Chapter 6
Summary of Findings, Conclusions and Suggestions

In this chapter a summary of the major findings of the study as well as necessary conclusions and the suggestions are being given. Besides, the future scope of work in the area has also been deliberated.

The select companies have been studied thoroughly, to provide a meaningful insight into the use of information and communication technologies in the organizations under study. Computer Based Information Systems have been evaluated from an end-user perspective as the means for exchanging, storing and distributing information at different organizational levels for communication purposes and for enhancing the organizational performance. The key parameters of organizational performance that have been used are (i) Shared Vision, (ii) Strategic Development, (iii) Cooperative Effectiveness, (iv) Business Ownership; and (v) Best Practices. An attempt has been made to evaluate how CBIS has affected these dimensions of organizational performance from the point of view of users.

Organizational Performance has been identified as the foundation for economic prosperity, a prerequisite for development and also an important indicator of organizational competitiveness (Dedrick et al, 2003). Measuring and evaluation of organizational performance, contributed towards the understanding of efficacy of the information systems in the overall context of the Organizations under study.

6.1 Findings of the Study

After analyzing and interpreting the data collected from the research, following major findings of the research are being given:-
The performance of all the selected companies under study has increased, as a result of the implementation of the Information Systems. From the analysis of the table and the Fig 4.9 it is clear that the results are more than what has been expected by the employees. It has been calculated that the difference between the actual and the expected performance in LG, SAMSUNG, ONIDA and VIDEOCON has come on the positive side i.e., 0.34, 0.20, 0.25 and 0.11 respectively. This shows that more or less the actual impact of CBIS on performance indicators has been as per the expectations of the employees.

Also, the data gathered from the study suggests that there has been a significant difference between the performance of the Computer Based Information Systems in the Indian and Foreign Multinational Companies. It is visible, that on the whole Foreign Multinationals scored over the Indian Multinational Companies. But on some factors like Co-operative Effectiveness and Business Ownership the Indian Multinationals have outsourced the Foreign Multinationals.

It has been found that there is no significant difference between the expected and actual impact of CBIS on performance of the selected companies under study. Overall analysis of the data shows that the difference between the expected and actual values is almost negligible. So it can be safely concluded that there is no significant difference between the expected and actual performances of the organizations under study.

It has been evident that higher is the age group of the respondent, higher is the level of expectations from CBIS. The reason is the working experience of the respondents, i.e., longer they have worked in the organizations more are their expectations from CBIS, to reduce their time and efforts. The employees have many expectations from Computer Based Information Systems. The fact is evident from the expected mean scores for LG,
Samsung, Onida and Videocon, which are 3.43, 3.44, 4.10, and 4.05 respectively as shown in the table and the fig 4.4.

It has been found that higher is the age group of the respondent lower is the perceived level of actual performance. It has been found that the higher age group employees do not get the results as expected, because they have shown reluctance to adopt new technologies and are also not eager to change traditional methods of working. The mean scores for perceived actual impact on performance are 3.15, 3.36, 3.82, & 3.79 for LG, Samsung, Onida, and Videocon respectively as shown in the table and the fig 4.4. On comparing the expected and the actual mean scores for the higher age groups, it is evident that their expectations are more than what they are actually getting from CBIS.

It has been found that lower age group respondents have got their results more than they have been expecting. This is contributed due to the fact that the lower age group respondents are eager to learn the new technologies to reduce their day to day burden of activities related to the workplace. This fact is evident from the expected impact of 3.4, 3.5, 3.8 & 3.9 for LG, Samsung, Onida, Videocon respectively and actual impact of 3.5, 3.7, 3.9 & 4.2 for the above organizations respectively as shown in the table and the fig 4.4.

The research shows, Computer Based Information Systems not only makes a positive contribution towards output of the companies under study, but also makes positive contribution in many intangible factors such as communication, teamwork, timeliness and reliability of information etc. The above mentioned observation implies that use of Computer Based Information Systems not only improves organizational performance, but
also leads to organizational growth. This fact is evident from various indicators like in case of LG the net profit has increased from 703 to 2052(KRW) in the period 2005-2009. Whereas, in case of Onida the total income has risen from 1046.18 to 1915.94 (Crores) in the period ending 2005 to 2011. In case of Samsung in the period ending 2009 and 2010 the net profit has increased from US$ 36639571 to US$ 45626046. In case of Videocon for the period (2006-2010), the net profit has increased from 494.04 crores to 738.91 crores.

Computer Based Information Systems has been a valuable resource for many managers. More than half of the respondents in this study describe themselves as very dependent upon computing and two-thirds have reported that, in most cases, Computer Based Information Systems are important in doing their job. As expected, managers find Computer Based Information Systems to be particularly useful for allocating, monitoring and controlling their resources. Managers rely on automated reports, either printed or online, to provide accurate and timely information. And it is now possible for managers to receive a vast array of routine and special reports which analyze their activities in detail. The mean score values for actual impact for ONIDA, VIDEOCON, SAMSUNG and LG is 4.2, 3.98, 3.8 and 3.2 respectively with regards to availability and timeliness of information.

