6.1 CONCLUSION

As the curtains of the dawn lifted the drapes for a new era of Post TRIPS compliance, India welcomed the new world order with a lot of skepticism. This emotion reminded all of us of the times of the fear of competition from our neighbor, China. Today, a decade later, the Indian industries have allayed all these fears and proven their might in a free market economy in the presence of a level playing field to the Chinese. Over a year later, the Indian economy is allaying its fear of the threat of the Post-TRIPS fears and the successive governments are managing the process initiated by TRIPS in 1984 very successfully. As the complete process is evolving the world over, the businesses are expanding to a true global scale. This presents an extremely potent opportunity for the Indian industries to capture the world in their already proven strength in IT-ITES Services, Pharma and engineering services related industries around the world.

However, in rising to such a challenge of global expansion and competition, there is requirement of a paradigm shift in the way Indian government and industries carry out the process of governance of trade and commerce globally. The first and foremost is to identify and prioritise the highest growth areas in the new world order with a view to leverage the strengths of the Indian industry. The second is to sow the seeds of systematic growth with Industry-Government partnership. Strong governmental support in the arena of subsidies, tax holidays, training, education, judicial reforms, adequacy of professionals and policy reforms in the ministerial decision support structure are the important ingredients in achieving a resurgent Indian over the next decade.
There is need to build a National Think-Tank independent of the National Task Force for IC and Trade reforms. This is to act in a two pronged manner to regularly monitor and audit the progress of the National Task Force on IC and act as a body of knowledge in deciding the course of the future for the Indian trade and Commerce. The recommendations for Indian Industry, Government, Opportunities for knowledge industries and Industry-governmental coordination proposals have been given in the recommendations.

The need of the hour for the Indian Government and the Indian industry is to adopt a holistic view on Intellectually Managed country by intertwining of the businesses enterprise processes, governmental polity, judicial reforms, business strategy, knowledge management and IC strategy. These efforts will certainly see the Indians in the new light of attaining its Super Power-dom in the next two decades on the lines of our country’s President Dr APJ Abdul Kalam’s vision 2020.

6.2 RECOMMENDATIONS

The data collected from various primary and secondary resources has been analysed and interpreted in various chapters. Almost all chapters consist of primary and secondary data resource. The primary data captured from various knowledge enterprises and secondary data forms the basis of the recommendations and conclusions in this chapter. The applicability of these research findings has been grouped into various parts mentioned below:

6.2.1 Recommendations for the Indian Industry
6.2.2 Recommendations for the Indian Government
6.2.3 Recommendations for New Business Opportunities for Knowledge Industries
6.2.4 Recommendations for Industry Governmental Coordination Proposals
The recommendations for various agencies mentioned above in respect of Managing the Patent System, as learnt from the collection of data on various aspects of Patent or IC management in Indian environment are given below:

6.2.1 Recommendations for the Indian Industry

In the current status of affairs, the TRIPS has been implemented in the form of Patent Amendment Act 2005. This makes us fully compliant to the TRIPS accord. A large no. of issues currently plagues the Indian enterprises in respect of Patents, Trademarks, copyright and other IC. The Indian industry, in the arena of patents or IC constitutes primarily IT, ITES, Manufacturing, Pharmaceutical, Biotechnology and R&D. In the research, the major sectors covered are IT, ITES, Manufacturing, R&D and other service industries like BPO and KPOs.

With the resurgent success of the Indian IT, ITES, BPO, and other Contract Research Organisations (CROs), the credentials of the Indian industry have been proved indisputably. Along with the success and, it enjoys a large amount of confidence of its outsourcing partners (clients) from abroad. This is however the beginning of the service or product creation chain. It is increasingly evident that the BPOs are aggressively moving towards not only consolidations of their businesses but also movement of the Industry in up the Value Chain in terms of Knowledge Process Outsourcing (KPOs), R&D projects, Products and Intelligent Services sectors. Globally, the KPO pie is estimated to touch $25 billion by 2010\textsuperscript{17}. It is estimated that India would command a 60 % market share, with an employee requirements of over 3,00,000, said by a study conducted by EVALUESERVE\textsuperscript{18}, a leading KPO company. Global corporations are looking for ways and means for creating Intellectual Properties for their clients across verticals like healthcare, pharmaceuticals, life sciences, chemicals, engineering, businesses and commercial information, research and database services.
With Indian enterprises emerging as a prime destination for the IT and services sector, it clearly is an encouraging sign for the India Inc. However, as the industry matures and moves over to the newly established paradigms of global competition, TRIPS compliance, increased pressure of performance, free trade and growth overdrive, it is imminent that the Indian Industry needs to move on to a new brand of aggressive positioning of the India Inc. brand. This requires understanding of the requirements of its customers both existing and potential. There is however a greater requirement of this hour i.e. to create a roadmap for creation of a technologically advanced India fully compliant to the existing and evolving world order of the post TRIPS world. This essentially means to map the trajectory of Value chain movement of the Indian corporate and align it with the IC growth model existing worldwide. This parallelism of Value Chain Maturation with IC Value chain Maturation is depicted below:

\[\text{The NASSCOM Strategic Review 2006.}\]
\[\text{The ETIG, state of IT-ITES, The Economic Times, 29 Mar 2006.}\]
The above mentioned Value Addition Model of the IC maturation of the Indian enterprises has been evolved by the data collected in the research. Some important recommendations for the Indian industry based on the above model are given in the following paragraphs.

