CHAPTER VI
CONCLUSIONS AND POLICY IMPLICATIONS

The last decade of twentieth century represented a turning point in the global development process. The new approach to knowledge based economy and network society gave impulse to focus more on production factors that are intangible like information and knowledge etc. As such in today’s knowledge-based economies and network societies, intellectual capital is a core factor. *The work has been an attempt to design and empirically prognosticate a model that relates intellectual capital and business performance in the Indian service sector.* The final output of the work will help in framing a system for quantifying intellectual capital and use it as a control variable to maximize the performance of an organization. The target user group for this research is the corporate world, academicians and policy makers.

An elaborate review of literature on intellectual capital and performance has been done. Review of literature brings forth both the micro or firm level studies and the macro or national level studies and also the studies focusing on the relationship between intellectual capital and business performance. Service sector has been the main thrust of these studies. Most of the studies on intellectual capital deal with conceptual and measurement issues. *There are very few studies that quantitatively index both the intellectual capital and the performance of a service organization and relate the two.* Thus it is a relatively an unexplored area of research, as far as Indian economy is concerned and there exist an ample scope of work. This work is a step ahead to fill this gap.

In the present study it has been broadly hypothesized that the intellectual capital is positively associated with organizational and business performance. In this context, following are the main objectives: (a) to review the theory and empirics on Intellectual capital and
performance evaluation; (b) to identify metrics of intellectual capital and evaluate the intellectual capital in Indian service sector; (c) to quantify the performance by developing more inclusive measures of performance; (d) to examine the relationship between intellectual capital and business performance in service sector of India; and (e) to delineate the policy implication.

*On methodological plane,* performance evaluation of Indian service sector and relationship between intellectual capital and business performance has been carried out. The population of this study comprises of the entire corporate sector listed companies in Indian service sector; while ten sub-sectors of service sector in India have been selected for investigation. Study covers the period 2000 to 2012. The data have been obtained from the public data sources on company’s financial statements and income expenses reports. Intellectual Capital Performance Index (ICP), Value Added Intellectual Coefficient (VAIC) or core Competence Performance Index (CPI) has been calculated. Statistical techniques like percentage, growth rates and correlation analysis have been used. Wherever needed, appropriate price adjustments have been made.

**Main Conclusions**

Keeping in view the objectives and using the methodology outlined above, following are the main conclusions of analysis:

a) *Review of literature* indicated that, in addition to other factors, performance is a function of intellectual capital. Intellectual capital has contributed to the creation of whole new types of business and ways of doing business. Intellectual capital is positively and significantly associated with business and organizational performance. Most of the studies done are too aggregative and the relation of intellectual capital and performance is relatively unexplored, especially in the Indian service sector. There exits an ample scope to investigate this relation at a disaggregate level.
b) Various *growth parameters* as sales turnover, capital employed and value addition have been analyzed at the disaggregate level. ‘Real estate sector’ has shown the maximum growth rate of 30 percent in *Sales turnover-over* during the given time span followed by ‘private sector banks’ (26 percent), ‘trading sector’ (23 percent). While the ‘financial services sector’, both investment and general, has witnessed the negative growth rates in its sales turnover. Almost same pattern of growth has been observed in the parameter ‘*capital employed*’. The temporal analysis of growth for the indicator ‘*value addition*’, brings forth that ‘health care sector’ has achieved the largest growth of 31.16 percent, followed very closely by ‘private sector banks’ (30.06 percent) and real estate (28.94 percent), while ‘financial services sector’ has experienced negative growth rate in value addition.

c) *Intellectual capital* is a function of human capital, structural capital and relationship capital. One of the important pillars of intellectual capital is *human capital*. Private sector banks have shown a remarkable growth of 29.16 percent in human capital, followed by ‘media and entertainment sector’ (25.70 percent) and ‘health care services sector’ (23 percent). The slow growth has been observed in the ‘trading sector’ and ‘financial services sector’. Similarly the fast growing sectors in terms of *structural capital* are ‘private sector banks’ (30.52 percent), ‘real estate sector’ (30 percent) and ‘telecomm sector’ (23.79 percent). While the slow growing sectors are ‘financial services sector-general’ (-19 percent), ‘finance sector-investment’ (0.63 percent), and ‘IT and ITES sector’ (9.51 percent).

