Implementation approach - JDE Enterprise-One applications

**High-level Business Benefits**

JDE’s EnterpriseOne system integrates various business functions in a company and let the business transaction seamlessly flow for the day-to-day operations. Major benefits are

* Better management and control on inventory. As a critical company asset, inventory (both finished goods and raw materials) are tracked at each transaction level, counted thru cycle-count process and accounted automatically at the time of receipts/issues. More accurate inventory records result in better planning and fulfillment for the company.
* Planning system integrates the product demand (from forecasts or real sales orders) into manufacturing execution process. System eliminates the need for planners having their excel-based sheets to re-work on changing demand or supplies.
* Product recalls. JDE system has trace and track capabilities. The data comes from actual transactions and user need not input any information manually to retrieve trace or track data.

**Implementation approach**

The following is the suggested approach, when the corporate company’s system is JDE and the acquired division or company is merging with the corporate system.

* Form a core team of business leads from Sales, Planning, Manufacturing and Finance. Identify the business sponsor for this project.
* Core team interacts with the JDE SME (subject matter expert) in building a prototype. Proto-type building takes multiple weeks to understand/document the business process and develop a plan to identify/resolve business process issues.
* The prototype is presented to the senior management through a set of critical business scenarios. It is also presented to a wider audience of business users from all the functional departments. The feedback and correction to the prototype are executed.
* Identify the ‘power users’ or SMEs from the business side. These resources act like single point reference for resolving inter-functional issues and provide hand-holding to the other users. All key system decisions impacting business process are taken by the SME team. They are also involved in detailed user testing when additional (or) new (or) custom-built functionality in JDE is released to the users.
* Project goes through formal process of CRP (conference room pilot), ICRP (integrated conference room pilot), user training, user acceptance training (UAT) before the go-live event. Specific scripts are prepared to walk through the CRP, ICRP and UAT exercises. Sign-offs are required at these events to ensure user involvement and accountability.
* Assumptions:
	+ Functional SMEs from Corporate will be available to support and resolve business issues.
	+ Corporate IT department resources available for technical support, code changes and code deployment
	+ Corporate training resources and training content can be re-used in the rollout process
	+ Functional scripts can be re-used in the rollout process.

**A very high-level overview of various functional modules in JDE is given below.**

**Product Data Management (PDM)**

* Each Finished Goods (FG) will have a bill of materials (bom) defined in JDE. The bill will be at each case level to start with. Later, we can roll out batch bills if the data is available. Intermediates or sub-assemblies (like bulk, batter or fills) can have their bills in LB.(pounds). If the sub-assemblies are manufactured ahead of time and sent back to storage for future use in production, a workorder to make them is issued.
* Each Finished Goods will also have routing defined. The labor hour to make the FG is listed here. We can add setup hours, if the line preparation overhead needs to be allocated to the product.
* Each of the manufacturing lines will be treated as workcenters in JDE. Workcenters will have labor $, machine $(if applicable) and fixed/variable overheads.
* Scrap and yield factors are allocated in the bill of materials. System aggregates the scrap factors in the workorder requirements and also in the manufacturing planning process.
* Bill of materials holds the information whether the component is manually issued (or) back-flushed (or) floor stock item. Examples: water (floor stock), pallets (back-flushed), consumables (floor stock)

**Product Costing**

* Product costing module in JDE handles the cost simulation and cost freeze of the products. Based on the bill/routing and the standard cost of the purchased item, system rolls up the product cost. User will execute the simulated costs till the bill quantities and routing hours are realistic. Cost freeze will roll up the cost as final, revaluing any existing on-hand inventory.
* Users can simulate annual product cost budgeting by keeping separate annual standards and report management on the cost impact.
* JDE can handle additional cost elements like material handling, landed cost, etc into the product cost total. This will help in absorbing realistic product costs in the work order manufacturing accounting.
* Standard costing the most popular usage across JDE customers. JDE can handle actual costing, weightage average costing, job costing etc.

**Forecasting**

* JDE has capability to generate product forecast based on the past sales history and the choice(s) of 14+ different statistical models.
* Till the sales history is available in JDE (through regular sales order shipments), user can manually enter monthly or weekly product forecasts. Another alternative is to load sales history into JDE before go-live and run the sales forecast generation.
* Forecasted products will be at the same unit of measure as ‘primary unit of measure’. (Example: 0704220- poultry patty -3oz, primary uom is EA)
* Marketing or demand planning function owns the forecast data. If the originally agreed forecast data need to be modified due to plant constraints or market feedback, adjustment forecasts are entered using different forecast type. This will help to monitor the forecast accuracy for management reviews.

**Manufacturing Resource Planning (MRP)**

* JDE adheres to the APICS terminologies on the Distribution resource planning and/or manufacturing resource planning.
* MRP consolidates all the forecast and/or actual sales orders in the DCs (distribution centers) to the relevant manufacturing plant. This process is known as transfer orders. Branch relationships define what products are maintained in the DCs and the flow of manufacturing/distribution. These relationships can be modified any time to suit the market demands and availability of manufacturing capacity.
* Safety stocks for the finished goods are identified at the DCs. Each manufacturing plant can also have their safety stock controls. DRP/MRP includes this demand besides the forecast and/or customer demands.
* Each manufacturing plant then gets the MRP message to ‘make’ the finished goods based on the external demand. This is called manufacturing workorders. MRP message also explodes the bill of materials and generates purchase order messages for the bought-out materials.
* Planners or buyers, based on their roles, process the MRP messages into firm orders.
* The actual execution of MRP engine is decided after business process reviews. Most of the JDE clients run their MRP batch every day early morning, at the minimum. This factor is dependent on the type of industry and demand variance in the market place.