As the Indian industry matures, it will be increasingly called upon by its contractors or clients from all over the world to deliver world class services like KPOs, Contract Research Organisations (CROs) like Market Research, Database Search and Management Services, Molecular research, Biometrics, Nanotechnology, Financial research, Accounting models, Space and Nuclear modeling, IC management, Drafting and IC Filing and host of such services. The complete maturation of this value chain will eventually yield a model that requires complete life cycle Management of Product/Services from creation to prototyping to testing, production, marketing, sales, customer services to maintenance and eventually phasing out management. In this process, however, Indian enterprises will yield invaluable goldmine of Patents, Copyrights, Geographical Indicators, Trade Secrets, Trade Marks and other such IC that will be the hallmark of the Indian industries for many many years to come. However, the trajectory of growth of IC Value Chain
clearly depicts an incremental maturation of the developed nation’s maturation model from mere Protecting Intangibles to Leveraging full IP Potential. This is to infer that Indian industries should try to create or discover a Product or service with the End in mind i.e. not only creation of an IC in its portfolio but the complete scheme for Leveraging the full potential of its IC to increase its earnings.

BUSINESS OPPORTUNITIES: Appendix ‘A’ clearly illustrates the fact the future of business growth is in the arena of Knowledge Industries or industries with Intangible assets like all forms of IC. The collection of primary data also reveals such a pattern as interpreted in the last chapter. Thus for the growing Indian enterprises the high growth areas or industries in terms of leveraging the full potential are

a) **Information Technology (IT) and IT Enabled Services (ITES):** Most of the International corporations, in this arena have matured from producing services to product development to providing customer services to Outsourcing some aspects of their business to much cheaper yet efficient destinations like India, China, Singapore, Taiwan, Malaysia or Asia in general. However, Indian IT companies, which are maturing can think of creation of such product creating capacities as the complete life cycle of providing such services is available within the Indian Industries. From Ideas to Customer support to maintenance, Indian corporations have built zealous reputation of performance in any area. If the Industries unite under various Confederations and Associations or such objectives be created for the existing agencies, it would not be longer that India would be resurgent on the path of strong growth earnings by creating capacities, skills and IC in its portfolio. An avid example of this evolution is the Chinese Industry. Such Practices sharing experience would create benchmarks and best practices for the entire nation in handling competition, growth and exploiting its potential to its best.
b) **IT and Manufacturing:** Another formation of the Knowledge enterprises in the world over has been the growth in their portfolios of IT and Manufacturing. While corporations like Microsoft have purely focused on IT and ITES, there are corporations like IBM which have purely depended upon leveraging their product making potential with IT applications. Companies like Philips, JVC and Samsung have clearly expanded their business profiles by suitably expanding their portfolios in expansion of their products. This is clearly next step for moving of the Indian industries up the value chain and we already see some India corporate like Selectica, Videocon, TCS, L&T and Persistent already entering such spaces. However, it may be noteworthy that such companies are becoming a strong target of International corporations which tend to acquire such capabilities and capacities through various means of M&A, 100% subsidiary or even hostile takeovers.

c) **IT, Manufacturing and ITES:** A synergy of three aspects of the modern arenas of IT, Manufacturing and ITES is the clearest of all the possibilities of earning revenues based on knowledge based industries or IC creation. This is the most difficult of all choices and there are only a handful of global corporations that have been able to successfully maintain focus on revenue generation based on the Innovation-Wealth creation cycle. This is however the flavor of the season and more and more corporations are attempting to achieve synergy on these aspects. Worldwide only IBM, Sun Microsystems, Apple and some industries in EU and US dealing with defence projects have been able to achieve such a synergy. In the context of Indian enterprises in the Private sector only a handful of corporations like TCS and L&T and in the Public sector HAL and CSIR have been able to utilize such synergy. Such strategies require a clear understanding of creating
invaluable IC portfolios, huge investments and governmental support.

d) **Manufacturing:** As Indian enterprises and Government become clearer in their approach to create IC rather than only creating cheap manufacturing capabilities (like reducing excise on small cars in the current Budget), this sector would see a boom in the years to come. The subsides, tax breaks and Sops have to be created in technologically advanced industries, IT and ITES also. Such focus will not only create Indian market as the cheapest market of general goods but also the worlds most advanced market for complete Product life Cycle Management.

e) **IT:** As a sunrise sector for the Indian enterprises, these enterprises have proved their mettle the world over. It is now time to move over into the next chain of Value maturation for the Software industries. A large no. of It companies are attempting to achieve this space like Infosys, WIPRO, TCS, RMSI, JADOO etc. This is one arena where there is a lot of potential for the Indian corporate. However, there is an natural pitfall also, to stay lured into the existing arena of providing services and not moving up the value chain for creating innovative products to full the IC portfolios. This inertia needs to be broken as a complete industry and can be approached only through the collaborative platforms like NASSCOMM, CSI, CII and ASSOCHAM etc.