Managers’ find that the CBIS has less impact on Business Ownership, which has a score of 0.10, and more impact full for Best Practices which has a score of 0.82 in case of LG, as far as SAMSUNG is concerned it has the lowest value of impact i.e. 0.05 for the Shared Vision, and again the Best Practices has high impact on the performance of SAMSUNG as shown by the value i.e. 0.53. When it comes to ONIDA there is not much difference in the values of impact on the performance, as shown by the data. In case of VIDEOCON
Strategic Development has a lowest impact i.e. 0.0, where as Cooperative Effectiveness has highest impact of 0.25.

It has been noted that the Availability and Timeliness of the information is not as expected by the respondents, except in case of SAMSUNG. Employees of SAMSUNG agree that the availability and timeliness of information delivery has improved due to the implementation of Information Systems. Expected impact values are 4.52, 4.30, 3.31 and 3.34 and actual impact values are 4.19, 3.98, 3.77 & 3.17 for ONIDA, VIDEOCON, SAMSUNG and LG respectively. Except SAMSUNG, rest the entire companies feel that they did not get the availability and timeliness of information delivery as expected by them.

Regarding the impact of Information systems and cost quality, the expected values of impact are 3.72, 3.24, 2.97 & 2.84 and actual values of impact are 3.69, 3.54, 3.40 & 3.15 for ONIDA, VIDEOCON, SAMSUNG and LG respectively. It is evident that in LG and SAMSUNG the impact has been much more than what has been expected, where as in case of ONIDA and VIDEOCON the impact has been more or less just as expected.

The CBIS has improved the productivity of the employees. However, incase of ONIDA, the productivity has not been significantly impacted. Expected values of impact are 4.27, 3.78, 3.50 & 3.51 and actual values of impact are 4.11, 4.06, 3.75 & 3.60 for ONIDA, VIDEOCON, SAMSUNG and LG respectively. The overall productivity of all the employees of the organizations has improved due to impact of CBIS.

Information Systems have had a positive impact on the managements’ functioning which is slightly less than their expectations, as is evident from the actual mean score of 3.87 as against the expected mean of 3.91.
The profits of business units of the Organizations have increased, as expected by the employees of the Organizations, by implementing CBIS. Expected values are 4.00, 3.66, 3.45 & 3.50 and the actual values are 4.27, 3.94, 3.77 & 3.65 for ONIDA, VIDEOCON, SAMSUNG and LG respectively.

Implementation of CBIS has helped the Organizations in taking the business initiatives. The expected values are 4.08, 3.64, 3.27 & 3.51 and the actual values are 4.00, 3.92, 3.59 & 3.76 for ONIDA, VIDEOCON, SAMSUNG and LG respectively. The expectations of the employees of the Organizations under study have been fulfilled by the Information Systems.

The CBIS responses claimed that the Information Systems have decreased the Product/Service Lead Time, but marginally less than the expected values. The expected values of impact are 3.86, 3.36, 3.50 & 3.29 and the actual values of impact are 3.75, 3.38, 3.40 & 3.26 for ONIDA, VIDEOCON, SAMSUNG and LG respectively.

Organizations agreed that the implementation of CBIS has improved their efficiency. The actual mean vale of 3.8814 is very near to the expected value of 3.9175, which shows that that implementation of CBIS has brought improvement in their efficiency.

The employees have expected that implementation of Information Systems will lead to the reduction of customer complaints with the expected mean value of 3.9072 while the actual mean value obtained was 3.7423 which is less than the expected value. This shows that shows that implementation of Information Systems has somewhat less effect over the reduction of complaints, as expected by the employees.
Implementation of Information Systems has helped in taking good quality decisions as was expected by the employees of the Organizations, which is clear from the expected mean value of 3.9691 and actual mean value of 4.0619.

The actual mean value of 3.7474 in comparison to the expected mean value 3.6753. Shows that the implementation of CBIS has indeed ensured the availability of complete/comprehensive information at the disposal of the users.

Implementation of Information Systems has reduced the employee turnover as expected by the employees. The actual mean value is 3.4536 and expected mean value is 3.4588 has been obtained.

The employees expected, that the implementation of Information Systems will result in the improvement of firm’s reputation and it has been confirmed by the expected mean values of 3.97, 3.74, 3.25 and 3.42 for ONIDA, VIDEOCON, SAMSUNG and LG respectively and actual mean value of 4.47, 4.08, 3.68 and 3.47 for ONIDA, VIDEOCON, SAMSUNG and LG respectively.

