



1. Introduction of iCube Discrete Manufacturing™

It is a discrete manufacturing system for small scale manufactures or companies that need simple production/assembly operations such as assembly houses, branch offices of manufactures, service centers and resellers of computer systems and electronics products.

It allows you to build finished goods or assemblies with one or more bill-of-material levels in one work order. It routes the work order from creation through approval to receiving components to WIP and production. Along each process, it tracks the communication and notes, component usages, labor cost and overhead and do cost roll up for the finished goods/assemblies.

During work-in-process, you can do multiple receipts of components for shortages or defects, and issuance of surplus or defective components to specified location. The final defects of finished goods are logged such that you know the yield rate. You can use wired and wireless scanners to speed up data collection and ensure data integrity.

The bill-of-materials also stores supportive documents in the format of image, PDF, text, audio and video. You can attach the product specification, work instructions, manuals, and drawings etc.

iCube Discrete Manufacturing is a web-based product. All authorized internal and external users are able to process/view the BOM and work orders online. This feature allows you to do turnkey manufacturing, sub-contracting and manufacturing in multiple locations.

2. User Friendliness

iCube Discrete Manufacturing is workflow based. The complete processing of BOMs and WOs from start to end are divided into multiple processes (creation, edition, approval to the actual processes) in the order of processing sequence.

It tracks what process was last completed and it only enables the process that is ready to be performed to avoid wrong doing. It presents information (status, progress, communication, notes, issues, who had done what processes) to the authorized users to give them overview and specifics to do the job. All processes are streamlined to avoid unnecessary user inputs. A simple click is required to hold/unhold or approve/disapprove orders that authorized users can do it online whenever and wherever they need. The simple scanner interface make workers easier to view order status, to pull parts, doing inventory transfer, adjustment, issue and receive etc.

The workflow control, the intelligent information and simple processes etc. all fit in iCube unique user interface to make jobs easy for all users to deliver fast, accurate and quality performance.



3. Modules

Bill-of-material (“eBOM”)

Bill-of-material is a manufacturing recipe to define what components and the required quantity to build what finished goods. Each bill-of-material is identified with the finished good item number and a revision number. Every revision for the same finished goods has its own bill-of-material.

eBOM is a eDocument Center for the products you define to build. It allows you to attach documents in the format of text, PDF, image, audio and video. You can store the related release notes, ECOs, work instructions, specification, drawings, manuals, brochures etc. Any authorized users using browser will be able to access the BOMs and their documents.

eBOM is a good editor for creating and revising BOMs. Once the finished good item number is entered, it will be displayed in the treeview section. You point to the item number in the treeview, click “Add” to add components underneath it. The real-time notes, ECOs and inventory of the components will be displayed to help identify the best components to use. Revising BOM is simple, you point to an existing BOM and revision in the treeview and click “Revise”. The existing BOM structure is copied and displayed that you need to enter a new version number followed by making changes. Once the creation or changes are done, you check the “final” box that will forward the BOM to authorized users for approval. Only approved BOMs are official and to be used for production.

Work order (“eWO”)

eWO tracks the production of finished goods from start to end based on the recipe defined in the bill-of-material. You can build a finished goods/assembly with multiple BOM levels in one order; or multiple work orders with each order for one assembly item. The finished goods can be serial or lot control.

eWO consists of the processes “WO create”, “WO edit”, “WO approve”, “WO receive”, “WO produce”. You can create a work order by converting from a sales order (“Build-to-order”) or entering the finished goods and quantity to fulfill backlogs and buffer stock (“Build-to-stock”).

Each work order needs to be approved to produce. Once approved, “WO receive” is to pull components to WIP for the work order that you can do multiple times.

“WO Produce” defines the quantity produced of finished goods and the yield. You can receive components to cover shortages and defects and issue surplus or defective items to designated location multiple time before the work order is completed. At completion time, it does cost roll up for the finished products by summing up all the net components received in WIP plus the optional labor cost and overhead and divided by the total quantity produced. The defective quantity allows you to track the yield rate.



Overview of iCube Discrete Manufacturing™ 2.0

You can view WO status, do “WO receive” and “WO produce” with wireless scanners.

Wireless Scan (“wscan”)

This module is installed in a wireless scanner to help workers to process inventory transactions of work orders using the wireless scanners without using a computer. Users can receive components to a work order, issue them back to a location; and define the quantity produced and defects.

Authorized users need to login to the scanner. They press a button to define the transaction type, scan in the WO number, the item number, the associated serial number or lot number. For non-serialized items, they need to enter the quantity. They can also view the WO status. The scanned entries will be posted to iCube Discrete Manufacturing real time and do validation. After the transaction is done, the related accounting transactions will be generated in ERP.

4. ERP integration

iCube Discrete Manufacturing integrates to Sage Accpac and Pro ERP, with the modules SO and IC. It reads information of item, inventory and sales orders from ERP and posts the related accounting transactions back to ERP. It consumes components, produces finished goods with roll up cost consisting component cost, labor and overhead.

With the material planning module, it also requires PO module that it needs to read in the estimated PO receipt schedule.

5. Scalable solution with expansion

iCube Discrete Manufacturing is focused on simple manufacturing models that do not need to associate work orders to machineries and special process with capacity limit. It provides simple and ease-of-use solution to address what you need for simple manufacturing including subcontracting.

The solution is scalable, users that need more complex manufacturing processing can upgrade to iCube Manufacturing Executing System or to acquire additional modules for production planning, material planning and QC.