**POTENTIAL BUSINESS AREAS:** The research provided a bird’s eye view of the likely expansion programs or potential business arenas for Knowledge enterprises. The findings and interpretation are provided below:

- 25 % of the companies wanted to expand their business to Asia Pacific.
• 15% of the companies wanted to expand their business to Russia and EU.
• 10% of the companies wanted to expand their business to Middle East.
• 5% of the companies wanted to expand their business to India, China, Japan, Eastern Europe and South Africa.
• 5% of the companies in the sample wanted to expand their trade and commerce worldwide.

As opposed to the existing business profile of the corporations under consideration had their businesses in only for business blocks, the potential business areas have emerged as the following:

a) Asia Pacific appears to be the most prolific market for knowledge product and services.
b) EU and Russia appear to be the second most potential destination for the technology trade.
c) Middle East, Japan, Eastern Europe and South Africa are the next most favored destinations for the technology or knowledge trade for the Indian enterprises.

The Indian enterprises can take advantage of the study and suitably modify their plans to include these parameters in their strategic plans for the future. It may however be emphasized that the clear winner of all such growth will be the creation of IC and its full leveraging to maximize earnings through growth strategies based on IC management in the enterprises.

FUTURISTIC HUMAN CAPITAL PROFILES: The creation of all IC in all knowledge enterprises is majorly dependent upon the type of HR capital employed. Substantial investments have to be made in terms of getting the right man for the right job. If however, the HR policy is not influenced by the type of people required to serve the businesses of the future, it would turn
out to be a fiasco of loosing important business contracts from existing and perspective clients. The study of HR profiles of the most dynamic enterprises creating IC at a phenomenal rate has yielded two types of educational and skill profiles. These have been specially studied for its practicability in India under two headings provided below:

a) General Profile: The Indian corporations do not provide thrust to research in pure science and application areas. As against 13% of the US corporations, there are no or little PhD scholars by the Knowledge enterprises in India. It is strongly recommended that PhDs from various disciplines may be employed. The data on this aspect has been analysed and interpreted in the previous chapter. It is further recommended to increase the no. of Masters in Technology professionals to much higher levels. Thus as a best practice for hiring professional in Knowledge enterprises would be as shown in the distribution below:

![Bar chart showing distribution of HR profiles for Knowledge Industries]

Figure 6.02: Benchmarked HR profiles for Knowledge Industries
Such a distribution would eventually show up in the performance of the company’s IC portfolio. Clearly, such a HR profiling will eventually show up on various aspects of Quality and production of Patent/IC related documentation and issues of IPR process management within the companies.

b) **IC processing personnel:** The research indicates that the phenomenon of employing IC management professional is a very expensive proposition and is a highly specialized domain. Further, the corporations that have in-house departments such as Philips, INTEL, IBM and Honeywell etc can justify its expenditures as the IC generation in these enterprises are quiet high. Smaller corporations adopt a model of outsourcing such specialized and highly skilled jobs. In the case of large enterprises, the ratio of IC professionals works out to by 1:10000. This data can be employed by corporations once they start growing and producing IC of that magnitude. Also, the qualifications and experience or skill profiles of such employees and the salary expectations in Indian conditions are listed in the previous chapter.

c) **Organisational Structure and Role Of Employees Working On Patent Management Systems:** Most of the enterprises in the arena have shaped their organisation structure as shown in the previous chapter. Larger organisations tend to create such huge cost centers as they are able to afford it by the shear volume of the IC related work, while the organisations where there is lesser amount of work of IC have adopted an outsourced model of IC processing management. Supported by a few Techno-legal batteries of workers from differing domains of Engineering and Administration, these enterprises manage their IC. Thus, depending upon the size and work domain of the industry, any of the model can be applied to the Indian industry. Many such
firms are coming up closer to the innovation industry and are making a huge profit as there is an acute shortage of such firms in the Indian market. To delve a step further, India is being touted as a special market for outsourcing this specialist work by the US and EU companies as this reduce the cost by two-thirds.

**KNOWLEDGE AND PROFITABILITY MEASUREMENTS**: The central theme of such data gathering was to create and introduce the capability of Measurements to the process in creation of knowledge in order to manage the knowledge itself. Worldwide corporations employ myriad of measures to measure knowledge and profitability. The recommendations in respect of these measures and knowledge are illustrated below:

a) **Knowledge Measurements**: Most of the US and EU corporations that can be considered the powerhouses of IC generating engines utilize objective Quantitative metrics. Especially, the US corporations employ the following methods or a combination of all of them:

i. Rate of Knowledge Development
ii. Proprietary methods
iii. R&D spending.

