comparative analysis of the overall disclosure scores of the U.S. companies provides varied results as the top scorer among the selected companies is different in all the study years. The companies which earned the top scores in respective years are Concophils (2001); Hewlett-Packard, and Rite Aid (2002); Intel Corporation (2002 & 2003); and Honeywell International Ltd. (2005). Further, analysis of the disclosure scores reveals that the two U.S. companies, namely, Motorola and Dell showed a remarkable improvement of 320% and 245% respectively during five year period. Statistical analysis reveals an upward trend in the disclosure scores of the U.S. companies as the mean disclosure score increased from 16.01 in 2001 to 18.98 in 2002, from 20.65 in 2003 to 21.50 in 2004, and it further increased to 22.74 in 2005. Overall, it shows an increase of 42% in five year period. This upward trend is also evident from the results for classification of companies on the basis of their disclosure scores which reveal that the average number of companies having disclosure score less than 40 has increased from zero in
2001 to 13.65 in 2005. This upward trend can be generalized as both the parametric and non-parametric tests show significant improvements in both the yearly and five year overall disclosures on intangibles.

A comparative analysis of the group-wise disclosure scores reveals that by the end of 2005 the U.S. companies disclosed more on the items from three groups, namely, strategy & competition, market & customer and IPRs & goodwill and other intangibles. However, the areas where the U.S. companies lagged behind are R&D, and human resource. Further, an item-wise comparison of the disclosure scores reveals that some of the items in the index showed a remarkable improvement of more than 100% during the five year period. Such items include R&D activities, R&D personnel, R&D centres, R&D efforts, market share, major suppliers, environment initiatives, corporate governance, information on credit ratings etc. Maximum increase of 200% is shown by nine items out of twenty-five items from the group on IPRs & goodwill and other intangibles. The reason for this increase is the issuance of SFAS-142 on goodwill and other intangibles in the year 2001 as major shift in the disclosure scores of the same can be noticed in 2002 (mean disclosure scores increased from just 4.78 in 2001 to 7.19 in 2002 showing an increase of 50% in a single year). Statistical analysis of the group-wise disclosure on intangibles reveals an upward trend in all the seven groups. The mean disclosure scores of all the seven groups showed an increase during each year of study but statistically this increase is not significant. However, the five year change in the disclosure scores of all the seven groups is statistically significant.

The results for univariate analysis of industry classification as service or manufacturing companies reveal that the manufacturing companies disclose significantly more on overall intangibles than the service companies. The results for group-wise disclosure reveal that manufacturing companies disclose more on all the seven groups but statistically the mean difference of only R&D group differs significantly.
The results for other industry classification, i.e. companies with or without R&D expenditure reveal that companies with R&D expenditure disclosed significantly more on intangibles than the companies without R&D expenditure. The results for group-wise disclosure reveal that the companies with R&D expenditure disclosed significantly more on groups like R&D and IPRs & goodwill and other intangibles during each year of study. The U.S. companies without R&D expenditure disclosed more on market & customer group but the mean disclosure scores do not differ significantly.

The results for step-wise multiple regressions reveal that industry type is the only company attribute which is significantly associated with the overall disclosure scores of the U.S. companies. Further, the group-wise analysis reveals that the disclosure scores of only two groups, i.e. R&D, and IPRs & goodwill and other intangibles are significantly associated with industry type. Other groups have shown varied results.

