CHAPTER 10

CONCLUSION AND FUTURE ENHANCEMENTS

10.1 CONCLUSION

The proposed research is motivated by the fact that a fine grained measurement framework seems to be a better approach for a Business Logic Evaluation Model, which proffers support for the business analysts to handle changes by his own effort without depending on IT developer and thereby make the change environment completely autonomic. It provides a powerful platform to enable changes in the service business logic more sophisticatedly in such a way that the interoperability between the services is managed with flexibility and ease. It also identifies various dependency properties needed for managing changes in the business logic during run time within the specified constraint. Thus an efficient mechanism has been developed to help the business analyst to manage changes in the business logic within the specified time limit. The Finite State Machine is dynamic in nature which is extended to evaluate various change metrics. Cellular automata used for decidability and manageability generate a change pattern for every change that occurs in the business logic. This change further helps us to discover the causes and predict the results of the respective changes. The ongoing activities of the business logic can be monitored using cellular automata through periodic pattern generation. The proposed model effectively manages the emergency changes along with maximum run time support and high degree of automation compared to the existing business models. Changes are analyzed in eight different dimensions and their impact caused by them to the service logics is also clearly evaluated. Based on the change analysis and impact analysis by Cellular Automata, key predictive factor decidability, manageability and QoS assessment are done for assisting the business analyst in various aspects to keep the overall environment under his control. Risk involved in every change request is pre computed using these predictive patterns and based the computed risk; the change request is either automatically handled or forwarded to the business analysts for approval. The various pattern generated by the impact analyzer helps to derive the quality metrics of the proposed model in web service change management.

The model provides maximum run time support for business analysts in handling emergency changes compared to the business process model. As part of change management to asses and build a new service with the available functionalities, it gives 95 % run time support.
for dynamic service integration. Some change requests emerges the need for service integration which facilitates the framework to merge the existing logics through application of methods such as union, composition, substitution and composition without any sort of code injection thereby escalating the degree of automation of the framework to 95%. In addition to this, 86% of critical and emergency changes are found to be efficiently handled and 60% of the change requests are completed within the reaction time. For all change requests the risk assessment and the risk prediction are done with past incident matching. Further it gives best accuracy due to complete code coverage in change evaluation process. The average computation time is 0.88 ms which is considerably low compared to existing business rule model and business process model due to the usage of finite state machine.

10.2 FUTURE ENHANCEMENTS

This work can be further extended in future to boost the degree of automation with more predictive measures and make the change management framework a more autonomous system and to deal with predicting the direct business growth with the involvement of the end users. In the case of the service integration this project has modeled the framework to manage the changes with respect to services from different enterprises associated with the same organization. This work outlines the quantitative justification theory that precisely explained how property evaluation, change evaluation and impact evaluation had contributed for effectively and efficiently managing the changes with respect to services of different enterprises associated with the same organization. These observations can motivate to enhance the features of the framework to handle changes with respect to long term composed services (LCS) which comprises of composition of the several services according to the need belonging to different set of enterprises as well as organization. There are various striking issues concerned with LCS because of the collaboration among various enterprises. For instance the issue concerned with accessibility which prohibits the business analyst from making changes without authorized access permissions from the owners of the respective enterprises. The nature of LCS demands the analysis of additional properties such as coordination, synchronization, concurrency, dependency and the inclusion of change factors such as consistency, recoverability, work flow order and similarity match. In the current evolving LCS scenario these additional properties and change factors are needed to be taken into account for effective and efficient change management.