Also, Many American and European subsidiaries offer such services in India for creation of measurement systems like the balanced scorecard method, calculation of the brand value, customer satisfaction Index, IC Quotient etc. These services can be utilized for creation of knowledge measurement systems in the Knowledge enterprises.

b) **Profitability Measurements**: Out of a wide variety of tools for the evaluation of Knowledge and Profitability in the context of EU, US and Indian enterprises, the corporations
from the US clearly steal a march over other knowledge economies in the world. Various methods in vogue have been utilized by these enterprises. While Indian enterprises heavily rely on ROI measurements due to its very nature of services sector, the American and European corporations employ multifarious techniques of for profitability analysis.

As the EU model is primarily based on products based IC portfolio, heavy reliance on the ROI model has been used. The US IC portfolio is infested with a balance of IC products and services like Customized products like LAPTOPS, computer chips etc, Trade Marks like MICKEY and MINNIE, SPIDERMAN, SNOOPY, BARBIE etc, Copyright products like software, GI like Sparkling wines and a host of services like consulting services of Delloit, Arthur Anderson, AC Nielson etc. On similar lines Indian companies must extend the knowledge and profitability measurements from pure qualitative measures to objective numerical based techniques. This is especially important as the country grows into a hub of Product manufacturing in the near future.

IC STRATEGY AND IC AWARENESS: These set of recommendations are based on the attitudes of the enterprises towards IC. The parameters included are IC Awareness at all management levels of the enterprise, Review of IC related issues like growth, creation, filing, R&D progress, revenue streams , cash flows and Ownership of responsibility by the management. These issues are extremely pertinent from the view of generation and maintenance of aim of the chief element of the strategy

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19 Resource: Research Paper on Commercialization of Patented Inventions (www.wipo.org dated 03 Apr 06)

20 Resource: WIPO survey on IP Services of European Technology Incubators.
process as “IC” along with other themes like customer focus, retention, HR and growth. Such IC strategy focused enterprises today form one of the highest revenue or margins businesses in the world. The following is recommended for implementation by the Indian industry:

a) Indian industry must increasingly focus on creating more and more IC in their company's portfolios.

b) The BOM must own responsibility to initiate, maintain and follow up IC creation, drafting, filing, maintenance, prosecution, revenue harnessing and strategy related issues. This is to state in no uncertain terms that the strategy of focusing on IC starts right at the helm of affairs and the focus must be maintained from the top for complete life cycle management of the patent or IC.

c) Worldwide, the review of IC is carried out quarterly. Some corporations in the US and EU however track and review the financial earnings out of patents and other IC on a monthly basis with a view to introduce quick changes to alter declining trends. This provides an almost real time control of the IC market dynamics. Indian companies presently do not hold much IC, however due to the nature of IT, ITES and contract based business model, these companies are reviewing their progress on milestones or quarterly or at the end of project. This is due to the customer focused approach which can be immensely beneficial, if structured in quarterly or monthly review meetings with the management.

d) Another important recommendation is to establish a coordination committee of knowledge industries for educating enterprises in the process of migrating to IC based management systems. This is essential because, all the Indian enterprises clearly took stronger interest in the questionnaire
but expressed its inability to move ahead due to lack of information on creation of systems for IC management. Most of the resources available are available at a very high cost and are available abroad only. Further, the credibility of such systems is also doubtful and lastly the systems covered abroad are molded for mostly US, EU, Japan and other industrialized nations thus leaving a lot of gap for Indian organisations to fathom. This is however a problem that cannot be solved by the industry alone. A Industry-Govt. partnership is required to weed out this problem.

e) The Awareness of the managers at all levels in the Indian industry is abysmally lower than its counterparts in the EU and USA. At lower level of management there is virtually no awareness in the managers. In the middle level the managers in the Indian industry have started slowly recognising the importance of IC in their enterprises, however restrictive in their approach due to lack of available structured knowledge in the country. At senior level also, the awareness of senior management is much lower than their counterparts in the EU and USA. Adding all the factors mentioned above, it reflects lack of Information on IC, absence of support by the Industry or government, lack of initiative and a clear lack of direction. Unless and until, a focused approach is adopted by the Indian industry and the government, we will not be able to break the threshold of growth of IC in the country. This means that we require strong support of the Government, Industry, Educational institutions, NGO and foreign collaborations to spruce up the knowledge base and the quench the thirst of the Indian industry.
INTELLECTUAL PROPERTY PROCESSES AND PROCEDURES: The data and its interpretation on the IP processes and Procedures are provided in the previous chapters. As there are only a few PDLC and SDLC standards prevalent in the manufacturing and Service industry, the interpretations can be applied widely to the industry as a whole. The recommendations for the Indian industry are specifies below:

a) Most of the enterprises working in the arena of IC or knowledge industries have concurred that the starting point of looking for filing a patent starts much before the basic prototype rolls out. This is to emphasis that the proposed IC must be captured at the time of the drawing board stage of the P/S DLC.

