MANUFACTURING ERP SOFTWARE NEEDS ASSESSMENT CHECKLIST

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This needs assessment tool has two levels of checklists for 32 manufacturing software applications that are typically available in ERP software.

Level 1

The first level of needs assessment begins at the application level.

The Level 1 checklist defines and lists 32 applications to help you identify your current and future needs for ERP software to support your business process today and what you anticipate your business will be like in the future. You should not plan on changing the way you do business to accommodate the software you select. Rather, you and your team should be carefully examining software to see how it will support what your company wants to be and how the software will help you to get there.

Getting everyone on your team to "agree to agree" what the company needs the software to do can be harder than actually selecting the best possible software for your company. Your team needs to be structured well so that different areas of the business are represented. Those representatives should be looking to find an ERP software solution that is good for the entire company. Where that is an issue then it is the responsibility of the leader to make sure that the orientation of the team is for a comprehensive solution and not "islands of excellence."

The columns on the software application table below include the application name and a short description of its basic functionality. More information will be available in the Level 2 checklist. There is a column for you to check off the need as Current and the need as Future. You can check off one or the other or both. The combinations may include, per application, the current but not future need for an application, the future but not current need for an application, or the need for both. Current and future needs change due to strategic direction, life cycle end of a product or process, or addition of new product lines or markets.

As much as practical, the list is sequenced in the flow of a "typical" manufacturing company business process beginning with attracting new opportunities to quote work and ending with the accounting transactions and financial reporting that present the results of the business' operations.

Level 1

Module	Overview	We Need It Today	We Will Need It
Sales Forecasting	Track and utilize sales forecasts (customer or internal) to impact production planning, purchasing, and scheduling	☐	☐
Customer Relationship Management (CRM)	Different levels of CRM sophistication support lead/customer management, help desk, marketing, trade shows, etc. with integration to e-mail.	☐	☐
Estimating & Quoting	Summary or detailed BOM and routing development to provide quote of one or more products.	☐	☐
Product Configurator	Features and Options, Rules Based or Parametric capability to build product structure for quote or order entry..	☐	☐
Sales Order Entry	Entry of customer orders for conversion to work orders or product demand for make-to-stock pick.	☐	☐
Internet Connectivity	Ability of your software to connect to transactions recorded on your web site for customer orders or inquiries	☐	☐
Purchasing/Planning	From demand signal, visibility of purchase history and vendor pricing to create purchase orders including blanket orders.	☐	☐
Receiving	Receive against open PO's and transfer to incoming inspection.	☐	☐
Inventory Management	Visibility of transaction history, costing, and time phased availability of parts.	☐	☐
Formulas	BOM's for process industry functionality.	☐	☐

Module	Overview	We Need It Today	We Will Need It
Laboratory	Support of laboratory functionality including design of experiments.	☐	☐
Master Production Scheduling	Forward, Backward, Finite, and Infinite schedules visible to user with what if capability.	☐	☐
Manufacturing Requirements Planning (MRP)	Requirements planning showing satisfaction of demand from customers or to planned stocking levels.	☐	☐
Bill of Materials (Work Orders)	Listing of parts and sub assemblies used to make an end product, single- or multi-level.	☐	☐
Routing/Work Instructions	Tracking of a job through the factory with work centers bar coded for data collection.	☐	☐
Shop Floor Reporting	Tracking of time reporting and parts completion to support scheduling and job visibility.	☐	☐
Quality Assurance	Incoming, first piece, and final inspection with parts disposition capability and RTV.	☐	☐
Shipping	Relief of finished goods, tracking # integration, signal for billing, and bill of lading and int'l docs.	☐	☐
Invoicing/Accounts Receivable	Billing, credit memos, cash application, AR Aging and collection follow up.	☐	☐
Accounts Payable/Cash Disbursements	Match PO and receiver, schedule payment, view cash commitments, and debit memos.	☐	☐
General Ledger	Integration of subsidiary ledgers, journal entries, trial balance and financial reporting.	☐	☐

