In the previous two chapters we had analysed the results of knowledge management survey and expert opinion (Delphi). In this chapter, a discussion of different implications of findings is attempted.

6.1 The stage of knowledge management in our context

It was observed from the regression analysis as well as simulation exercises, that in our context, the knowledge management function is significantly determined mostly by three factors, viz., knowledge identification, eliciting knowledge and knowledge management infrastructure. Of these, eliciting knowledge is highly significant and the other two factors are moderately significant. In the knowledge management system implementation, these three activities form the initial activity set (primary activities). This characteristic conveys to us that our knowledge management system is in the initial stages of implementation. Also, one of the findings of the Delphi analysis of the present study is that knowledge management is in an evolving stage. Thus the Delphi finding is in agreement with the above observation.

6.2 Advanced communication facilities accelerates knowledge management

Information technology and communication infrastructure occupy key positions in the development of knowledge system. In fact, from the determinants analysis of knowledge management we have attempted, advanced communication technology is found to have a
positive impact on knowledge management. Organizations that have better infrastructure for communication perform well in managing knowledge. The point revealed is that implementation of advanced communication technology will contribute to better knowledge management. Intranet and Enterprise Information/Knowledge portals have become the standard vehicles for knowledge push and knowledge pull. A point we observed from the analysis is that organizations that have just adequate networking infrastructure fall short in knowledge management performance, because of minimum scalability aspect. In the Delphi study also, it was pointed out that lack of networking as one of the main problems for knowledge management in India. In this context, IT organizations have to augment its communication infrastructure. We know that the percentage of networking segment in the total value of IT industry in India is around 4% only. This has to go up significantly for knowledge management to succeed in our country.

The enabler role of information technology for knowledge management was a point re-established in our study. The researcher hypothecated this approach based on the literature review, and the study validated this fully. The expert opinion study has also supported this viewpoint. Information technology can enable effective knowledge management. In our survey also, all the organizations which are implementing knowledge management systems are found to have realised the importance of IT infrastructure and have invested in hardware and software, with varying degrees. It was observed by experts that knowledge management activities in our context are not severely affected by the lack of IT infrastructure, as this is not observed as a high bottleneck that is impeding rapid strides in knowledge management.
6.3 IT companies should embrace KM for developing competitive edge

We are witnessing a revival in the IT industry in general after the global slowdown in 2001. All the major IT companies have reported good results and they are expanding their operations. The leading contributor again is software exports. With the presence of operations of leading multi-national IT companies in India, the Indian IT (software) companies are poised for an accelerated growth. The software exports from India are continuously rising and this is expected to touch 80 billion USD by 2008, from the last year's figure of 7.2 billion USD. The point of interest is that Indian IT companies are expected to go up in the vertical value chain, without giving up its current strong segments. In this context, from a knowledge management perspective, the thrust of IT companies have to be on innovation. We have already observed that knowledge development activity is not a significant determinant for the knowledge systems in India. Thus it is high time that Indian IT companies have to perform well on knowledge development by investing more on research and development activities.

6.4 Organization culture – the major hurdle for knowledge development

Different studies reviewed by the researcher have highlighted the significant role for organization culture on knowledge management. The survey analysis revealed that organization culture is not a significant factor in our knowledge system in its infant stage. The finding from the Delphi analysis corroborated this. The experts opined that lack of favourable organization culture as a significant bottleneck, which could decelerate the pace of knowledge management in Indian IT firms. Delphi analysis also specifically
noted that knowledge management culture is yet to be evolved in India. This aspect need to be addressed on high priority by the top management of IT companies.

Research and Development investment in terms of national income is close to nothing in our developing context, whereas with a high national income base, the R & D investment is fairly significant in advance countries like Switzerland (2.73% of GDP) and US(2.68% of GDP)\(^4\). Meagre R & D investment can facilitate only less knowledge development causing negligence of knowledge management. However, with globalization, the trend is changing. Private firms have started investing more in R & D, especially in the context of competency in process/product patents.

In the survey, questions were covered on knowledge development aspects, encompassing R & D aspects. Most of the responses from firms in terms of scale were very weak, making clear that their efforts in R & D are in a low key. This once again substantiates the lack of organization culture as far as knowledge development is concerned.

In the case of IBM (as covered in Appendix I), the knowledge management system was built on a sound platform provided by active involvement of top management. The organization culture was revamped which provided the base on which the knowledge management infrastructure could be deployed. IBM, with its headquarters at New York, with some extended centres covering India, spread their knowledge development system globally, which should be viewed as their own. With this we cannot claim that our IT firms in general have got an organizational culture that facilitates R & D. It is high time that IT firms of India develop an organization culture of its own for knowledge development/management.

This contrast of phenomenon between IBM and the information technology firms in our general context is because of the lesser focus on knowledge development by the latter as
mentioned earlier. One of the points that have come out of the expert opinion study is the necessity of Indian IT firms to work closely with advanced organizations of the world in the new global set up. Strategic alliances between Indian IT firms and global business leaders should take place and this can lead to rapid change in organization culture, besides knowledge transfer and quick competency build-up.

