SUMMARY and CONCLUSION

This research study is an exploratory, case based research on the impact of knowledge management on medium-sized IT companies in Eastern India. We found this study to be a fascinating journey whereby we had the opportunity to study first hand the impact of knowledge management on IT companies in Eastern India and their impact on both, medium-sized companies as well as the large, multi-billion dollar companies like Infosys and Wipro. We found that the large companies used KM for business growth on a regular basis with a dedicated KM research team in place. On the other hand most medium-sized companies, because of lack of knowledge or lack of resources do not use dedicated KM solution for their companies. But most medium-sized IT companies used some form of knowledge gathering and dissipation process where they may or may not use the term knowledge management.

To conclude this thesis, we first draw conclusions from the literature study, the pilot study and finally, the main study. We then discuss what implications these conclusions have. Finally, we will discuss the further possibilities from this research study for researchers.

Conclusions from the literature review
In our literature review we studied several books and papers related to KM and their impact both domestically as well as internationally in several business areas. In the literature review We categorize our literature survey by defining knowledge; defining knowledge management; applications of knowledge management; implementing knowledge management and caveats in the same;
measuring impact of knowledge management; study the impact of knowledge management on IT industry in India and the world; study the impact of knowledge management on non-IT industry in India and the world; rewards, recognition and new advances in the field of knowledge management; a brief note on action research; and a brief note on learning organizations. From this literature review we will analyze the value extracted from the literature review:

Knowledge: The term knowledge is defined in the Oxford Dictionary and Thesaurus (1995) as: “awareness or familiarity gained by experience (of a person, fact, or thing)”, “person’s range of information”, “specific information; facts or intelligence about something”, or “a theoretical or practical understanding of a subject”.

Knowledge Management: Thomas Davenport has defined it as “a method that simplifies the process of sharing, distributing, creating, capturing and understanding of a company’s knowledge”.

Applications of knowledge management: Knowledge-driven business enterprises are focusing on ‘survival activities’ by operational excellence and ‘advancement activities’ through innovation for competitiveness and balance between these two for growth and applying these strategies for succeeding in this hyper-competitive business environment.

Implementing knowledge management and caveats to KM: A successful KM program needs steps like: Value proposition, Strategic alignment, Organizational structure, Managing performance, Cultural sensitivity, Technology, Knowledge creation, Knowledge structure, Knowledge review, Knowledge reuse, Knowledge base vitality and finally environmental scanning.
The caveats to KM mainly stems from cultural barriers like in Asia it is not the culture to share knowledge as they feel that knowledge is power and sharing the knowledge will result in dilution of their power.

Measuring impact on knowledge management: The knowledge audit should mainly measure – Awareness about the KM initiative in the company, Behavior of the employees including the ability to absorb and assimilate the KM tools, Outputs which are expected out of implementing the KM in an organization, expected Outcomes after investing in KM by the organizations.

Study the impact of KM on IT industry in India and the World: The impact of KM on an information technology company can be in several forms – Democratization of knowledge, Iterative improvement, Rewards and recognition to motivate employees to adapt KM, Involvement of the customer in this KM process so as to ensure customer buy-in and finally, flatten the hierarch so as to ensure that KM is accessible to all

Study the impact of KM on non-IT industry in India and the World: Our study found that the impact of KM has been profoundly felt in several industries like – Telecom, where KM is used primarily as a tool to achieve strategic business objectives through an integrated set of initiatives, systems and behavioral interventions; Education, where the benefits of KM are apparent in the research processes, the curriculum development processes, student and alumni services, administrative services, and strategic planning; Business networking, knowledge management is always a collaborative management and without collaboration and networking among professionals KM efforts will not succeed, it also strengthens participative innovations among like minded professionals; Human Resource
development, KM helps to initiate a drive where it needed to tap the tacit knowledge of its experienced workforce which is an asset and would provide a competitive advantage over its competitors; e-Governance based on six principles like Undertake knowledge audit, Create knowledge, Capture knowledge, Store knowledge, Use knowledge, and Review knowledge is developed; Marketing, KM enables everyone to be an expert – or at least to locate quickly those who are experts - and so enables firms to live up to their clients’ expectations; Product development, knowledge management argues that significant shifts take place in how knowledge is understood between these accounts so that what begins as elusive, oral, improvised and social becomes increasingly presented as encodable in a structured database, countable, auditable, and individualistic; Small and Medium Enterprises, KM research adopts the case study method to assess critical sources of innovation and determinants of e-Knowledge Networks (EKN) and how they can be leveraged to accumulate innovation capacity to the decision to implement an innovation management in the context of the high-tech SMEs; Earthquake risk, this necessitates all round preparation in knowledge management that would result in preparedness to challenge any disaster and readiness to tackle the after effects of it; NGOs, KM gives the framework provided guidelines to characterize factors that influence organizational knowledge management; knowledge manipulation activities (processes) and organizational knowledge resources; Grocery industry, this article considers the value network of the Finnish grocery industry, a network where the web of relationships between two or more companies creates tangible and intangible value through complex and dynamic exchanges; Winery, this paper discusses the positive influence that knowledge creation exerts over organisational performance in relation to collaborative learning environmental and organisational uncertainty
Recognition and new advances in the field of knowledge management: The global Most Admired Knowledge Enterprise (MAKE) program is a new development in the field of knowledge management and was started in 1998. This award was developed to identify and recognize organizations that are leaders in creating and driving knowledge strategies. There are also several articles on the new frontiers of knowledge management such as conversion of textual data to technical knowledge, importance of making knowledge visible, personalizing knowledge delivery services, diversity of knowledge artifacts used for knowledge delivery and impact of the ubiquitous knowledge environment.

