

## Survival Analysis Based Delivery Time Estimates for Display FAB

**Authors :** Paul Han, Jun-Geol Baek

**Abstract :** In the flat panel display industry, the scheduler and dispatching system to meet production target quantities and the deadline of production are the major production management system which controls each facility production order and distribution of WIP (Work in Process). In dispatching system, delivery time is a key factor for the time when a lot can be supplied to the facility. In this paper, we use survival analysis methods to identify main factors and a forecasting model of delivery time. Of survival analysis techniques to select important explanatory variables, the cox proportional hazard model is used to. To make a prediction model, the Accelerated Failure Time (AFT) model was used. Performance comparisons were conducted with two other models, which are the technical statistics model based on transfer history and the linear regression model using same explanatory variables with AFT model. As a result, the Mean Square Error (MSE) criteria, the AFT model decreased by 33.8% compared to the existing prediction model, decreased by 5.3% compared to the linear regression model. This survival analysis approach is applicable to implementing a delivery time estimator in display manufacturing. And it can contribute to improve the productivity and reliability of production management system.

**Keywords :** delivery time, survival analysis, Cox PH model, accelerated failure time model

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