CHAPTER – 9

CONCLUSION AND FUTURE WORK

9.1 Conclusion

This research has made a sincere attempt to address the challenges in handling data explosion of the modern digital business world. It also shows a suitable machine learning approach to convert the event log data into a business process model. It employs inductive learning method, which observes the business environment and learn from the real world examples. For the practical approach the motor insurance data has been used.

The reason for using motor insurance data for process discovery is that, motor insurance data has been well structured and well defined. These types of well-defined insurance data are technically referred as Lasagna process. In contrast Spaghetti processes are not well defined and well-structured and it demands data preprocessing. Data preprocessing includes data cleaning, data transformation, data integration and data reduction. Involving in data pre-processing will lead the research into out of focus. Hence Insurance data has been used as the source for practical approach.

One more reason for using motor insurance data as a source for this research is that, insurance is the fastest growing industry in India and the data growth is massive. The need and opportunity for process mining in motor insurance sector is immense.

In process discovery, selection of model notation is entirely dependent on the nature of the process. Models using Petri net notations are broadly accepted as the effective one. From the perspective of business understanding BPMN notations has been generally preferred. To carry out the analysis on the process the open source process mining tool ProM 6.2 has been used, which is the leading process mining tool kit. ProM 6.2 accepts input either in MXML or XES standard.

IEEE task force on process mining has adopted XES as the official standard at the 2010 annual meeting. Fluxicon-Discover (disco) is a powerful process miner used to analysis the process model from different dimensions and levels.
9.2 Future work

As mentioned in earlier chapter processing mining itself is relatively a young research field hence it needs many more contributions for its evolution. IEEE has published a process mining manifesto and formulated a process mining task force to promote research, development, education, implementation, evolution and understanding of process mining. The process mining task force is functioning to standardize the activities related to process mining like XES and event log standardization.

In this research work machine learning approach has been used for model discovery, even though several notations are available for modeling. This research has made an attempt to develop a personalized model aimed to brings more clarity, transparency and suitability. It may be noted that the model generator has taken input only from the trace table but not directly from the event log. The trace table has been so far generated manually. Machine learning is the hot cake in the field of research in computer science. In future model generator may be developed in such a way that, it is capable of generating the trace table on its own from the event log and then generates the model.

This research work utilizes the motor insurance data to analysis the turn-around-time (TAT) involved in the claim process. Further the same motor insurance data can be used to quantify and analyze the cost involved in the claims settlement process. The resource perspective can also be considered. Man-power efficiency and duplication of man-power can also be analyzed. Using this, multi-tasking of the available resource can be established.

Insurance is a vast industry. Similar to motor insurance health insurance can be considered as a potential domain. In India, only 20 – 25% of the population is covered with health insurance. Hence all the insurance companies are focusing at increasing the sale of their health products. As a result the claim process processing and settlement has to be systematic and streamlined. Process mining could be of great use to the insurance industry in the health care domain.

In this research work, the disco tool is used for converting the CSV file into the desired MXML / XES format which is compatible with the ProM tool. The disco tool is very powerful, user friendly because of the graphical user interface. The future work lies in the development of an error tolerance disco tool. In the ProM 6.2, the available plug-ins are generalized. There is a scope for generating customized models and unified notations.