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全球化供应链精益制造新程新模式——以海量制造组业为例

A Novel Approach of Lean Production Planning in Global Supply Chain——A Case Study of Assembly Massive Production

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关键词:

精益制造; 生产新程; 供应链管理; 巨量资料分析; Lean Production; Production Planning; Supply Chain Management; Business Analytics

摘要:

在全球化趋势下, 制造商面对来自更多低劳动力成本新兴国家竞争, 为确保企业既有投资及市场地位, 无不殚精竭智地追求: (1) 提高物料采购成本效益; (2) 合理地降低制造成本; (3) 扩大市场营销影响力; 及(4) 提高物流效率与降低运送成本等, 使得[精益制造]概念为今日制造业者所奉为圭臬。[精益制造]要旨之一在于降低废料, 多数此类生产新程信息系统在组业应用上, 自获得市场需求评估(对库生产模式)或接到客户订单(对单生产模式)后, 会分别比成品及物料库存, 再依[产品用料列表](Bill of Material, BOM)展开取得[物料需求清单](Material Requisition Planning, MRP)。倘若物料存量不足, 则即触发采购流程, 候进料检验后, 启动生产指令。然而常因原料供应商供货误差, 或是其他生产要素不完备, 致使停工待料, 不能满足客户的如期品质要求。本文提出一套做法, 运用巨量资料分析, 找出物料组合采购策略, 降低停工待料机率, 同时在物料不足下, 合理风险预估并立指令, 以指令生产时间差, 争取供应商供货所需时间。

Under the trend of globalization, the manufacturers are inevitably facing new challenges from the emerging lower labour cost countries. To ensure the current investment and maintain the market position, the manufacturers are putting their best effort to pursue: (1) maximizing the procurement benefit, (2) reasonably reducing the production costs, (3) expanding sales and marketing influence, and (4) improving logistics costs effectively. This makes the concept of Lean Production become the common sense of production. The fundamental idea of Lean Production is to reduce waste. Many production planning information systems applied in the assembly factories are using the similar process as follows: (1) when market demand is forecasted (Build-to-Stock) or receiving customer orders (Order-Driven Production), the systems will generate material requirement list based on the product's BOM (Bill of Material); (2) check finished goods inventory, calculate the difference and wait for producing; (3) check parts inventory and calculate the difference for procurement; and (4) if inventory is sufficient for production, the systems will issue the production order. However, the factory often switches production orders or even worse, stops production and waits for materials. This paper proposes a novel approach to improve the order forecasting and the procurement strategy by using business analytics techniques.

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