Module	Overview	We Need It Today	We Will Need It
Payroll	In house processing of work hours and salary commitments, direct deposit, and tax reporting.	☐	☐
Time and Attendance	Tracking work hours integrated to payroll calculations, visibility of who is at work daily.	☐	☐
Human Resources	Tracking of interview to termination of all aspects of an employee relationship to an employer.	☐	☐
Costing (Standard, Actual)	Support of multiple methods of determining what a product costs and valuing inventory.	☐	☐
Fixed Assets	Acquisition, maintenance, and depreciation of physical assets.	☐	☐
Service Management	Support of scheduling and delivery of remote activities for product installation and repair, warranty tracking, costing.	☐	☐
Warehouse Management	Specialized tracking of warehoused goods for storage, picking, packing, and shipping.	☐	☐
Project/Contract Management	Viewing multiple work orders as part of a contract. Support of % completion revenue generation. Customer deposits and progress billings.	☐	☐
Product Lifecycle Management	Engineering support of technical aspects of product design, revision upgrades, and control of drawings in concurrent engineering environments.	☐	☐

Module	Overview	We Need It Today	We Will Need It
Business Intelligence (Cubes)	Graphical/table reporting of business performance as measured by the ERP system.	☐	☐
International Transactions	Multi-currency and local reporting capabilities for needed overseas customers and company locations.	☐	☐

Once the selection team has agreed on how the application level table should be completed you can move on to more specifics about what is needed for each application in the scope of your current state and future stated business process requirements. The Level 2 checklist takes each of the applications listed in the Level 1 checklist and adds greater detail by presenting functionality typically offered in these applications.

The suggested functionality is not a list of all functionality offered by all vendors in the marketplace. Rather the functionalities listed are talking points for the selection team to use in developing the detailed analysis of your company's software needs to support your current and future business processes.

The checklist is designed to allow you to check off the need for functionality (regardless of current or future state designation) so that you develop a list of functionalities that can be discussed with potential software vendors.

Level 2

Application	Functionality	Need
Sales Forecasting	Download forecast amounts from a MS Excel Spreadsheet.	☐
	Based on a user defined number of prior periods.	☐
	Needs to be able to work with factors of seasonality.	☐
	Sub-total logical groupings of products to support internal management needs.	☐
	Drill down in the forecast to underlying data.	☐
Customer Relationship Management	Manage prospects, leads, customers, contacts. Complete integration of e-mail correspondence whether generated from CRM or from e-mail software.	☐
	Support the upload from event software and utilization of contacts identified at a trade show.	☐
	Track trade show costs, resulting contacts, proposals, business won, profitability, etc.	☐
	Support for marketing campaigns by searching contact and company database in CRM to identify recipients.	☐
	Access through drill down capability to the remainder of the ERP solution as appropriate. Example: answering customer questions about invoicing by accessing that function from CRM.	☐
	Advanced functionality for call center support.	☐

Application	Functionality	Need
Estimating and Quoting	Development of quick quote for an item that is not currently in the system for a customer not currently in the customer master file	☐
	Multiple quantities to quote with proper allocation of fixed and variable overhead to properly price different volumes.	☐
	Copy a previous quote and change for the new opportunity.	☐
	Attach text for terms of business to the quote when sent to the potential customer.	☐
	Develop new estimate by building detailed BOM and Routing for new opportunity.	☐
	Auto fax or e-mail quote from the user's desktop.	☐
	Quoting system supports either Available to Promise or Capable to Promise scheduling linkages.	☐
Product Configurator	Offers features and options or rules based product configurator capability to build properly configured end items during quote or order entry	☐
	Offers parametric (dimensional) configurator if needed.	☐
	Configurator software creates "intelligent" part number used to identify specific part and its inherent functionality.	☐
	Can be accessed from the Internet so web site user can create part to their specification on line.	☐
	Configurator software creates image of item being developed while configuration is taking place.	☐

Application	Functionality	Need
Sales Order Entry	Quote line items can be converted to an order while lines not selected by customer for order remain as an open quote or cancelled at the discretion of the user	☐
	Sales order can show your part number and customer part number if necessary	☐
	Blanket sales orders can be entered for items where the customer has committed to a long term quantity but smaller quantities will be purchased as identified by the customer during the year.	☐
	Customer is ordering for future delivery at specified intervals and specific quantities.	☐
	Software can differentiate sales order line items as commissionable or not commissionable for purposes of calculating sale commission.	☐
	All sales order line items have notes capability that can appear on the physical sales order or internally in the Sales Order Entry system.	☐
	Sales order converts to work order for eventual production scheduling	☐
Internet Connectivity	The ERP solution should provide secured access to information that can be utilized by potential or current customers including inventory availability, order status, product catalog and inquiries on a variety or subjects.	☐
	Remote user, primarily salespeople, can access the system securely to look up information, or enter orders.	☐

