CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENTS

In this thesis, an automated decision making system for analysis of apparel manufacturing and sales has been proposed. This decision support system has been developed by getting the feedback of different customers including seller, buyer and also the experts to make effective conclusions. The thesis work consists of two major areas namely manufacturing guidelines and sales analysis. The combination of these two are like two sides of a coin and hence provided increase in success rate, reduction in manufacturing time and increase in profit with respect to the manufacture and sales of apparels.

6.1 CONCLUSIONS ON MANUFACTURING PARAMETERS AND CONFIGURATION

In this work, manufacturing data were collected and were used for sales analysis. It was found that the delay in manufacturing was not able to meet the demands in sales during festival seasons. Therefore, the manufacturing industry has to increase the productivity with optimized resources. For this purpose, key success parameters have been identified in this work for the success of apparel manufacturing industry. Moreover, the analysis was carried out using actual data, questionnaires, statistical techniques and data mining techniques. From the analysis carried out in this work, it is observed that the proposed key success parameters have a significant impact on the apparel manufacturing industry in order to reduce the manufacturing time, optimize the resources, enhance the quality and
increase the quantity of items manufactured which will lead to profit in sales. Finally, configuration management carried out in this work provided a significant improvement in the sale of apparels.

6.2 CONCLUSIONS ON APPAREL RECOMMENDATION SYSTEM

In this work, a new intelligent apparel recommendation system has been proposed for online shopping of apparels in different cities of India. This work used style classification and the styles were changed using a change control procedure to meet the customer expectations. Moreover, the proposed apparel recommendation system uses Intelligent Agents for selecting important features with respect to manufacturing and sales and hence, it is able to provide an effective classification through the use of a Support Vector Machine based classification algorithm. The main advantage of the proposed recommendation system is that it helps the online customers with variety of apparels available with various features including color, material, size and cost for performing effective online shopping. This system acts as a guide to the new customers and also helps the fashion advisersto become successful in their advices by guiding them effectively. The proposed recommendation system is more accurate on the prediction of future trends using past data, current situation and customer expectations. The system has been trained and tested with intelligent rules obtained using well known classification algorithms. The main advantage of the proposed recommendation system is that it provides easy to use interfaces, prediction facility, analysis of the past and comparison with other related items. Therefore, this recommendation system helps the customer to select the necessary apparels with high accuracy and gains the confidence of customers. The system is more accurate since it provides recommendations with more than 99% accuracy.
6.3 CONCLUSIONS ON BUSINESS EXPERT SYSTEM FOR SALES PREDICTION

In this work, a new business expert system has been proposed for performing effective sales analysis. This expert system uses rules obtained from classifiers which are validated using two domain experts who are financial and share market consultants with background in manufacturing industry and marketing area. This proposed system performs the prediction of sales patterns using association rule mining algorithm and also using feature selection methods. A time series analysis is also carried out using the method of moving averages. The business expert system is more accurate in providing recommendations because it uses the actual data collected from manufacturing and sales industries for a period of six years. The temporal nature of the data is helpful to perform effective temporal mining using association rule mining techniques. In addition, statistical analysis was carried out with time series data for effective analysis of the past and to perform accurate prediction of the future. Moreover, the prediction was improved by applying temporal constraints on the time series data. Therefore, this work not only introduced the temporal constraints for selecting most suitable features over the sales of dresses in various seasons, but also for providing feedback to the manufacturer based on market demand and customer expectations. The experimental results obtained from this work proved that the proposed expert system is more accurate in providing suggestions since it uses different techniques for effective decision making.

6.4 CONCLUSIONS ON BUSINESS DECISION SUPPORT SYSTEM FOR APPAREL SELECTION

In this work, an intelligent business decision support system has been proposed for helping the online community who purchase apparels through online systems. The proposed decision support system has been
designed and implemented by collecting facts from different manufacturing units and many sales organizations which are available in different locations of India. Therefore, the proposed business decision support system is able to analyze the market demand, supply chain analysis by considering demand and supply leading to overall success with respect to manufacturing as well as sales. Most of the existing business decision support systems are developed in consultation with the sales side alone. However, the proposed system considered manufacturer side parameters by identifying key success parameters and also considered the market trend. In this research work, experiments were carried out using data collected from manufacturers, customers and sales organizations. A correlation analysis is carried out in this work as a statistical analysis for sales analysis. Moreover, the entire system has been tested using sample data and bench mark data. In addition, they are tested using actual data collected from both manufacturing side and sales side by considering different cities of India.

6.5 FUTURE ENHANCEMENTS

In spite of providing a number of salient and important features, some limitations are there in the proposed work. For example, operation research techniques were not used for scheduling the activities in the manufacturing side. Currently, the customer feedback and available data are used for effective manufacturing. However, the tips provided by these two methods may be biased. In order to these, it is necessary to propose new planning and scheduling activities and techniques for improvement in customer and manufacturer relationships. This will lead to provide a bench marked apparel to the customer and hence can lead to increase in success rate of sales.