

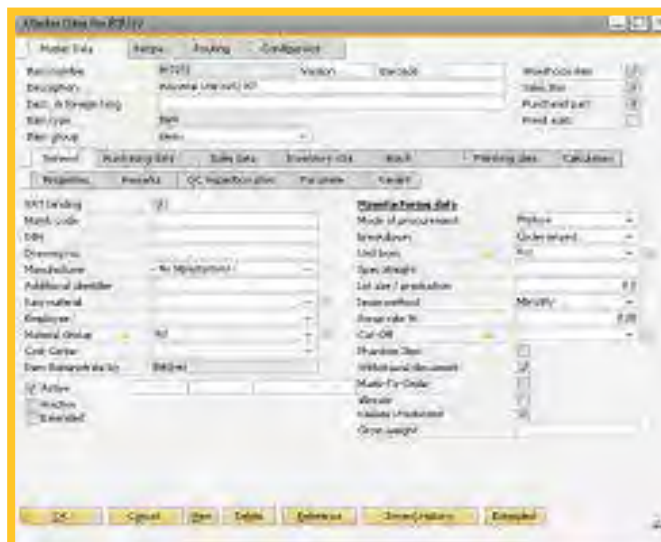


SOFTENGINE WHITEPAPER SERIES

Advanced Manufacturing

ERP Solution for Small and Mid-sized Enterprises in Discrete and Process Manufacturing

SAP Business One supports manufacturing planning, control and implementation in small and mid-sized manufacturing companies in different ways – as much as necessary and as little as possible – with precise to ensure the efficiency and flexibility in the daily business. The business process of the customer takes the center stage. The advanced manufacturing module provides best practice - oriented methods and workflows that fit for major manufacturing industries like metal and plastics processing, machinery and apparatus, electrical/electronic equipment, automotive, packaging, chemical engineering, food.



“For starters, with real-time inventory tracking, SAP Business One has helped us manage our inventory better, which has dramatically improved our cash flow. All the information we need is at our fingertips and there are no more huge piles of paper to sift through. Our reporting is accurate, input errors have been greatly reduced and we rarely incur penalties for late shipments, improper labeling, etc. from our larger customers, which used to be an issue for us. Our customer service performance has also gotten much better with our ability to keep customers informed every step of the way about the status of their orders and shipments.”

- Shawn M. Herzinger, Vice President, Products and Operations, P3 International

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Industry-specific extended master data in particular

- Item
- Bill of Materials / Recipes
- Routings
- Operations
- Resources (groups, machines, personnel, tools)
- Cost centers
- Tool management

Materials management:

- Multiple material requirement models
- Additional options for the control of goods receipt
- Retroactive postings based on demand to work order
- Unscheduled postings based on need to work order
- Extended batch processing and serial number processing
- Extended inventory
- Mobile data collection for warehouse/bin location

Production order management:

- Extended MRP II functionality allows a fully integrated roughcut capacity planning as described below
- Create orders: different workflows to create work orders can be defined. The customers can select the appropriate methods according to their business processes.
- Comprehensive planning and execution of external production and supply parts



Master Data enhanced for Logistics and Manufacturing

The source data form the basis for the implementation of company-wide business processes and all possibilities for gathering information and making decisions. The advanced manufacturing module complements SAP Business One provides the information which small and medium-sized companies need for manufacturing management, cost accounting, and controlling

MRP II and Production for different Strategies / Organizations

The manufacturing functions include specific strategies/functions for materials management: order and stock-related production, mixed and variant production, and the necessary functions for the appropriate production planning and execution of manufacturing orders. In addition to the usual standard features, some specially extended areas shall be mentioned.

A screenshot of a software interface, likely SAP, showing a detailed production planning table. The table has multiple columns, including dates, quantities, and status. The data is organized into several rows, with some rows highlighted in yellow. The interface includes various tabs and buttons, typical of a business management system.