Application	Functionality	Need
Purchasing/Planning	Order requirements drive purchasing recommendations using either Net Requirements Planning (order demand against available inventory for each order or Material Requirements Planning (multiple orders at future times against time phased available inventory).	☐
	Purchase orders include your company part number and supplier part number.	☐
	Request for Quote for specific part numbers automatically generated for primary and secondary vendors identified in the item master file.	☐
	Demand from Net Requirements Planning System or Materials Requirements Planning system across all customer requirements grouped by supplier and combined on one purchase order with appropriate line item due dates cross referenced by sales order or work order number.	☐
	Purchase orders can be e-mailed or faxed from user's workstation.	☐
Receiving	Items received against open purchase orders with bar code or data entry.	☐
	Items identified for incoming inspection requirements or warehouse location for put away.	☐
	Receiving information used in automated three way match of purchase order, receiving documentation, and customer invoice for payment to supplier.	☐
	Items not received automatically entered in back order status or vendor relationship identified as no back orders allowed with auto notification to purchasing of undelivered items.	☐

Application	Functionality	Need
Inventory Management	Item master file contains sufficient information for item identification, item quantities status, costing information, and other fields of data that your Company needs to manage inventory effectively.	☐
	Item quantities are shown as on hand, on order, demand, and available. There are min-max quantity fields as well as minimum order quantity fields.	☐
	Lead times, primary vendors and unlimited secondary vendors are identified. Item vendors have fields to enter and update quantity price breaks. Vendor e-mail addresses for on-line RFQ issuance and evaluation.	☐
	Time phased visibility of each part with running balance going forward based on order demand and customer supply from open and planned purchase orders.	☐
	Preferred method of inventory valuation offered by the software solution including Weighted Average FIFO, Weighted Average LIFO, Actual, Average, Standard, Last, or Lot.	☐
Formulas	For process manufacturers this is the equivalent of a Bill of Materials. In the food processing industry this can also be known as a recipe.	☐
	Sufficient decimal places need to be supported. Small batches may require items with three to six places to the right of the decimal point.	☐
Laboratory	Software functionality supporting all testing and development activities that are performed in the laboratory of a process manufacturer or discrete manufacturer.	☐
	Verify support for Design of Experiments (DOE) functionality and well as sufficient support of tracking results.	☐

Application	Functionality	Need
Master Production Scheduling	Support of forward scheduling, backward scheduling, infinite scheduling, and finite scheduling methodologies as needed by your Company.	☐
	What if scheduling allows for recasting of the current schedule with one or more changes without finalizing the changes as the newest version of the schedule.	☐
	Support for scheduling of multiple locations on separate schedules or one schedule. Scheduling for multiple locations should include support for a routing where different operations of a work order are performed at different locations but coordinated on one master schedule.	☐
	If needed utilizes a time fence to segregate orders that are released to a schedule that will not change while orders on the far side of the time fence are tentatively scheduled.	☐
	The schedule can be adjusted for splitting lots to move forward a smaller quantity that identified on the work order while accommodating the scheduling of the remaining amount.	☐
Materials Requirements Planning	Ability to forecast into a defined period of time the demand for and supply of components in a Bill of Materials	☐
	Flexibility to set time periods by days, weeks, months based on the needs of your Company.	☐
	Capability to take forecasted demand for known needs and not consume the forecast if a new need is identified that adds to the forecast rather than uses a portion of what was already known.	☐
	Can be as simple as Net Requirements Planning where demand is for one order at a time.	☐