6.5 Specialised KM teams essential for fast KM implementation

The presence of dedicated team for knowledge management will lead to accelerated implementation of knowledge management. Designated roles, like Chief Knowledge Officer (CKO), Knowledge Director, Knowledge Manager, and so forth exist in advanced organizations in the world, which have performed well in the knowledge management system implementation. The opinion from experts was that absence of dedicated team for knowledge management as a bottleneck for fast implementation of knowledge management system. The Delphi study has also supported identification of internal resource for such specialist positions.

6.6 Development of intellectual capital through knowledge management

As we have noted in Appendix I, terms like “human capital” and “structural capital” are used to distinguish the provenance of knowledge assets, or types of intellectual capital. What is of relevance in our context is the role of knowledge management in the growth of intellectual capital in an organization.

The human capital can be divided into more capital embedded and less capital embedded (the more capital embedded correspond better educated/trained/skilled especially in highly competitive capital abundant centres). The former is more exceptional and
knowledge-powered and has very high intrinsic value. The organizations which employ such capital (more embedded with capital) definitely go benefited; in fact such organizations got embedded with more and more capital in a cumulative way. Usually an organization which employs better human capital also develops more structural capital like hardware and software and not the other way around (in general).

The knowledge development transformation in organizations triggered by the human capital, will take a definite gestation period to bear fruits on the structural capital. Human capital based knowledge management programs will amass more and more structural capital – creation of more patents, products, processes and customers which can be owned by the organization. The net result of this reverse embedding, embedding of knowledge into the organization by extracting them out of the embedded form in the human capital - is the generation of “Intellect properties”, viz., goodwill, technology and core competence. In the context of our discussion, for the knowledge revolution inside the organization to take place, we would need this high value type of human capital. The best way to create this would be by changing the employee mix, by bringing in more capital embedded knowledge workers.

We may take the number of highly qualified knowledge workers as a proxy variable for the more capital embedded knowledge workers in our study. We have observed in the simulation exercises the impact on knowledge management system by this variable. The knowledge management system is found to be highly responsive and flexible to the variations in the number of highly qualified knowledge workers. This indicates that the knowledge management system is amenable to fine-tuning using this variable. Besides, it has been observed that organizations need a very sound knowledge base to induce marked improvements in knowledge system with increase in knowledge workers. From the above analysis it is explicit that in a very competitive global set up, the fine-tuning of
an organization can be done effectively with the employment of more capital embedded knowledge workers.

India is famous for brain drain; for instance our IIT products are attracted by foreign enterprises. By this, our human capital development efforts are not favouring our own knowledge development process. It is high time that Govt. of India take appropriate steps for countering this ever increasing brain drain from our country.

6.7 Relevance of Indian culture on knowledge management

Development of knowledge badly requires a proper environment. In Indian culture, our forefathers used to highlight the importance of knowledge (Vidhyadhanam Sarvadhana Pradhanam) and stressed the importance of concentration (through techniques like Meditation/Yoga) for developing knowledge. In the present curriculum of Europe and US, they have started giving Meditation/Yoga to students with a vision of creating an environment for knowledge development. It is high time we invoke the knowledge worker culture in our firms to become globally competitive. Scientists/Innovators in large numbers, including our present President Dr. A P J Abdul Kalam used to highlight the spiritual aspects for developing vision for sustainable development in our country.

The expert opinion has underlined this important role of our traditional techniques for knowledge management and its application for knowledge workers to evolve a knowledge worker culture. Our Indian philosophy which looked at things holistically, have prescribed certain ways of life which is essentially knowledge development oriented. Yoga and meditation which hones the intellectual, mental and physical prowess of individuals is as relevant in today’s highly competitive world as it was centuries ago, if not more.
Indian IT organizations can take a leaf out our age old proven systems and create the environment for knowledge development in their organizations. The spiritual base for these will accelerate the mind and the body of the knowledge workers and in turn the organization as a whole. If the western managers can look towards the Indian philosophy, there should be no reason why we should ignore this invaluable treasure relayed to us through the generations.

6.8 Accountability through timely knowledge audit

It was observed in the Delphi analysis that experts were more or less unanimous in suggesting knowledge audit in IT organizations. Even though many companies in the world are following annual knowledge audits, we recommend shorter span for the same, because today changes take place all round at mind-boggling speed. The knowledge gap becomes wider and wider at a staggering pace, much faster than was happening earlier. The knowledge audit is benchmarked against the knowledge gap and therefore, more frequent knowledge audits will be necessary.

Like any other audit, an important benefit of knowledge audit would be the accountability factor. Top management, knowledge management team and whole organization will have to perform on the knowledge management front against the audit standards.

6.9 More thrust on knowledge engineering needed

As discussed (in Appendix I), knowledge engineering, an integral part of knowledge systems captures the thought processes of experts and embodies them into knowledge-based or expert systems. We have observed in our study that organizations in our context
seldom make effective use of such expert systems, which they could have efficiently employed in problem solving situations where availability of experience based knowledge is critical. Indian information technology firms need to give more thrust on the application of this advanced technology available from their own backyard. Not only is this the best insurance against the ‘knowledge walkout’ phenomenon, it also ensures application of the in-depth expertise and utilization of continuously updated knowledge constructed using consistent principles.