



# Material Handling in ETO

Rapid response to changes that impact contract planning, costing, scheduling, and execution show up as the bottom-line profitability of ETO manufacturers who often operate on thin margins...

The ability to issue materials in an available unit of measure (UOM) is quite often different from that on the requisition form for a complex or engineer-to-order (ETO) build instruction. The ability for one-of-a-kind production manufacturers to deplete inventory of appropriate materials, even in a different UOM than originally specified, has bottom-line profitability impact.

Similarly, the ability to select specific receipts to allocate or issue to projects is vital particularly if there are multiple receipts of the same material, the manufacturers can select the 'Select Inventory for Selected Item(s)', choosing from a list of receipts.

Yacht-builders for example, also appreciate the ability to borrow inventory allocated to another project to maintain the benchmark deliverables to receive incremental billing. In few MES (Manufacturing Execution System) solutions, the software technology allows users to do what they are already doing on the shop floor, namely borrowing available inventory from projects that have not been started to help complete projects when purchase orders have been delayed. This critical documentation allows for an audit trail covering the transaction, something that never happens when someone grabs something off the plant floor.

According to Randy Richel, P.Eng., CEO and General Manager of Canada-based Trakware, "The ability to serialise inventory allows users to break up a large lot of inventory into smaller lots (each with its own serial number) and this can be done when someone wants

to break out a small amount of inventory from a larger receipt, or when someone is receiving a large order. It is also possible to serialise manufactured parts when they are entered into inventory on the completion of a work order. Using the serialised inventory in combination with the 'Select Inventory for Selected Item(s)' function, a user can break the FIFO or LIFO cycle and select specific receipts from a serialised lot for work orders."

## Other solutions in the ETO environment

Project-focused manufacturers have unique needs that frequently surpass out-of-the-box capabilities of generic software packages. The ability to find highly customisable interfaces while providing a system of record for everything project-related; including a complete view of the business, is rare. Some of the key factors to consider are discussed here.

## Streamlining procurement processes

Seamless business solution is required to request for quotes, vendor quotes, project planning, requisition approval, and processing into purchase order generation. There needs to be support of standard purchase orders, blanket orders and releases and subcontract purchase orders, manage purchasing commitments by project and the two-way or three-way match with accounts payable.

According to Stephen Parker, CEO of North Carolina-based Datacraft Solutions, "The reduction of waste associated with rarely used items in inventory as well as allowing distributors to focus on core competen-

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cies and production efforts is vital. No time should be wasted sourcing and procuring infrequently used items. There are very few digital *kanban* systems, and the old *kanban* card system has severe restrictions when there is an external supplier in the supply chain. Digital *kanban* re-orders based only on actual consumption are electronically communicated during each phase of replenishment.”

### **Tracking customer orders**

Detailed order tracking with complete project support and creation of inventory demand allows ETO manufacturers the ability to configure each customer’s order.

### **Tracking project and asset inventory**


The ability to track and manage asset inventory including raw materials, work in process (WIP), and finished goods inventory specifically assigned to a project is vital for project ownership, and a complete audit tracking.

### **Manufacturing by project**

Seamless business solution for project and financial management, configuration management, supply chain management, and production execution, is rarely combined with robust project management functions and coordination that spans engineering, planning, procurement and production.

### **Gaining control of processes**

According to Richel, “Tracking projects from the prototype and design phase, through materials procurement, manufacturing and order fulfillment is essential when there are complex procedures and unique exceptions.”

Ultimately rapid response to changes that impact contract planning, costing, scheduling, and execution show up as the bottom-line profitability of ETO manufacturers who often operate on thin margins. A small error can make an ETO product highly unprofitable, clearly articulating the need for effective technology solutions, and is even more critical than in the repetitive manufacturing environment. 

Thomas R Cutler is the President & CEO of Fort Lauderdale Florida-based TR Cutler, Inc