Application	Functionality	Need
Bills of Materials (Work Orders)	Single level or multi-level listing of all components and sub assemblies that comprise the structure of the top level or end item to be manufactured. The BOM should have unlimited levels of production (indentation)	☐
	BOM revision level must be tracked for all versions. System must support the ability to create a work order for a prior revision level of a BOM.	☐
	BOM should be able to accommodate a unique item in that version that is not in the item master file as a one time addition to the structure.	☐
	Capability to copy and edit an BOM into another BOM.	☐
	Capability to support where used search for any item in any of the BOM's in the system.	☐
	User should be able to drill down from the BOM (double click on the BOM line item) to see the item master file information including quantity details.	☐
	Provide for phantom items. Verify each software vendor's definition of a phantom item in comparison to your Company's definition.	☐
Routings (Work Instructions)	Includes sequenced operations that present the details of how the top level item will be produced. Sequences internal and external (sub-contract) operations (work centers) and activities (first piece inspection) to represent production.	☐
	Routings need to be flexible to support splitting of a work order quantity with a smaller quantity moving through the remainder of the production process and costs properly matched to the newly structured activity.	☐
	Unlimited notes capacity to support work instructions and the attachment of pictures or CAD drawings to support the manufacturing process.	☐

Application	Functionality	Need
	Recognition of cellular activities where routing steps include more than one individual in a group or routing steps identified separately but produced in a multi-workstation cell.	☐
	Closing each routing step individually or closing selected routing operations causes the previous routing steps not closed to close simultaneously with identical quantity complete.	☐
Shop Floor Reporting	Automated collection of data for labor time and parts completed, scrapped, or held for lot splitting using bar code data collection technology.	☐
	Operator can split time between two or more work orders (pieces of equipment) with either an actual or default allocation of time.	☐
	Offers sufficient flexibility of reporting to allow operator to identify scrap but also identify a code for scrap reason.	☐
	Operators have codes for charging time to activities other than work orders (Safety Committee, Materials Review Board, Waiting for Inspection, etc.)	☐
Quality Assurance	Capability to record results of incoming inspection, first piece inspection, in-process inspection, and final inspection results.	☐
	Support of inspection failures and other issues into a Material Review Board with resolution recorded in the software for analysis at a later point	☐
	Vendor performance ratings for quality of product delivered, on time delivery, correct quantity received, and other agreed upon measures of specific vendor quality.	☐
	Functionality for Return Material Authorization (RMA) with complete tracking of disposition of product returned, cross reference of product replacement, warranty tracking of the returned part as well as warranted components of the returned part.	☐
	Support of specific ISO requirements for documentation as defined in the Quality Manual of your Company.	☐

Application	Functionality	Need
	Lot and serial number traceability with support for when the serial number is assigned to the finished part (beginning or end of the process).	☐
	Tracking of serialized components in the completed part for possible warranty claims.	☐
Shipping	Support for shipping with common carrier for on-line access to relevant information from UPS, FedEx, DHL, or a common carrier for full or LTL truckloads.	☐
	Preparation of all documentation associated with shipping such as Bill of Lading, packing slip, and international documentation as required for export activities.	☐
	Shipping activity, including freight cost where applicable, drives billing of shipment in the associated accounting software on a batch or individual shipment basis.	☐
Invoicing/Accounts Receivable	Linkage of shipping actions to drive invoicing	☐
	Real time or batch updating of invoicing to Accounts Receivable functionality.	☐
	AR Aging detail sufficient to support collection activity.	☐
	Flexible data entry for on-account customer payments and NSF check adjustment to the Accounts Receivable information.	☐
	Month end closing, ability to post to a future month, and number of open months satisfactory for your Company's unique circumstances.	☐

Application	Functionality	Need
Accounts Payable/Cash Disbursements	Support for the three way matching of purchase order, receiving reports, and supplier invoices, either manually or automated to validate payment of the supplier invoice.	☐
	Support for adjustments of supplier invoices for subsequently discovered quality problems causing rejection of supplied parts or costs for modifications that will be absorbed by the supplier as an invoice adjustment.	☐
	Real time or batch linkage to the general ledger of accounts payable and cash disbursements transactions.	☐
	Cash management supported by an aging of accounts payables that allows easy selection of open supplier invoices by as of date or individually selected invoices.	☐
	Month end closing, ability to post to a future month, and number of open months satisfactory for your Company's unique circumstances.	☐
General Ledger	Ability to support financial information of more than one company as required by your Company's unique circumstances.	☐
	Flexible general ledger chart of accounts structure with sufficiently long number structure to accommodate divisions, departments, staff, etc.	☐
	Journal entry flexibility to support recurring, reversing, and other entries with sufficient description capability.	☐
	Structured as a batch or real time system relative to your Company's need for General Ledger detail needs.	☐
	Month end closing, ability to post to a future month, and number of open months satisfactory for your Company's unique circumstances.	☐
	Ability to enter a GL account budget and allocate a portion of each actual transaction to a budgeted amount in more than one GL account.	☐

