

Applying Theory of Constraints to improve the overall effectiveness of equipment The case study of TFT-LCD industry

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Abstract

TFT-LCD is the industry of high-tech and capital intensive because of the costly equipment and the competition. Therefore, management are trying to increase the utilization of equipment, and pursue system productivity. Consequently, if one can shorten production periods and reduce the high amount work in process, the stock cost will be reduced. Thus shorten the product work to expect to be obviously more important. In TFT-LCD manufacturing ARRAY process is very complicated, which takes several repeated processes, meaning that a product in the manufacturing process must go through capacity constraint resource (CCR) twice or even more.

To study CCR reentry of reasonable match of problem, this research is to build up a DBR's scheduling method for TFT-LCD production control. This method takes into consideration CCR in the manufacturing process and put CCR productivity and utilization rate of the equipment under protection. This research studies three cases to analyze the feasibility of scheduling method. It is shown that the proposed method provides schedules with better average order lateness, cycle time, total utilization, overall equipment effectiveness (OEE). Compared to current company method, this

method shows better result.

Keywords: Theory Of Constraints (TOC) ; Drum-Buffer-Rope (DBR)