### 5.3 JAPANESE DISCLOSURE PRACTICES ON INTANGIBLES

A comparative analysis of the overall disclosure scores of Japanese companies reveals that during all the years of study except 2003 Canon has been the top scorer. It has shown an improvement of 62.50% in five years. Further, three Japanese companies, namely, Chubu Electric, Tokyo Electric and Mitsubishi Heavy Corporation showed a remarkable improvement of more than 200% in five year period. Statistical analysis reveals an upward trend in the overall disclosure scores as the mean disclosure scores increased from 14.05 in 2001 to 14.30 in 2002, from 17.92 in 2003 to 20.32 in 2004, and it further increased to 22.38 in 2005. Overall, the results reveal that the disclosure on intangibles increased by 60% in five year period. This upward trend is also visible from the classification of companies on the basis of their disclosure scores as the average number of companies having disclosure scores less than 40 have increased from zero in 2001 to 12.50 in 2005. Statistically, disclosure scores increased consecutively during the period under study except 2002. The five year comparison of the disclosure scores too showed significant increase. Comparative analysis of group-wise
disclosure on intangibles reveals that by the end of year 2005 more than half of the Japanese sample companies disclosed maximum information on items from the two groups, namely, corporate & shareholder, and environment & others. More than 25% of the sample companies have disclosed on the items from three groups, namely, R&D, strategy & competition and corporate & shareholder. It includes mainly voluntary disclosure. Further, an item-wise comparison reveals that some of the items showed a remarkable improvement of more than 100% during the period of study. It includes R&D facilities, R&D focus areas, R&D achievements, new technologies, market units, market risk, market leadership, customer satisfaction, corporate philosophy, shareholding pattern, environment management framework, corporate social responsibility, and corporate governance. There has been maximum improvement in the items from two groups, namely, strategy & competition, and IPRs & goodwill and other intangibles as ten out of thirty and nine out of twenty-five items showed a remarkable improvement of more than 100% during the period. The mean disclosure of IPRs & goodwill and other intangibles showed a remarkable improvement in the year 2003 as the mean disclosure increased from 1.62 in 2001 to 3.85 in 2003 with the percentage increase of 133%. This increase may also be attributed to the introduction of SFAS-142 on Goodwill and other intangibles as most of the top Japanese companies follow U.S. GAAP to prepare their financial statements. Statistical analysis of group-wise disclosure scores on intangibles reveals an upward trend in all the seven groups. Significant increase can be seen in all the groups except human resource group in the year 2003. It means that major improvement in the disclosure scores has been in the year 2003. Further, three groups, namely, strategy & competition, market & customer, and environment & others reveal significant increase during each year of study. A comparison undertaken for the whole period shows a significant increase in the disclosure scores of all the groups.

The results for both the service or manufacturing companies reveal that service companies disclosed more than manufacturing companies but the
difference in the mean disclosure is not significant in any of the study years. The results for group-wise disclosure reveal that Japanese manufacturing companies disclose significantly more on R&D group. For all the other remaining groups except human resource, service companies have more mean disclosure score but statistically the difference is not significant.

The results for other industry classification, i.e., companies with or without R&D expenditure reveal that the companies with R&D expenditure disclosed more on intangibles but the difference is significant only in first three years. Group-wise analysis also reveals that the companies with R&D expenditure disclose significantly more on the R&D group. For all other groups, the mean difference in the disclosure score is not found to be significant.

The results of step-wise multiple regression reveal that organizational size (either in terms of assets or sales) is significantly associated with disclosure scores on intangibles in all the study years. Group-wise analysis of the disclosure scores reveals that different company attributes are associated with different groups as disclosure on R&D group is significantly associated with only industry type, whereas disclosure on other groups is significantly associated with organizational size.

5.4 CROSS-NATIONAL COMPARISON

The study brings out that the countries under study, i.e., India, U.S. and Japan have shown a significant improvement in their overall disclosure scores over the five year period. The companies from these countries have shown an increase of 31%, 42% and 59% respectively in their overall mean disclosure scores. It means that the Japanese companies have shown the maximum improvement in the overall disclosure scores in five year period followed by U.S. and Indian companies. A comparison made on the basis of disclosure scores on intangibles of average number of companies reveals that there has been an improvement in such scores in the case of all the Indian, U.S., and Japanese companies. The Indian average number of companies having
disclosure scores less than 40 increased from just 2.5 in 2001 to 10 in the year 2005. Similarly, in case of U.S. and Japanese companies, the number increased from zero to 13.64 and 12.50 respectively. Statistical analysis reveals that maximum disclosure was made by U.S. companies during the study period except in the year 2001. The second position was earned by Indian companies in all the study years followed by Japanese companies except in the year 2005 when the second position was taken by Japanese companies. The results of Kruskal-Wallis test reveal that significant differences exist in the disclosure practices on intangibles of the Indian, U.S. and Japanese companies for the years 2001, 2002 & 2003. However, no significant differences existed with respect to disclosure practices existed with respect to disclosure practices on intangibles followed by the companies from the three countries under study during the remaining years, i.e. 2004 and 2005.