Application	Functionality	Need
Payroll	Ability to use the payroll capability offered by the ERP vendor or gather payroll data effectively to interface to one of many payroll service bureaus.	☐
	If payroll is processes internally, make sure the system can handle all overtime calculations and fringe benefits, particularly if union contract terms are involved.	☐
Time and Attendance	This is not the same as shop floor data collection but a related timekeeping system on which payroll can be based. Confirm how the proposed solution handles early and late clock ins as to time docked from pay or time not compensated for.	☐
	Determine compatibility of your current automated time and attendance system with the software proposed if in-house payroll will be calculated and paid.	☐
Human Resources	Verify the scope of HR software offered. HR software can manage activity and transactions from the time the position was identified as needing to be filled until the employee who fills the position leaves employment of the Company.	☐
Costing	Financial statement costing methods such as standard and actual need to be evaluated based on your current methodology.	☐
	Costing of inventory can include Weighted Average FIFO, Weighted Average LIFO, Average of quantity on hand, Last Cost, Actual Cost (bought to the job, no inventory), and Lot Cost. Ensure that they method you use is supported by the solution(s) under review. Confirm any changes in method of inventory valuation with your Company's accountant.	☐
Fixed Assets	Support for all asset additions, useful lives, and multiple methods of depreciation.	☐

Application	Functionality	Need
Service Management	Support for separate scheduling of service calls and allocation of resources of service staff to support calls.	☐
	Segregation of service parts from regular inventory in a separate warehouse location. Warehouse locations also include service vehicles or service cases where parts and tools are stored.	☐
	Determine whether installation of new equipment is tracked in service management software or is the last operation in the equipment build routing.	☐
	If appropriate understand how the proposed software will share staff between production and service responsibilities and how movement of a worker from production to service trips reduces capacity in the factory.	☐
Warehouse Management	Review flexibility of warehouse location designations. If needed understand how warehouse physical locations are then broken down as warehouse shelf or area locations and how both are linked when necessary.	☐
	Determine warehouse pull structure between primary, secondary, and overstock locations when large quantity orders are involved.	☐
	Verify that needed pick, pack, and ship functionality is available based on your Company's detailed needs, particularly if your Company is delivering to a major retailer.	☐
	Verify support for activities like walking sequence for pulling orders, zone picking, partial picking on incomplete line items, and early picking of future orders.	☐

Application	Functionality	Need
Project/Contract Management	Verify support for business processes such as progress billings and percentage completion calculations that impact financial policies and practices.	☐
	Flexibility of quoting system to support a major proposal for a project or a contract that includes significant text, images, and schedules.	☐
	Verify that routing and BOM structures support multi-phased activities. If a military contract make sure that support of production includes rules of the customer for work breakdown structure data collection, reporting, and billing. WBS may require special software modules.	☐
Product Lifecycle Management	Identify need for support of New Product Development activities by the Company's Research & Development group. This includes product definition and management of the steps required to bring the product to market.	☐
	In Engineer-to-order companies ensure that PLM supports full management of technical drawings including initial drafting, revisions (definitions), concurrent engineering activities (your engineers and the customer's engineers), vaulting, and other controls	☐
	Verify how PLM links drawing revisions to manufacturing activities and how manufacturing activities (as designed vs. as built) are linked back to the PLM system.	☐
Business Intelligence	Understand the full scope of how the proposed Business Intelligence system will add value to your Company's need to manage and sort data. Be sure the offered BI capability is not "overkill" for your Company. Identify who in the business may be able to learn the BI capability to continue to utilize the tool for the Company. Understand how many "cubes" come with the base system and the vendor's interest in and cost for creating new ones.	☐

Application	Functionality	Need
International Transactions	Verify the utilization of foreign currency calculations in the proposed software and how those valuation principles impact costing and inventory valuation.	☐
	Make sure all the foreign currencies your Company needs are included in the system under review.	☐
	Verify that the international capabilities of the software under review support “local requirements” for financial and compliance reporting.	☐