d) *Human Capital Efficiency Index* (HCE) shows the extent to which human capital contributes to the creation of value added (VA) and therewith it is an intensity criterion for the HC usage. Average human capital efficiency index is the highest in ‘real estate sector’ (16.59), followed by ‘wholesale trading sector’ (14.03) and the ‘media and
entertainment sector’ (6.05), in order. It is the lowest in ‘IT and ITES sector’ (1.65) followed by ‘public sector banks’ (1.80). This implies the IT industry either has high cost human resources or is moving down the chain of value addition. It has been true that in the beginning, the industry concentrated on body shopping, data entry or programming related objects and this is a time when high value addition lies in systems design related projects or niche projects. This calls for higher investment in training of personnel and higher investment in genuine research and development projects. Other sectors operating in low human capital efficiency zone are ‘private sector banks’, ‘hotels and restaurants’ and ‘financial investments’.

e) Capital Employed Efficiency index (CEE) analyzes how efficiently the financial capital is used and it indicates the growth potential. CEE index is the highest in ‘real estate sector’ (1.77) followed by ‘wholesale trading sector’ (1.13) and ‘IT and ITES sector’ (1.05), in order. ‘Financial investments’ sector is operating on the lowest capital employed efficiency; it is followed by ‘public sector banks’ (0.17) and ‘private sector banks’ (0.15). Sectors relating to retailing, media, entertainment, hotels, restaurants and financial services are also poor in terms of CEE.

f) Efficiency in use of infrastructure for value addition is best represented by Structural Capital Efficiency (SCE) index. The behavior of SCE is exactly in consonance with HCE; it is the highest in ‘real estate sector’ (0.92) followed by ‘wholesale trading sector’ (0.91) and ‘media and entertainment sector’ (0.83). Poor managers of structural capital usage are the sectors like ‘IT and ITES’, ‘public sector banks’ and ‘hotels and restaurants’.

g) Intellectual capital performance, which is function of human capital and structural capital, is represented by Intellectual Capital Performance (ICP) index. ‘Real estate sector’ is the leader in terms of ICP index (17.51) followed by ‘trading’ (14.94) and ‘media and entertainment’ (6.88), sectors in order. Poor index of ICP is identified
with sector like ‘IT & ITES’ (2.04), ‘public sector banks’ (2.24) and private sector banks’ (3.87). In terms of intellectual capital, real estate sector is more than eight times rich than IT and banking related sectors.

h) Overall Value Added Intellectual Coefficient (VAIC) or Core Competence Index (CPI), a sort of robustness index of efficiency, gives the cutting edge competency of a sector. Highest core competency is associated with ‘real estate’ (19.28) followed by ‘trading’ (16.07) and ‘media and entertainment’ (7.20). ‘Public sector banks’ are characterized with lowest core competency (2.41) of intellectual capital. Other sectors with relatively lower core competency of intellectual capital are ‘IT & ITES’, ‘private sector banks’, ‘hotels and restaurants’ and ‘financial investments’.

i) The temporal growth profile is an indicative of the fact that human capital efficiency has grown at the rate of 10.92 percent per annum in ‘trading sector’, at the rate of 9.98 percent per annum in ‘telecommunication sector’ and at the rate of 6.36 percent per annum in real estate sector. Sectors with negative compound annual growth rate of HCE are ‘media and entertainment’, ‘health’, ‘IT & ITES’ and ‘hotels and restaurants’ sectors. Read with earlier findings, it shows that sectors ‘real estate’ and ‘trading sector’ with high average HCE have also grown at a faster rate. But the ‘media and entertainment sector’ with average higher temporal HCE has registered a negative growth rate of -4.20 percent per annum. ‘IT & ITES’ with low average HCE is also depicting a negative growth rate. ‘Health services’ sector with relatively higher average HCE is also shrinking in terms of growth.

j) Compound annual growth rate of CEE is the highest in ‘media and entertainment sector’ (10.28 percent per annum) followed by ‘telecommunication sector’ (8.58 percent per annum) and ‘wholesale trading sector’ (5.38 percent per annum). CEE has grown at a negative rate in ‘real estate sector’ (-26.44 percent per annum),
‘financial investments sector’ (-14.53 percent per annum) and ‘health sector’ (-7.16 percent per annum). Other sectors with negative growth rate of CEE are ‘retailing sector’ and ‘hotel and restaurants sector.

k) Best management practices in structural capital efficiency (SCE) growth are identified with ‘financial sector’, followed by ‘public sector banks’ and ‘telecommunication sector’. It is negative growth zone for ‘IT and ITES sector’, ‘health sector’, and ‘media and entertainment sector’.

l) Intellectual capital performance (ICP) has grown at the rate of 10.24 percent per annum in ‘wholesale trading sector’, at 8.95 percent per annum in ‘telecommunication sector’ and at 7.43 percent per annum in health sector. The growth of ICP is negative in ‘IT & ITES’, ‘media and entertainment’ and ‘hotels and restaurants’ sectors.