**Workorders**

* JDE’s shop floor management handles the manufacturing process through workorders.
* Workorders can be entered manually (or) processed from MRP message application. Typically, the master scheduler(s) enter/maintain the finished goods’ schedule thru’ workorders.
* Planners at the plant level generate workorders for sub-assemblies or WIP items.
* User will then print WO, which is a process of attaching partslist (from the bill) and routing (from routing master). JDE will hard-commit the materials against this workorder in the inventory system.
* JDE generates a workorder outputs (1) WO traveler (or) multi-level partslist (2) WO summary – listing of all orders for the manufacturing line (3) shortage list – list of known shortages for the workorders. This is communicated to the plant supervisors, by email or hardcopy outputs. The output can show routing instruction, which can include specific manufacturing instructions for that product.
* WO completion can happen thru DSI or any third-party scans. User can manually enter completions. JDE has multiple of ways of handling this transactions
	+ Super back flush, where material and labor are accounted at standards
	+ Back flush, where material is accounted at standards. Labor need to be entered at actuals.
	+ Manually entering completions. Reporting materials issues and labor usage also manually.

Business decision is made on the best choice of using one of the above, based on the plant level specific business needs.

* JDE can handle discreet and process manufacturing. Discreet manufacturing is easy to use and adopted quickly in a typical implementation. Products having by-products in the manufacturing process go through the process manufacturing mode. Line or cell manufacturing, kanban functionality, etc. are also available.

**Manufacturing Accounting**

* After workorder completion, the orders are not yet closed. Cost accountants take over the control of the workorders and process the orders through manufacturing accounting.
* Manufacturing accounting batch jobs creates GL entries for the inventory transactions. This can be run in proof and final mode.
* Next step is the variance accounting, where the different between standard & actuals are booked under variance journal entries. This can be run in proof and final mode.

**Inventory Management**

* Inventory system maintains the cardex records, ledger. JDE has expiry date (based on the shelf life of the item), sell-before date and best-before date capabilities.
* Inventory adjustments, transfers, issues are transacted under the inventory module
* JDE can help users to conduct physical inventory check through cycle counting. System keeps tracking count date(s) and prompts for the next check based on the defined cycle frequency.
* JDE can allow on-hand inventory to go negative (this is the management discussion point). However, these negatives need to adjusted back to zero to avoid
* Item master/ item branch in JDE holds the information of whether the item is made or bought, lot control days, ABC category codes and commitment methods for sales orders.

**Purchasing and receiving**

* Purchase order can be entered manually (or) converted directly from MRP messaged.
* JDE can be configured to handle purchase orders different for stock items, service items, misc items through a set of order activity rules.
* Blanket orders will help to release long-term contracts to vendors and release purchase orders to finalize the delivery dates.
* Stock purchase order received by logistics function. Three-way matching is enabled to track purchase order usage, receipt matching and invoice matching.
* Receiving automatically updates the inventory records and update Accounts payables for vendor payment processing.

**Sales order processing and shipping**

* JDE can generate a customer quote based on the customer setup and pricing setup. The quote can be converted into a regular sales order later
* Customer orders can be entered manually (or) processed through EDI process. Customer order becomes the first level of demand for the company. The request date, quantity required and the correct product number are maintained by the customer service representative (CSR). System hard-commit the inventory at the DC, which can be overwritten by CSR in the specific sales order. Hard-commit reserves the particular item/lot to the customer demand
* JDE enables multiple ways of handling/processing sales orders for certain type of markets, customer group, internal or external orders, etc. through a set of order activity rules. (Example: military orders, major customers, sample orders, credit orders). This brings a tremendous flexibility to the order processing without making software code changes.
* Sales orders go through pick/pack/ship-confirm/shipping process and this can be configured for each of the order type.
* Order shipping relieves the on-hand inventory and releases any previous commitments
* In JDE, orders go through the end-of-day sales update process to generate accounting transactions (Accounts receivable, general ledger).

**Quality**

* JDE has power full lot control functionality. Lot control is configured at each item level and for each branch. System can make it mandatory to enter the lot number at the time of purchase order receipts (or) workorder completion.
* Using the lot control, user can inquiry forward or backward the usage of particular item/lot in the manufacturing and distribution of the finished goods. This tool is very important for quality compliance, company’s product recalls, vendor product’s recalls, etc.
* Products (or) materials can be placed on quality hold by authorized users. System takes away these quantities from its availability, and yet still show as on-hand.
* Planning system can be configured to re-plan supplies for certain types of hold codes.
* System follows FIFO using the lot expiry dates. System has tools to place item/lot on hold automatically, if the item pass the expiry date.
* Shop floor user cannot allocate or use an inventory which is on hold.

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