PREFACE

Configuration Management is an umbrella activity in software engineering process. That is it has its importance from inception of a software project to its life time. Because of the ever changing market needs, demand for time to market and heavy competition among the software product developing companies, they adopted the product line engineering principles which was very much successful in other branches like mechanical engineering, manufacturing of cars and aeroplanes to mention few.

The main concept behind product lines is a planned reuse. Hence software product line engineering came into existence which consists domain engineering and application engineering. Configuration management is an important and indispensable part of any software project but it is more complex for product line software systems because each product is a combination of core assets and custom assets with a large number of variations. The configuration management problem for product lines is to reproduce any version of any product delivered to any customer, where “product” means code and supporting artifacts ranging from requirements specifications and test cases to user manuals and installation guides.

This involves knowing what version of each core asset and custom asset is used in a product’s construction, how every asset was tailored, and what special purpose code or documentation is added. Based on the required functional and non functional features the product is derived from the available assets.

The framework proposed in this thesis can be used as a template or blueprint in order to have effective configuration management and quality product derivation in product line software systems. The recommendations for future enhancements can also help the stakeholders to have an idea on the work to be done in future for betterment of SPL configuration management and product derivation in the wake of innovative developments in cloud computing and mobile computing technologies.

******