b) In fact, most of the corporations in the USA and EU have a System of filing ideas in the form of “Utility Patents” in which the corporations are given a cheap alternative of filing their ideas before they have actually created the product. In most of the cases these utility patents come from highly advanced and R&D focused organisations. In event of the inability to precipitate, the respective Patent Offices provide even extension for such trial periods. As the process is inexpensive, a large no. of theses corporations utilizes these facilities. This should be followed by the Indian corporate at all the stages of the Value chain of IC.

c) Unfortunately, in India, we do not have any such system. The applicant has to go through a grill of the complete patent filing procedure and spend complete money. Industry and Government in India must have provisions to similar Utility Patents in the Patent filing procedures at substantially lower cost and time in order to promote the cause of innovations.
d) All the corporations in the sample have unanimously mulled the existence of the interrelation of the IC and PDLC/SDLC processes and procedures. In as far as Indian enterprises are concerned, none of the Indian enterprises could demonstrate such an interrelation. There is thus a dire need to create an Industrial standard like the SEI CMMI, ISO or BS 7799 to clearly earmark the standard interrelation between innovation, knowledge creation, IC management and revenues related with IC. At the company level however, a similar result can be achieved by understanding the Best practices of these corporations on IC process management.

e) The IC mature enterprises have provided clear evidence of maturity of their processes and procedures related to IC management. The main processes that get modified in respect of maturation and amalgamation of IC related processes and procedure are as follows:

(i) Recruitment and Training
(ii) Appraisal
(iii) Knowledge Management
(iv) Brainstorming, R&D, Ideation
(v) Production
(vi) Marketing, Sales and Customer Satisfaction
(vii) Quality Management Systems and Auditing process
(viii) Strategy and change management
(ix) Branding and Advertising etc.

These processes get suitably altered to the new paradigm of IC management in the enterprise. However, the changes in the overall PDLC or SDLC these changes are felt profoundly and require a detailed and well crafted Change Management initiative to cultivate the spirit of the IC and innovation management in the enterprise.
TRAINING PROGRAMS ON PATENTS: The recommendations provided below and in the previous chapter outline the need of the Indian industry for understanding, awareness, creation, maintenance and moving up the value chain in the process of IC Value chain. These recommendations have been generated from the collection of primary data during the research. The prevalent training programs available in the country are grossly inadequate to fulfill the need of the industry. These programs are generic in nature and do not provide any skill creation or upgradation of the enterprise workers. Although a large no. of training programs are available abroad, they tend to have a bias of the international patent management systems, policies and procedures and are thus not suitable for implementation in our country. In nutshell, the actual requirements of the Indian corporate have been assimilated in the following recommendations of an ideal course for Indian industry requirements. The finer points from EU and US Corporation’s training programs have been incorporated in these recommendations:

a) Training on process for identification of IC or patents in the existing PDLC or SDLC.

b) Details of patents filed by the company i.e. easy accessibility of the patent capability of the company to its employee.

c) Hand holding and mentoring process on Patent search, drafting and usage of various tools in the enterprise.

d) How to file IC.

e) What are the major features of IC

f) Training every employee on concepts and facts of IC (especially patents, copyrights and trademarks).

g) Three levels of training, firstly for orientation consisting of mainly Do’s and Don’ts, secondly, Training on identification of various facets of patenting and thirdly Management Level training on details of the company policies.

h) The training for Trainers should be conducted separately by using professional agencies.

i) Training on Patent searching and drafting.
j) Availability of standard Templates for creating and Maintaining a Patent or IC Management System.

**IC OR PATENT MANAGEMENT STANDARD FRAMEWORKS:**

The research could not find any standards or frameworks in the arena of IC or Patent Management Systems in an enterprise in which the process maturation can take place for managing the intellectual wealth of the companies. This is possibly because of two reasons, firstly, the whole concept of management of knowledge and IC is probably a newer one (over a decade old) and the processes are still evolving. Secondly, as the process has a direct linkage with the future instruments of earning foreign currency, it is considered as a Trade Secret by the enterprises. The same thought was validated at the time of collection of data from various enterprises wherein, large no. of participants refused to divulge details of the IC management systems quoting organisational bindings. Thus, the evolution of such a framework can be expected to evolve over the next decade.

**MARKETING, BRANDING AND ADVERTISING:** While most of the enterprises recognized the IC as the next generation revenue generation instruments, they feel that they have not been able to make it as the central theme of the Marketing, Branding and Advertising themes. Most corporations candidly admit that they have all the intentions and have already taken adequate steps to include these arenas for future use by aspects of IC. Use of the words Innovation, Intellectual, Copyright, Trade Marks has already started in various products and services. Most corporations have included these words in their Mission Statements, processes, Training programs, Accounting and reporting, Internal reviews etc. It is thus pertinent that India Inc must reposition itself with strong IC process and procedures, strong IC protection and anti-piracy systems to create an environment for the next
6.2.2 Recommendations for the Indian Government

