# ACTIVITY PLANNING SYSTEM
# CRITICALNPATH ANALYSIS AND PROGRESS UPDATE
# SYSTEM FOR APPAREL INDUSTRY

K. R. S. Premanath Kumarage

"This dissertation is submitted in partial fulfillment of the requirement of the Degree of Master of science in Information Technology

Department of Mechanical Engineering,

University of Moratuwa

Sri Lanka

July 2006

91236

# ABSTRACT

Garment sector could be identified as one of the most competitive industries which is driven by orders with a minimum lead time. On the other hand, the bargaining power of the suppliers is considered to be low and for these reasons, timely delivery of the orders is crucial for survival in the industry. In this context. IT has to play a vital role in achieving productivity as the w inning edge of competitive advantage. In the garment trade, when an order is received it is required to plan the completion dates of the order and the related activities. Even though the Critical Path Concept (comes under the Network Analysis in Operations Management) can be used for this task, this conceptual approach is not being taken in most of the Apparel Manufacturing firms in Sri Lanka

In this project, an IT based solution would be provided to the Apparel Sector by designing and developing an "Activity Planning System" with the objective of facilitating efficient & effective planning and execution of orders w hits optimizing the usage of limited available resources.

Based on the theory of Critical Path Analysis, this project automates the Critical Path of an order (which is referred hereafter as the "Activity Plan") and gives an interface to follow up the progresses of the various activities conducted by users in multiple locations till the completion of the activities. The system automates the generating of Activity Plans for orders according to a pre-defined activity set specific to each buyer, taking the available resources and constraints into account The system determines and highlights the critical and non-critical activities and facilitates actual progress update of various activities. This would be done by maintaining target dates & actual completion dates of various tasks and updating the actual completion dates by different people in different departments at multiple destinations. It also highlights any deviations against the plans and indicates the feasibility of the achieve ing the delivery dates.

Although there are few tools available in the market which consist of some of the above features, those solutions arc too expensive to afford or do not cater to the industry specific requirements. This system economically caters to all the industry specific requirements captured in the study.

The system was developed using PowerBuilder / Sybase Technology and the Analysis & Design was carried out using Object Oriented Methodology/ UML. The system also contains a web portal which was developed using Java/JSP & Apache-Tomcat Server.