ALGORITHM CONSULTING
[Pvt.] Limited

The IMPACT of P-3

APPAREL & HOME TEXTILE BUSINESS

General

The software is extremely adapted to the needs of the manufacturers of apparel and home textile products. And yet at the same time it does not represent what they actually do. That would not have improved anything and would have sealed the fate by institutionalizing wrong business processes on the software. Instead, our software tells the manufacturers what should they be doing to improve their bottom line. The product borrows key workflows from the latest Manufacturing Planning and control systems concepts (generally not known to the key managers in the industry). It adds very innovative adaptations to meet the constraints and ground realities of this industry and creates a package of innovative best practices. Some key benefits have been enlisted in the paragraphs below.

Clarity & Uniformity In Product & Customer Order Specifications

The industry deals with products that have too many specifications that constantly evolve over time. There is always this risk of committing an error or omission. Especially whenever the operations are scaled up. The risks of such errors and misunderstandings can rapidly multiply. The product's Merchandising module has a potential of minimizing such risks by sharing clear, concise, latest and uniform information across all functions.

Improvements In Initial Product Costing

The industry traditionally uses cost plus margin method coupled with some guesstimates of process costs and overheads for quickly arriving at a bid. The forces of global competition are putting constant downward pressures on prices and this trend is likely to continue. The product calculates the bottom line quickly, more confidently and with greater clarity. The risks inherent in bidding either too high or too low can thus be minimized.

Accuracy In Calculating Fabric And Trims And Accessories Requirements

The product's merchandising module minimizes errors of omissions in calculating the correct materials requirements. Human errors in quantity calculation can create shortages of materials that are disruptive to production. Excessive purchasing though not disruptive is still wasteful. It adds up to the costs eventually.

Laying Solid Foundations Of Sound Planning With Product Engineering

It is in the very nature of apparel and home textile business that is based on Make-to-order manufacturing strategy that demands complete product configuration before we commit it to manufacturing. A failure to ignore the product configuration and its engineering can result in either over or underestimating the lead time, labour requirements, procurement requirements and the production resources required to manufacture the product. Thus there is an important requirement to perform industrial engineering on each product before putting it into manufacturing. The product caters for this need through its sewing engineering, Finishing and Packing engineering, thread requirement calculations, Dry and wet processes engineering, CAD/CAM for fabric requirement calculations and printing and embroidery engineering. The results of these heavy industrial engineering activities are as follows:

Accurate Line Layouts

The product creates balanced sewing line layouts. It also calculates the recommended operator wages, expected sewing expense; expected daily production and the total sewing lead-time. This functionality creates more credible production plans that meet shipment commitments made to customers.

Optimum Finishing And Packing Layouts

Based on the sewing production estimates, the finishing and packing layout creation functionality of the product ensures the optimum resource utilization in finishing and packing and averts any bottlenecks and delays.

Optimum Sewing Thread Requirement Calculation

The software permits correct calculation of sewing thread required for sewing a given order. Shortages that disrupt production and access procurement that results in unused cones that are hard to recycle, are thus averted.

Predictable Lead-time And Raw Material Requirements For Embroidery, Printing, Washing And Dry Finishing Processes

The industrial engineering functions are performed on all these activities by the software to determine the lead-time for all these processes as well as the raw material requirements. These activities serve as a solid input for sound planning activities done by the MRP and CRP.

Master Scheduling

Whenever the industry tries to scale up its operations, things start to go out of control, orders are delayed or rejected and relations with customers are strained. Very few factories cross the apparent glass ceiling of more than USD 20.0 million annual sales, many shut down during this journey. As more orders and more product lines mean more information, more materials, more product specifications and more planning etc. As the things scale up, cracks begin to appear in the systems. The software's master scheduling functionality serves as a first line of defense against taking unrealistic order commitments. Here the software uses the Rough Cut Capacity Planning (RCCP) technique. This helps in taking order acceptance and order confirmation decisions quickly and realistically.

Capacity Requirement Planning (CRP)

With the increased stress on production resources due to scaling up the operations, it becomes even more important to take a continuous account of production resources and their capacity. The ability to continuously match the capacity with demand is a very important determinant of success. Excess capacity adds costs, whereas overloaded resources create shipment delays. The CRP automates the collection and display of both demand as well as the available capacity to meet that demand for every production resource. Giving more visibility to the management.

Material Requirement Planning (MRP)

The product's major strength is its Manufacturing Resource Planning Algorithm (MRP). This has the ability to create and maintain detailed resource plans for orders including trims and accessories procurement requirements, fabric procurement requirements and work centers and CMTs/sub-contractors required to execute the orders.

Finite Scheduling

This is a powerful functionality of the product that enables the planners to create valid and realistic work schedules for the work centers. These are tightly coupled with the plans and priorities created by the MRP. This functionality reduces slack in production and provides a correct view of the utilization of production resources and assets along with their efficiency.

Reduction In Order Processing Lead Times

Shorter production lead times and higher delivery performance is a cornerstone to success in this industry. Our manufacturers are competing with countries that are already located very close to Europe such as Romania, Ukraine and Bulgaria. A better planning can reduce lead-time and provide a competitive edge that can easily be lost due to Pakistan's distance from the markets. The product has a potential of constantly analyzing the planned and actual lead times and constantly re-applying them into the planning function. Thus the throughput time gets shorter and shorter without necessarily compromising the delivery performance.

Automation In Dependent Demand Procurement

All materials that become part of apparel products such as trims and accessories, fabrics, packing materials are always governed by dependent demand strategy i.e. they can never be held in stock and only purchased when required in an order. The procurement quantity of all such items is calculated by the MRP, automatically. This eliminates human errors, shortages, excess procurement etc. and improves the bottom line.

Recycling Of Leftover Materials

One important capability of MRP is to take into account projected stock and scheduled receipts (goods already ordered) and subtract them from the gross requirements (what's needed) before creating a fresh purchase requisition. This capability allows leftover materials to be recycled and reduces the overall quantity of materials purchased. The netting capability is used for all those types of materials where reusability from the left over stock is possible.

Lowering Costs Of Carrying Inventories

This is an important area where early arrivals of raw materials are just as dangerous as late arrivals. The software has the capability of determining the release time of purchase orders with precision, ensuring that materials only arrive when they are actually needed; not earlier and not later. This reduces the average inventories by at least 50%, freeing up a lot of capital for other more productive purposes.

Elimination Of Non-value Adding Tasks From Purchasing

A Lot of productive time of purchasing staff, in this industry, is put into mundane, repetitive and non-value adding activities such as making material development requests, calculating purchasing requirements, making purchase requisitions, releasing purchase orders, delivering them to vendors, doing the follow up on material arrivals, sending reminders on late deliveries etc. The product automates these mundane activities, freeing the resources for higher value adding activities such as exploration of new sources, creating long term contract, solving quality related issues, innovating vendor processes, improving delivery lead times etc.

Controlled Issuance Of Materials To The Shop Floor

This functionality of the product automatically generates pick-lists (material issuance authorization slips) that authorize issuance of raw materials strictly in accordance with the expected consumptions rather than an individual's discretion. This enables better controls on the actual consumptions of raw materials during production.

Calculating Actual Cost And Variance Of An Order In Real Time

The product has the ability of recording and maintaining actual raw material consumptions, actual wages, actual hours of work performed and wastages during manufacturing related to a particular order. Based on this information it calculates an actual cost of the order and its variance with the standard cost (budget). This powerful functionality provides a high element of control over efficiency and productivity to the senior management.