The research instrument has a large no. of questions aimed for managing the Patent System from the point of view of taking feedback from the corporate world in India on the existing system. The questionnaire also extracts information of the desirables by the Indian industries and benchmark the patent Management Systems with the ones prevalent in the US and EU. The requirements and inadequacies have been thus analysed and a set of recommendations have been made for improving the Patent or IC management System of our country. The recommendations are:

a) **Foreign Collaborations:** As the gap of maturity of patent management systems and patent load handling capability systems between the three nations varies a lot, the fastest and most mature way to handle this situation is to adopt and adapt the mature systems of the US and EU to the requirements of the Indian patent systems. TRIPS offer such provisions by which the developed countries are obliged to offer such help to the developing countries. Under the provisions of TRIPS, the following is stated in Article 67 on Technical Cooperation:

‘**In order to facilitate the implementation of this Agreement, developed country Members shall provide, on request and on mutually agreed terms and conditions, technical and financial cooperation in favor of developing and least-developed country Members. Such cooperation shall include assistance in the preparation of laws and regulations on the protection and enforcement of intellectual property rights as well as on the prevention of their abuse, and shall include support**
regarding the establishment or reinforcement of domestic offices and agencies relevant to these matters, including the training of personnel.'

Under these provisions of TRIPS accord, our neighbor China has already sought the cooperation of the EU for modernization of its patent offices and replicated the EU model of Patent Office and support network. In the currently renewed friendship with both the EU and USA, the Indian Patent Office can enter into collaborative treaty with the US government for modernization of its offices.

b) Automation of Patent Procedures and Electronic Filing: Most of the surveyed participant enterprises have strongly reflected their view on electronic filing and automation of patent procedures in India. In the USA and EU the respective PTOs provide electronic filing facilities and fully automated search, documentation and handling on their websites. In fact, these offices offer discounts on the electronic filings to encourage the process. A similar approach can be adopted by the Indian government by entering into a Technological collaboration with the either the PTOs, Government or even the company's that have automated such procedures. For example IBM has helped the EU PTO's processes and procedures automation for a complete electronic filing suite. A similar approach can be adopted by the Indian government.

c) Utility Patents: The EU, US and majority of the developed countries offer protection of the ideas and inventions without having to develop them for a smaller period of time and a little cost. This provision is to encourage the spirit of innovation and accelerate the process of IC development. These deadlines can be extended and the priority date can be claimed from the date of filing the Utility Patent rather that filing of the actual patent. In event of non-accomplishment of such a
deadline the Utility Patent expires without causing much financial and bureaucratic delay. In our context, due to non-availability of such a provision, the applicant has to go through the complete cycle of Patent application and fees. The fate of the Patent is decided in after the complete time and an approximate delay of about 5 years (an average time without any opposition) It is strongly recommended to incorporate such a provision in the Indian Patent Act for the benefit of the Indian industry.

d) **Services and Business Methods should be Patentable:** The US and EU corporations derive a large amount of their revenues from their registered IC through licensing and royalty payments on Services and Business Methods as these services and business methods are patentable. Universities like Carnegie Melon University (CMU) have a large no. of such processes and frameworks which have been patented draw the highest revenues from its patents like SEI CMMI model or ESCM model for management of Service industry standards. In fact most of these standards have been tested in India and India only provides the highest amount of revenues to these enterprises and organisations. Toyota Production Management process is another point in fray. The TOYOTA Corporations method of production is the process patent by the corporation and it charges royalty on its usage along with consultancy fees in hand holding organisations to implement this methodology.

e) **Tax breaks:** All over the world, especially the governments of the developed nations offer huge subsidies to Technology and R&D institutions, Industry, Government institutions to produce more and more IC. Indian government seems to be the only government which has not kept any such provision in the recent or previous budgets. It is pertinent to
notice that no industry would like to invest in newer areas of technology or IC management systems unless governmental support is provided. Dependence on FDI and FII inflow is purely to increase the wealth of the foreign players in the Indian economy. These players can always play truant to provide uneven field for the Indian enterprise. The government must take a serious note of this recommendation. It is further recommended to include such tax breaks along with the recently launched SEZ in order to promote such IC generation in the country.

f) Software must be patentable: The Indian Software and the services industry exports today stands around $ 23.4 bn, which include $ 13.2 bn from IT service exports, $6.3 bn from ITES-BPO and $ 3.9 bn from engineering services. In addition to these revenues the domestic ITES-BPO revenues were to the tune of $ 0.9 bn, IT services revenues $ 4.3 bn and engineering services were to the tune of $ 0.9 bn thus making the total Software and Services revenues to the tune of $29.5 bn. (Data from the annual NASSCOMM strategic Review on the “State of IT-ITES published in the Economic Times dated 30 Mar 2006). This essentially means that services sector is the highest earner in the revenues for the Indian economy. Essentially, the software protection comes under the preview of the Berne convention i.e. is protected under the copyright law. The copyright law the world over does not offer a very strong protection and is the main concern for the Indian Software Manufacturers. The Patent Act 2005 initially offered Patents to the software product and services but the same facility was withdrawn by the Indian Patent Office. This facility has not been deliberated or restored so far. It is strongly recommended that a stronger protection under the Indian Patent Act may be provisioned to the Indian Services industry rather that withdrawing the provisions of the Patent Act.
in Toto. Also, stronger Copyright Law provisions may be bargained for in the Draft Substantial Patent Law Treaty discussion being held at WIPO, Geneva for protection of the Indian services industry.