m) The sectors leading growth of core competency (CPI) are ‘wholesale trading’ (9.94 percent per annum), ‘telecommunication sector’ (8.99 percent per annum) and ‘real estate sector’ (3.71 percent per annum). Sectors that are losing the core competency over time are ‘IT & ITES’ (-0.04 percent per annum), ‘health sector’ (-1.99 percent per annum), ‘media and entertainment sector’ (-3.28 percent per annum) and ‘hotels and restaurants sector’ (-0.70 percent per annum).

n) The emerging model of intellectual capital and core competency based on it is driven by ‘real estate’, ‘telecommunication’ and ‘wholesale trading’ sectors. Sectors like ‘information technology’, ‘health’, ‘media and entertainment’ and ‘hotels and restaurants’ fall in the poor core competency zone of intellectual capital. Other sectors fall in the medium zone of intellectual capital core competency growth. The much talked, ‘IT and ITES sector’ is showing the performance on the basis of financial parameters, i.e., by managing the cost and revenue; most of it has been on the basis of cost cutting by lengthening the working day, keeping the pay hikes low, higher attrition, replacing tenured labour with fresher ones and so on. ‘Health’ and ‘media and entertainment’ sectors, poorly endowed with
intellectual capital, have also followed the IT and ITES kind of model. Low intellectual capital performance and low core competency is the outcome of poor human capital, poor structural capital and low value addition production system of a sector. For sectors relating to banking, insurance, finance, health and hotel related services have partly been hit by the global financial slowdown.

_0) Performance Index_ covers three aspects of performance viz., profitability, financial status (liquidity and solvency conditions) and productivity of service sector at disaggregate level. Temporal analysis of overall performance shows that average performance has come be the highest in banking followed by IT and retail sectors. It is the lowest in 'media and entertainment sector' followed by trading and financial investments. In terms of growth, performance has grown at the rate of 11.86 percent per annum in ‘telecommunication sector’, followed by ‘IT and ITES’ (3.35 percent per annum). Sectors like retail, banks and financial investments have registered a negative growth rate in terms of performance.

_1) With Pearson correlation analysis, various dimensions and sub-dimensions of intellectual capital have been analyzed with respect to their correlation with the business performance. Significant positive inter-relationships exist within the constructs of performance and within the constructs of intellectual capital. As per business model approach, the intellectual capital and performance are positively related. This shows that, in order to enhance the profitability, productivity and the overall performance of service sector in India, investment in intellectual capital is need of the hour._

The broad conclusion that emerges from the study is that intellectual capital drivers like human capital and structural capital are positively and significantly related with the business performance and value addition of any organization and sector. It is noted from the analysis that during the last decade of the Indian service sector,
intellectual capital intensive sectors are not utilizing their intellectual capital efficiently as depicted by the indices and instead they are showing the performance on the basis of financial parameters.

**Policy Implications**

The relationship of intellectual capital and business performance of Indian service sector at a disaggregate level has been analyzed using the methodology outlined above. Following policy implications or suggestions emerge from the analysis:

a) To enhance human capital efficiency, the companies need to rise on the value addition chain by producing innovative and niche products and downsize/right-size the workforce. *This is a high time to leave low value added ventures like data entry, programming and body shopping and enter in to niche products and R&D ventures of high value addition.*

b) Research and development need to be strengthened in an organization; a separate department with independent research and development unit is need of the time.

c) With investment on innovative processes and products, new skills have to be acquired by the employees. It involves not just the learning the use of new technology by the operative level personnel. Even the managerial staff also needs training in management of technology because modernization of work technology without ensuring reasonable command and control system can lead to loss of managerial effectiveness.

d) It is not merely spending more on new technology that translates it into higher profitability but more important is that how an organization manages information technology and integrates it with business functions to achieve higher profitability. Strong management and good governance of latest information technology applications is a need of the time.
e) It is not just the process of buying the computers and software that gives performance, rather the competitive advantage from introduction of information technology stems from the organizational dynamic capabilities which are defined in terms of timely responsiveness, rapid and flexible product innovation and management capabilities to effectively coordinate internal and external competencies.

f) At present, organization needs intellectual capital that is a function of human capital, structural capital and relationship capital. To translate the intellectual capital investment into higher performance, companies need to go beyond the traditional human resources jargon. They should evolve appropriate policies to make the best use of their primary asset, i.e., human resources. There needs to be a positive interaction between information technology, skills and work organization. Adopting efficient and productive methodologies that will foster intellectual capital is need of the time.

The above conclusions and policy implications are indicative of the fact that there exists a positive correlation between intellectual capital and business performance. Our finding are exploratory in nature, there is a need to do a larger exercise, fortified with a bigger database.