Implementation of Information Systems has resulted in constant growth of sales as expected by the employees. The expected mean value is 3.5773 and actual mean value is 3.9278 were obtained. The results indicate that the organizations are getting more than their expectations.

The CBIS analysis shows that the employees expected, that the implementation of Information systems will result in constant growth in company’s assets. That has been proved by the expected values at 3.7423 and actual Mean value is 4.0567, the growth in companies assets is more than expected.
Implementation of Information Systems has contributed towards constant growth in company’s profit as expected by the Organizations. The expected mean value of 3.9742 and actual mean value of 4.0567 have been obtained.

6.2 Conclusions

Although Computer Based Information Systems makes a positive contribution towards the overall performance of the select organizations, combining the complementary investments in work practices with Computer Based Information Systems investment is essential to stabilize and support the positive contribution in future. Therefore, the performance factors have been evaluated by the employees of the organizations under study. After detailed analysis, a significant difference between the perceived and the actual impact on various performance factors has been seen. According to the employees of the organizations under study, there has been an improvement with the use of Computer Based Information Systems. In fact the improvement in case of the foreign Multinationals has been more than expected, whereas in case of Indian Multinationals the impact has been more or less as expected.

The empirical evidence also supports the impact of organizational factors, which acts as the antecedent factors in influencing Information Systems success.

The alignment of Information Systems’ strategy and business objectives (goal alignment), has been found in all the important organizational factors for ascertaining the success of Information Systems, viz a viz its impact on performances. This shows that Information Systems strategic role has gained much interest among the employees in the organizations under study.
Important confirmation has been obtained that Computer Based Information Systems effectiveness here is, at least in part, a function of the relationship between perceived importance and actual performance on individual Organizational performance attributes. It may be concluded that those organizations that concentrate their information resources in the most important (five dimensions) areas will achieve greater success than those that spread their information resources thinly, focusing on areas of traditional success only or worse yet, losing sight of the need to plan for information and thus deteriorating into day-to-day firefighting and crisis management.

It is especially important for those firms enjoying less success in this sector is to re-evaluate the quality of their information systems (as opposed to numbers of systems) and reliability of information services. This finding is consistent with the growth stage of the organizations. Organizations are now making a major transition to automating tasks, building societies and are competing vigorously on the same ground with each other to improve their services, and to offer maximum flexibility to the individual clients. Corporate success will depend in large measure on excellent and reliable information processing systems.

It is to be expected that the many differences between industries, companies, growth in Computer Based Information Systems and so on, will dictate the very specific variables influencing Computer Based Information Systems’ success in the individual organization. On the basis of these study findings, however, a management strategy for assessing and improving Computer Based Information Systems effectiveness’ is needed by the Indian Companies to compete with their foreign counterparts.
This analysis also provides some interesting evidence regarding the validity of the alternative images of employees as users of Computer Based Information Systems, as described in the beginning of the paper and also being described as under:-

*Most employees do not have an aversion to Computer Based Information Systems. On the contrary, and to a surprising extent, most employees admit to being very dependent upon computing, and attribute broad importance to Computer Based Information Systems in their work.* And the majority of employees now find Computer Based Information Systems more useful than personal experience in identifying problems, a dramatic shift in the utility attributed to Computer Based Information Systems between 1990 and 2000.

*Computer Based Information Systems seems to be valued more highly by the employees who have been termed as Computer Based Information Systems consumers.* Indeed, Computer Based Information Systems have been judged most useful by the employees who are higher users of Computer Based Information Systems and who do not rely upon others to screen and interpret information for them. Computer Based Information Systems have not been judged as useful by those employees whose computing use is more frequent, direct, and hands-on.

*It can be concluded that higher age groups have more expectations from CBIS, whereas the younger age groups have indicated a higher impact on actual performance. Care must be taken while implementing CBIS, to include the higher age groups as well. Also, the data indicates high impact on Cooperativeness effectiveness and Best Practices. Whereas other factors such as Business Ownership, Strategic Development and Shared Vision also needs to given special focus. Also the impact has been more on, Finance and Accounts, HRM, Logistics, Technology, Infrastructure, Operation, however the impact on R&D, Marketing*
and Sales Departments. It can be concluded that the impact of CBIS on Availability and Timeliness of Information needs to be improved further in all the Organizations vis-à-vis actual performance.

Also it can be concluded, that the cost of quality has been reduced due to implementation of the Information Systems. Regarding the productivity of employees, the same has been improved due to the CBIS wherein the productivity has gone somewhat up.

Information Systems seem to be having a significant impact on improving the managerial function e.g., planning, controlling, organizing etc. the impact has been more or less on the expected lines.

It can also be concluded the CBIS has contributed significantly towards the enhancement of profitability of the companies beyond the expectations of the employees. Further CBIS has improved the capability of the said companies, to take new business initiatives.