**g) Min. Of HRD, Universities, Training Institutions:** There is a dire need in to step up the gas on creating awareness amongst masses on IC, training managers at all level in the Indian industry on all aspects of IC management systems. The desirables for the course contents of the Indian industry has been mentioned above. These may appear only a few lines but are huge subjects to recon with. In the research, I did not come across a single courseware in India which can offer me hands-on training on filing, drafting, Patent search or even defending. The way we in India are approaching the problem is totally need based and ad hoc. There is a dire need to educate the Indian student of the requirements of IC, Awareness to be spread and clearly create a new brand of professionals which understand the complex requirements of the cross-disciplined Patent management system. All course curriculums in our country must provide varying degree on managing the patent system for generating awareness to producing seasoned professionals for taking on the Patent management load of the world. The areas covered in the ambit of Patents and IC are all the fields of education, from Science and Technology to Fine Arts, Paintings to Services to Chemical, Biotechnology, Pharmaceutical to Educational services, management to basic education to traditional knowledge etc.

**h) IC Infrastructure Building:** The Indian Patent Office on an average takes 5 years and the filing fees approximates Rs 50,000/- . Although, the fees is one of the lowest in the countries polled so far, it is the duration to grant a patent, Infrastructure and lack of responsiveness of the Patent Office,
that makes it is extremely slow office. It is highly recommended that the infrastructure in terms of electronic filing be put in place, online Query Based system be introduced and the time of grant of a patent be reduced significantly. In the process of National Infrastructure Building, it may be noted that the entire system must be created to cater for management of the entire Patent or IC Management Life Cycle. This means that there should be sufficiency of professionals, lawyers, Judges, administrative machinery should all be well educated and proficient in handling patent and IC related issues professionally.

6.2.3 Recommendations for New Business Opportunities for Knowledge Industries

The post TRIPS era has not only brought a host of problems for the Indian environment, it has also presented it with a large no. of opportunities. The world over, the patent or IC processing costs are phenomenally high. On an average a US patent costs $12000, a European Patent costs $15000, a Japanese patent costs $120000 with an average maintenance fees of $5000 against patent filing fees of Rs 50000/- i.e. approximately $1000. This gives a huge opportunity to our country if coupled with the success of our BPO movement. If these costs and recent success in servicing outsourcing jobs is combined with the huge opportunity of a $25 billion market opportunity of KPOs, it can auger well for the Indian industries. The research has clearly brought out willingness of 100% organisations to be a part of this growing requirement. These corporations which have already established infrastructure to manage the complete life cycle of IC management are also willing to outsource such jobs to the Indian enterprises. However, there are certain requirements that need to be fulfilled before these corporations will have enough confidence to entrust the Indian KPOs with their Intellectual Capital. Various such requirements generated during the course of study are outlined below:
a) Guidelines adopted by outsourcing company to outsource work to Patent attorneys, Search agents, examinees etc. These guidelines have been consolidated and presented below as a singular guideline taking the common and best approaches of various corporations:

(i) Only credible Attorneys and search agents will be hired with a trusted market reputation. In this process, the credibility can be judged from the no. of patents granted and filed by the agency.

(ii) Team of employees that it possesses, their qualifications, background and reputation.

(x) Experience and knowledge of Search tools and support infrastructure.

(xi) Fees and volume discounts offered.

(xii) Comprehensiveness and confidentiality.

(xiii) Quality of patents and broad patenting experience.

(xiv) Non Disclosure Agreements (NDAs).

(xv) Data Protection provided both for onsite and offsite locations.

(xvi) Security policies followed by the KPO.

(xvii) Timeliness and efficiency.

(xviii) Type of Patents in the similar line of business.
b) The next part reflect on the opinion of the corporations that participated in the research on outsourcing patent work to Indian KPOs, the advantages and disadvantages these companies see in the process. The opinion of these corporations on outsourcing is consolidated below:

(i) Most of these companies feel that the idea is quite appealing, as it will offer great cost cutting advantages.

(ii) Even companies with established systems of patent management feel that the idea of outsourcing is quite appealing as they can outsource some part of the fluctuating load to these KPOs.

(v) The cost advantage can be further added with good quality work by such specialty organisations.

(vi) It offers great advantage because the volume of patents or IC does not justify any investment in permanent resources. Thus even the smaller corporations in the US and EU are very keen to outsource work to Indian KPOs.

c) The final recommendation in this respect was related to determining the potential advantages and disadvantages of outsourcing from these corporation’s point of view. The responses are consolidates below:

(i) The liability and accountability of the Mother Company reduces thereby freeing management
focus on improvement of patent quality, efficiency along with minimum liabilities.

(ii) The skill and expertise levels need to be scaled up to those required in EU and US.

(iii) More than just cost advantage, this process will offer expertise to implement these systems from inception of an idea to finally maintaining a patent in the enterprise.

(v) For some companies the process of outsourcing is not cheaper but will certainly build security in giving right job to right hands.