Action research: action research is “learning by doing” - a group of people identify a problem, do something to resolve it, see how successful their efforts were, and if not satisfied, try again.

Learning organization: Harvard Business Review defines a leaning organization as "an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights”.

Pilot Study: A pilot study was conducted in 2007, in the eastern region consisting of Kolkata, Bhubaneswar and Ranchi cities. The total number of companies surveyed was 8 out of which 7 responded, the breakup of the respondents were Kolkata 4 companies, Bhubaneswar 2 companies and Ranchi 1 company

The learning from the literature review are: KM can determine tangible business goals, knowledge audit is important, knowledge management can result in quality improvement, knowledge management also reduces process time, KM needs top
management buyin, KM infrastructure needs importance, employee incentives, tangible business outputs

The learning from the pilot study are: KM helps in pre-sales, reduction in customer service time, quality improvement using KM, reduction in process time, top management buyin, infrastructure, incentives for the employees, tangible business benefits and one-to-one interaction for knowledge sharing

Conclusions from the main study
We analyzed twelve case studies based on twelve medium sized IT companies in Eastern India, mainly in Kolkata, Bhubaneswar and Ranchi. The IT companies covered software, hardware and logistics companies. The study was to find the impact of KM on medium sized IT companies in Eastern India. The main method of data collection was a personal interaction with the officers of the organizations and getting a questionnaire filled based on the answers given by these officers. The study was carried out in two phases spread over one year, so as to study the KM program over a period of time. We studied the impact of KM on these companies and tried to connect common impact areas in these companies. The study found that the main impact areas were:

- New product development: Faster product development, new applications are found for non-performing products, absorption of latest technologies by employees
- Sales: Good monetary returns, monetary benefits is high
- Quality: ISO certification achieved, better technical infrastructure, better absorption of data coming from various sources
- Marketing process: Increased lead generation, better networking with professionals (helps in lead generation)
• **Strategy formulations:** Competitive pricing, quick delivery to clients, branding
• **HR policies:** Attrition has been arrested, knowledge reuse in critical production, behavioral change in workers, training of workers, knowledge transfer, knowledge upgradation, theory to practical approach, measurement of domain competence, retention of domain knowledge

**Implications of the Findings**

We think that the conclusions of this thesis can have implications for the theory of learning information technology companies, as well as for practical work with knowledge management initiatives in companies.

The theory of learning information technology companies should acknowledge organizational issues in deploying knowledge management initiatives. This study argues that the field of learning information technology companies should focus more on tailoring knowledge management tools to users than pursuing technological solutions like infrastructure like internet or intranet. There is a large potential in getting existing infrastructure into wider and more effective use. Companies can benefit more simple knowledge management tools with low implementation cost.

**Limitations of this study**

The total sample size is 12 medium sized IT companies in Eastern India. This number may seem small but we have to understand that the penetration of knowledge management as a field of study as well as its implementation in companies, especially IT companies is quite low. Secondly, out of the more that
two hundred registered IT companies, both big and small only a small fraction of them are actually operational. Hence we feel that the sample size of 12 is adequate for research and the findings can be relevant for the entire medium sized IT companies in Eastern India.

Another limitation has been the culture of Eastern India where knowledge is power and professionals are not forthcoming about their company’s processes. Also many companies do not want to portray an image that they are not tuned to the latest technologies and hence either delay or deny information.

Lastly, we have used Pattern Matching approach. We could have used quantitative analysis techniques like regression analysis, perceptual mapping and multi-dimensional scaling. However, empirical survey was not possible through 12 sample points and hence we did not go through quantitative analysis.

**Further Work**

We now present possible further work in this area that could contribute to furthering knowledge in this exciting field:

- Our study was focused on impact of knowledge management in medium-sized IT companies in Eastern India. It would be interesting to expand this study to include all types of IT companies ie small, medium and large and study the impact of knowledge management on all of them and bring out the difference if any in their impact areas
- This study opens up the research possibilities of an empirical study using different regions of the country which will bring out the regional variations, if any
• This research study was conducted between the years 2006 – 2008. It would be interesting to study if there has been any qualitative shift in the impact areas post 2008 since the field of knowledge management is growing very fast, especially in these two years.

• The later half of 2008 has seen the world slip into a deep recession which was compared to the great depression of 1929. It would be interesting to note if the impact of knowledge management on medium-sized IT companies in the world was enough to shield those companies from the devastating effects of the recession.

• Another research possibility can be the study of ‘action research’ in Indian companies and the number of learning organizations in India and whether the use of knowledge management helps in perpetuating a learning organization.

• A final interesting research would be to do a quantitative research on this subject so as to bring out the results in a more precisely and to ascertain whether our conclusions are applicable.