OVERVIEW Through streamlined new-product development, Visual Dolphin helps shorten time to market, deliver high-quality products, respond to changes in demand, and ensure delivery of promised orders. At the same time, visibility and transparency are improved in real time across shop-floor processes – driving superior performance across plant operations.

Visual Dolphin Manufacturing provides these benefits by streamlining the entire manufacturing process – from planning and scheduling through sequencing and execution to monitoring and analysis – and improving efficiency along the entire manufacturing chain.

The software supports a customer oriented manufacturing approach, using real-time tracking and analysis. Problems can be identified and fixed before they become customer issues.

VISUAL DOLPHIN MANUFACTURING

General Features

Visual Dolphin Manufacturing offers the following advantages:

- Flexible preparation of multiple assembly sheets for a finished product.
- Pre-defined allocation of machinery usage by assembly sheet.
- Automatic generation of MWO from Sales Order.
- Automatic generation of Purchase Order for missing raw material quantity.
- Automatic generation of Products from several MWO.
- Approval workflow to keep track on the MWO change history.
- Multiple consumption till the finished product is produced.
- Lot or Batch traceability of produced finished product or raw material used for a specific MWO.
- Cost control on manufacturing orders; comparison of actual cost and quantities against initial estimates.
- Analyze MWO and overall production performance using powerful, flexible and multi-criteria reporting and graphical analysis.
- It is perfectly appropriate to specialty industries, like jewelers.
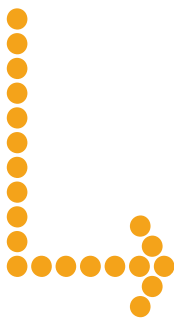
Preparing the Standard Assembly Sheet

The standard assembly sheet identifies the raw material required for the manufacturing of the finished product. Raw materials are selected from the item master file in Visual Dolphin Inventory, whether they are manufactured semi-finished products or products acquired from third-party suppliers.

The result of this assembly sheet or "recipe" is the final manufactured product. Besides a primary recipe that will be proposed as default, a manufactured product could have multiple recipes. Each recipe can be composed of an unlimited number of levels that goes down from the finished product to the semi-finished products that constitute the product to produce.

The assembly sheet proposes as well an imbedded cost analysis based on current cost price, last cost price or current replacement cost. Cost simulation also considers the currency rates fluctuations related to the raw material used.

Additional charges can be allocated to the recipe for a more precise cost simulation, like the machinery use (depreciation), labor contribution, direct (but shared) manufacturing expenses... Based on a standard costing method, these charges can be modified later in the work order.
By the same occasion, the definition of the raw material default warehouse avoids double entries related to the goods transfer from the stores to the production floor, or any production site to another one.

Automating the Manufacturing Order

Manufacturing Work Order or MWO for a finished product can be entered directly (manually) or, may be generated automatically from client's Sales Orders. Visual Dolphin Sales Order books the quantity available in stores and automatically, generates MWO for the remaining quantity.

Consequently, based on the standard assembly sheet components, MWOs may, themselves, generate more MWOs related to semi finished products needed for the initial production orders required. This process drills down the assembly sheet to create a cascade of required MWOs, until it gets to the raw materials needed.

The integration of Visual Dolphin Manufacturing with the other Visual Dolphin ERP modules is total. Based on stock availability, the system generates suggested Purchase Orders (need for approval) for missing Raw Material required, while considering:

- All raw material needs for achieving the MWOs in process,
- Raw material quantities available in stores,
- The current approved Purchase Orders.

On another hand, machines and other equipment, to be used for the manufacturing process, are assigned by MWO. Therefore, by specifying the expected occupancy, the system provides an accurate visibility on machinery load and on delivery deadlines.

Approving and Tracking The Manufacturing Order

Visual Dolphin Manufacturing supports workflow. Manufacturing order or MWO goes through a predefined approval cycle, keeping track of the initial request and all the steps, before getting the final approval for processing. An additional MWO status tags the ordered quantities as requested, approved, under process or already achieved.

During processing, MWOs in progress are monitored throughout the production process. This feature provides the plant management with a clear visibility and helps in managing the production load. Rich reporting highlights the occupancy period for each machine per MWO.

Processing The Manufacturing Order

Follow-up of ingredients, Raw Material or Semi-Finished products, consumption is based on the original recipe.

Depending on the production phases, the manufacturing process could involve activities that do not necessarily result into semi-finished products, like design activities, raw material cutting or transformation.

Actual consumed quantities are entered for each production phase until the order is completed.

Once done, the quantities of manufactured (finished) products show on the inventory report.

The cost of these finished products is based on standard costing. This is determined by the average cost of each raw material used and the standard cost related to the production charges (direct, overheads, labor, machinery...).

When quantities required are completely produced, the MWO is closed and quantities are moved to the finished products warehouse, as specified in the assembly sheet.

Visual Dolphin Manufacturing has the capacity to process multiple MWO as bulk and generate separate finished products.

Finished Product Traceability [quality control]

To comply with item traceability requirements (ISO or other norms), the finished product can be tracked by its production lot or batch number. Lot or batch numbers are valuable since they can identify items to be recalled, for example, from clients' location. Along with the lots and the batch concepts, expiry dates can be specified when required.

Traceability may not be complete without the identification of the raw material or semi-finished products used in the MWO. Materials used for a recipe are also, tracked by their lot or batch number. Quality problems can be traced back to suppliers, if needed.

On the other hand, name of labor, machines used, production line used and other manufacturing environmental parameters, like temperature, humidity... may be saved at the level of each manufacturing transaction, and may be retrieved and analyzed when necessary.

Security

Like other Visual Dolphin products, Visual Dolphin Manufacturing ensures that right to use all crucial business processes is secure. Security groups are created to restrict users' access to specific functions or programs: access to recipe can be protected for example.

Inquiry and Reports

Visual Dolphin Manufacturing presents a powerful set of reports that helps the business analyze the profitability of each MWO compared to the initial estimates.

The usage of a standard reporting tool provides the required flexibility to produce effective reports and enables the users to export all report data to an external file, utilizing most of the standard supported data types, like ASCII, Rtf or MS Excel.

Sample Manufacturing Reports:

- Monthly production
- Machine occupancy
- MWO journal
- List of Consumption by MWO
- ...

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