The India Inc. is clearly at the brink of a $25 billion (by 2010) opportunity. If our country and its industry prepare systematically work hand in hand and draw out plans for fulfilling the recommendations listed above.

6.2.4 Recommendations for Industry Governmental Coordination Proposals

The TRIPS might have imposed a greater challenge for the Indian industry and the government, but has certainly brought them working closer to solve various issues related to globalisation, protection of IC, requirements of subsidies, legislation and coordination at the international level. In order to seize the opportunity of the outsourcing and face the challenges of the post TRIPS compliance issues, it is pertinent that a roadmap for improving and capturing the business opportunities be drawn. The following is recommended:
a) A Government-Industry Task Force may be formed with coordination group representation from concerned ministry and the related knowledge industry associations.

b) These coordination groups may be allotted with clear-cut objectives, responsibilities and deadlines may be drawn by the Industry-government coordination committees.

c) The Task Force may work under the leadership of the PMO or any independent body with experts from all over the world.

d) The objectives thus set should provide a quarterly report to the Task Force and credible improvements, slippages, requirements of more regulation and such requirements be brought to fore. These requirements may be finalized and discussed with the concerned ministerial representatives which are already a part of the Task Force sub committees. In event of special requirements like IC processing upgradation proposal finalization, help of Department of Science and Technology may be brought in or for proposals on educational matters Ministry of Education may be brought in for the finalization.

e) While the task of adopting the mature technology for modernization of the Indian Patent System is quite complex, the maxim "Behave Internationally, Act locally" must be adopted in spirit. This is to pay emphasis on increasingly provide focus on adaptation of local requirements. Certain best practices and requirements of the Indian and International corporate houses have been enumerated above and also covered in the previous chapters. These requirements must be absorbed in the requirement generation or Terms of Reference of the Committees.
f) One of the activities that can be implemented at the earliest is to have the Patent Guidance Offices and IC Information counters at newly launched SEZs. The government must announce subsidies and tax benefits to enterprises producing IC in R&D, Pharma, CROs, Software products, Trade Marks, GI Service Marks and Trade Secrets etc. The above-said benefits must be made directly proportional to the economic value of the patent and the benefits derived by company from it.

g) To immediately support the knowledge industries on IC awareness and Patent and other IC drafting, filing, search, registration, prosecution and maintenance related issues, an Industry-government sub-committee must immediately collaborate with experts from Ministry of Commerce for conducting a course on IC awareness and management of knowledge with a clear strategy based on approach on IC.

h) Entrust professional QMS bodies like the BIS to evolve standards on maturation of IC in the Indian industry by providing a Maturity framework on the lines of ISO 9001:2000 or BS 7799 or Six Sigma for maturity of processes in the PDLC, SDLC and Services framework.

i) Organise a Body of Knowledge from reputed alumnus from institutions working in the arena of Patent and IC management systems like IIFT, RIS, National Law University, DSE, JNU and other prominent institutions in the country. This body should work under the Ministry of Commerce and should be independent of the Industry-Government Coordination committee. The main task of this committee should be as follows:
(i) Audit of the reports given by different sub-committees and provide it feedback on its strategic focus for implementation of its Terms of reference.

(ii) Provide the backup of a strategic Think Tank by providing data and support on Policy making, Judicial reforms, Educational reforms, futuristic modeling etc. This should be accomplished on the basis of the requirements of the enterprises published above and many more ministerial or industrial reports if any exist.

6.3 Options for the future

As the arena of managing the IC is in the stage of evolution, it holds tremendous potential for research and development. Majority of the areas covered in the research represent the starting point for collection of data in the context of Indian or developing countries. This data needs to be collated from much wider resources. It can also be assumed that as IC systems gain wider acceptance and permeability into the developing economies, more and more data will be made available to the research bodies. There are however certain arenas which require more attention that others, few such critical areas are enumerated below:

- **Economic Value of Patents**: As patent or IC assumes importance in the arena of modern age vehicle of revenue maximization, this area represents the highest determinant instrument of financial credibility. In developed countries, banks and research institutions regard this as an instrument which can be kept as collateral for borrowing loans from financial institutions. However, these techniques are highly subjective and have varied parameters for measuring the value of the
patent or the IC. These techniques may be developed and standards may be evolved in its usage towards knowledge industries.

- **Patents or QMS frameworks:** Presently, there are no standards or frameworks in this arena which allow the IC processes and procedures to mature in a structured manner. Unlike other areas like manufacturing, Quality, Software, Customer care, Measurements and testing etc, there are plenty of standard frameworks like ISO 9001: 2000, ISO 17025, SEI CMMI, SEI PCMM, Six Sigma, CRM etc. These frameworks act as structured catalysts in maturing the organisational processes maturity. There is a dire need to evolve such standards.

- **Best practices:** As the systems on IC evolve, it is required to create databases of best practices on issues related to IC like Drafting, Searching, Automation, Filing, Drawing, Competitive and Landscape analysis etc. These data should be stored in the form of Web enabled applications that can be easily shared on the internet.