A comparative analysis of group-wise disclosure scores reveals that by the end of year 2005 more than half of the Indian companies disclosed on the items from research and development group but that was not the case for the U.S. and Japanese companies. Another major difference can be seen for the market and customer group as no item on the same is disclosed by more than half of the Indian companies, whereas U.S. and Japanese companies disclosed information on major products, Geographic division, primary markets and market risk. Unlike the disclosures made by more than half of the U.S. companies on valuation of goodwill, the Indian companies have not disclosed such information at all. Further, the U.S. companies do not disclose information on corporate and shareholder in their annual reports, whereas more than half of the Indian and Japanese companies disclose about shareholding patterns and major shareholders respectively. More than 25% but less than 50% of the Japanese companies cover most of the items from R&D, strategy and corporate groups, whereas the U.S. companies covers most of the items from competition and market groups. The U.S. and Japanese companies lack in disclosure on human resource as no item on the
same is disclosed by more than 25% of the sample companies, whereas Indian companies voluntarily disclose information on training programmes and human resource development activities.

Statistically also, the Indian companies disclose information on research & development, and human resource more than the companies from other two countries, i.e. U.S. and Japan as the mean disclosure scores of Indian companies have been higher during all the five years in these areas. The U.S. companies disclose information on strategy & competition, market & customer, and IPRs & goodwill and other intangibles more than the Indian and Japanese companies. Japanese companies disclose more on corporate and shareholder, and environment & others. As per the statistical analysis, significant improvements can be seen in the overall disclosure scores on intangibles of each country in each study year. Significant improvements can be seen in the disclosure scores of R&D group, IPRs & goodwill and other intangibles group, and environment & others group in each study year of the Indian companies, whereas in case of Japanese companies this improvement is in the strategy & competition group, and market and customer group. The U.S. companies have not shown significant improvement on any of the seven groups during the whole study period. As a result, all the companies from three countries under study have shown improvement in the overall disclosure scores on intangibles but the areas of improvement differ.

The Kruskal-Wallis test results for item-wise disclosure on intangibles reveal that significant differences exist among the Indian, U.S. and Japanese companies on research and development, market & customer, human resource, IPRs & goodwill and other intangibles, and corporate & shareholder disclosure scores during the whole study period. For strategy & competition, no significant difference lie for the first three years but for the subsequent two years, i.e. 2004 & 2005 significant differences existed among the companies from three countries under study. However, for environment & others, significant differences existed during the last three years of study, i.e. 2003-05
The univariate analysis reveals that significant difference lies in the overall and R&D mean disclosure scores of the companies from all the three countries for industry classification as companies with or without R&D expenditure. It means that the companies with R&D expenditure disclose more on overall intangibles and R&D group than the companies without R&D expenditure. For the other industry classification, i.e., service or manufacturing companies, the results reveal that no significant difference lies in the overall mean disclosure scores of the Indian and Japanese companies, whereas significant difference lies in the overall disclosure scores of the U.S. service and manufacturing companies.

The step-wise multiple regression results reveal that different company attributes are associated with the disclosure scores of the three countries, i.e. India, U.S. and Japan. The disclosure scores of Indian companies are more associated with organizational size and profitability, whereas those of the U.S. companies are more associated with industry type. However, in the case of Japanese companies, disclosure scores are associated with organizational size. Group-wise analysis reveals that in all the countries disclosures made by the companies on R&D group are associated with Industry type.

SUGGESTIONS

Some of the important suggestions include:

- The present study can be useful for the corporate sector in improving its disclosure on intangibles.

- Indian companies lag behind in the disclosure on strategy and competition, and market and customer groups as compared to the Japanese and U.S. companies respectively. They can improve disclosure in these areas as the study gives the details of various items on the same being disclosed by the two countries.

- The accounting authorities shall endeavour to regularize the narrative reporting on intangibles.
**SCOPE FOR FURTHER RESEARCH**

Some of the possible aspects that can be explored by future researchers on intangibles include:

- Disclosure practices on intangibles of the banking and insurance companies offer scope for investigation as they are governed by different statutes.

- Disclosure of top emerging companies in Asia can be compared to know the status of Indian disclosure on intangibles in Asia or within the Asian countries.

- Case studies regarding measurement and reporting on intangibles can be taken up with respect to leading Indian companies.

- Further research can be carried out on the same index by further dividing it into qualitative and quantitative information, as well as mandatory and voluntary information.

- The studies in the areas of reporting on intangibles making inter-sectoral or inter-country comparisons offer a wide scope for research.

- A study on the association between the cost of capital and disclosure on intangibles of Indian companies provides scope for further research.

- A study establishing the relationship between the performance of companies over years and R&D expenditure or market to book values (proxies for intangibles) also provides scope for further research.