Product/Service Lead time of the companies under study has come down after the implementation of CBIS. This shows that the factor has been, although there is a scope of improvement.

Regarding efficiency, the expected and the actual impacts are nearly the same. Therefore it can be concluded that further work can be done in this regard and that the efficiency of work systems has improved due to computerization on expected lines.

It has been seen that there is still a need to implement CBIS in a way which reduces the customers’ complaints. As it has been seen that CBIS has indeed reduced the customers’ complaints, but some what less than the expectations of the employees.
CBIS has improved the quality of decision making in the selected Organizations under study. The impact on decision making has been felt more in the Indian Organizations as compared to the Foreign Organizations.

Implementation of CBIS has ensured the availability of complete and comprehensive information. The employees of all organizations expected the same and it has been seen that the users are receiving complete/comprehensive information from CBIS.

Implementation of the Information System has reduced the turnover of employees. It has been seen that the turnover of the employees has reduced. The results have been as per the expectations. This shows that the computerization has met the expectations of the employees.

CBIS analysis shows that the implementation of Information System in the organizations has improved the reputation of the firms, this has also been confirmed by the employees.

There has been an improvement in the growth of sales in the organizations after they have implemented CBIS. This has been confirmed by the employees during the CBIS analysis, that there has been constant growth of sales. Implementation of CBIS has indeed resulted in constant growth in company’s assets. This is inline with the expectations of the employees.

Information System has improved the working of the employees. CBIS analysis supports the fact that implementation of Information Systems has indeed contributed towards the constant growth in company’s profit.
6.3 Suggestions

Although Computer Based Information Systems make contribution towards the overall performance of the companies; combining the complementary investments in work practices, human capital, and company restructuring with IT investment is essential to stabilize and support the positive contribution in future. The role of Computer Based Information Systems in organizational performance is as a facilitator and enabler. Computer Based Information Systems have an important role in improving the overall performance of the companies.

These organizations need to give a special focus on CBIS as it has been seen that CBIS have a direct relationship with enhancement of organizational performance viz a viz the five factors, which have been taken up for the study. Also the organizations need to make continuous improvement in their Information Technology initiative, so that the competitive advantage that these organizations have achieved is not lost.

Besides the organizations need to focus on those Information Systems, which enhance Shared Vision and Strategic Development. As these parameters are very significant for enhancing the business performance. Also further efforts need to be done to enhance the role of CBIS in enhancing Business Ownership and improving Best Practices in the organization.

Although the result of CBIS on performance of select organizations has been more or less on expected lines, care should be taken to implement CBIS in such a manner that the actual impact surpasses the actual expectation of the employees.
There need to give an emphasis on arranging special awareness programs for the higher age groups employees of the organizations, as these employees have more expectations from CBIS. Also applications in the area of new technology which affect work practices need to be given emphasis, as the younger employees have shown keen interest in adopting new technologies to traditional methods of work.

The organizations need to improve *Availability and Timeliness of Information Systems* especially in the Indian organizations as this factor is crucial for improving the overall effectiveness of Information Systems in enhancing performance. Similarly the Indian companies also need to implement systems, which can reduce the overall cost as it has been seen that in foreign companies CBIS has been able to reduce the overall cost.

The companies should treat Information System as a valuable resource like other resources of the organizations, so that emphasis can be placed on its effective management in terms of its profile, planning, controlling and organizing. So that the Information Systemss can be developed in a more holistic and futuristic manner.

The organizations, especially the Indian organizations should consider Information Systems for their Strategic role by including the Information Systems’ specialist on their board so that more Strategic decisions regarding the futures outlook of the organizations can be made by studying the nature and direction of Information activity concerned.

The companies also need to consider information policy for their organizations. The policy needs to be framed in light of five dimensions listed in the study viz, *(i) Shared Vision (ii) Strategic Development (iii) Co-operative Effectiveness (iv) Business Ownership and (v)*
Best Practices as these factors are intangible in nature, but very important from the point of view of enhancing the performance of organization.

Videocon and Onida need to enhance the overall effectiveness of their Information Systems by bench marking themselves against their foreign counter part like LG and Samsung, which have varied their market shares by assessing their strength and weakness in relation to Information Systems. This will enable the Indian companies as well as their foreign competitors to follow best practices in this sector.

6.4 Future Scope of Research

The study can be extended to include other companies existing in the sector, so that the broad generalization for this sector can be drawn. Also a comparative study between a large number of Indian and Foreign companies can be under taken. So that conclusions can be drawn on a larger canvas.

Further a study of the impact of CBIS on organizational performance can be done across different sectors so as to draw comparisons across the sectors.

Further scope of work can also include conducting a longitudinal study, wherein a comparison is made prior and post implementation of CBIS, so as to elicit responses, which can measure the changes across a different time horizon.