

## *ABSTRACT*

Globalization, market orientation and competitiveness demand dramatic improvements in systems development productivity and quality. It suffices to say that the cost effective production of high quality software which meets user requirements, is the goal of every system of development project today. Management and control of software development are paramount in assuring that software products are built on time, within budget, and accordance with a stringent set of quality goals. A company that can produce higher quality goods uses fewer resources than those of other companies that will have the competitive edge in any kind of market. Producers of poor or average quality products with low productivity, whatever their past market shares, will loose ground in the face of competition. Quality and Productivity are the weapons that have to be utilized by any enterprising organization to win dominance in the global market as well as in the competitive market of the information age. The current software industry is facing numerous problems, such as continuing emphasis has been given in finding ways to solve the problems with the main focus on improving software development quality and productivity. One of the solutions to these problems is the implementation of Software Engineering tools and techniques, such as Computer Aided Software Engineering (CASE) Technology and CASE tools. But, up to now with the tools only, the software industry is unable to solve these problems completely. The industry has realized

that tools are not enough. One fact that the software industry has established is that " a fool with a tool is still a fool ". In the 1990s, there are two main subjects on quality that capture the attention of most businesses in the world, namely the International Quality Management Standard ISO 9000 and Total Quality Management (TQM). This thesis addresses the current software problems and attempts to apply the new quality oriented methods, as characterized by Quality System Standard ISO 9001 and Total Quality Management. The Total Quality Management makes quality a way of focusing the organization on the competitive discipline of serving the customer totally. In the UK, a report by Department of Trade and Industry concluded that ISO 9001 was the best existing generic standard for software development. This standard is being adopted generally in world wide industry and a software derivative has been developed (ISO 9000-3). It is proposed a compliance quality system model for software development with ISO 9000-3 (ISAT903) as defined in the title as a conceptual combination of the Total Quality Management, Software Engineering concept and application of the Quality System Standard ISO 9000-3.