Detailed Planning (Pool Monitoring)

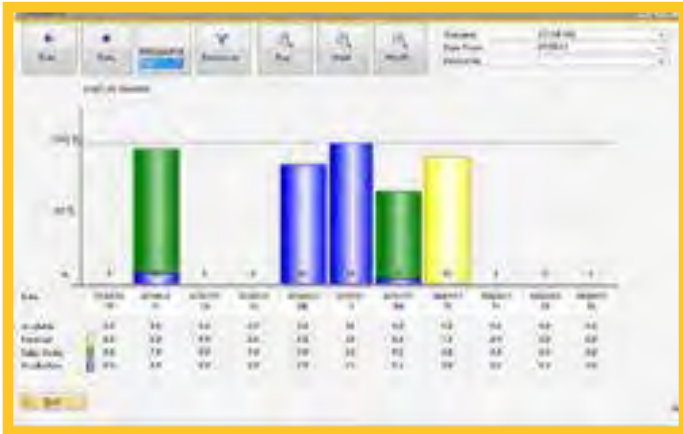
Pool control is an efficient way to plan resource groups or resources. The pools can be defined with a specific volume of work. By scheduling the production orders, these pools are filled with operations. Flexible reports and graphs provide the necessary transparency to process the right jobs at the right time.

- Automatic pooling with start date/progress of the operations
- Operations available, first planned, behind schedule
- Easy rescheduling of operations
- Rush orders
- Recalculation of utilization pools using priorities
- An online check of material availability

Rough Cut Capacity Planning

The functions for rough general planning include the areas of material and capacity requirements planning.

- Rough planning of material requirement Parameterized MRPII methods, e.g., general planning and simulation of partial orders or annual budgets. For more information, see materials management / MRPII.
- Capacity planning: Rough-cut capacity planning shows transparent, used, and unused capacities for resources.
 - By machine, machine groups, personnel
 - With graphic tools for evaluation and reports



Quality Control

In addition to fulfilling high-quality standards, most small and medium-sized manufacturing companies must also document them. SAP Business One offers efficient functions which allow for planning and executing the necessary quality tests during the material flow, from initial procurement across manufacturing until shipment. Various kinds of test orders can be assigned to external as well as internal working steps (operations).

The module includes, among other things:

- Capture and analyze customer complaints, suppliers, internal production
- Quality control by orders from goods receipt through production to delivery
- Release/block Check, release, block batches, and serial number parts
- Manage quality control plans
- Monitoring Expiration dates
- Order history



Precalculation

Whether you want to prepare estimates for standard products with different lot sizes or customer-specific designs for quotations or manufacturing orders, the precalculation makes other possibilities available to you.

Highlights of this flexible module are:

- Calculation scheme freely definable
- Automatically create and manage calculation structures
- Simulate alternative scenarios by changing the formula structure
- Calculation and reporting of marginal costs and total costs and profit contribution
- Production orders can be created from the calculation structure
- Batch calculation with the creation of pricelists
- The history of calculation data is parameterized such that a highly flexible and differentiated assignment of work in process is possible.
- Several calculations in parallel
- Comparisons of target/actual with the drill-down procedure of order for assemblies up to individual movements
- Batch calculation with a selection of different evaluation criteria
- Flexible differentiable WIP using the chart of accounts from SAP Business One

Concurrent and Post-calculation

Compared with the planned expenses or the profit margin, the actual accumulated costs of a work order are provided. Whether as complete, marginal costing or contribution margin can be determined by the unique design of the calculation scheme. Further, the data can range from simple material lists to the fully-integrated manufacturing. All applications are possible. Efficiency is maximized.

- Allows the creation of multilevel decision structures with variables, formulas, rules, wildcards, graphics, etc.
- Automatic generation of a user-friendly menu for configuring the product
- For more complex variant products or applications,

shortcuts to information fields (e.g., items, BOMs / recipes, routings) are available. Their contents/values can be influenced with vast potential to be effective in generating the desired product variant.

Mobile Solution Warehouse Management

The functions of warehouse management are also provided for mobile devices (Windows Mobile). These communicate via wireless LAN directly to the server. Therefore, the information on mobile devices is always up to date. The mobile data collection is versatile in various combinations with other modules.

Key functions:

- For logistics companies, SAP Business One with or without Warehouse Bin location management, with or without SCM
- As a complete solution with manufacturing
- Warehouse information, booking process as posting, charge-off, transfer, goods receipt
- Inventory and Quality control



Advanced Planning and Scheduling (APS)

APS is used for detailed planning in enterprises if order times, lead times, transition periods, capacity allocations, availability of resources are critical parameters in the value creation process. By graphical visualization and comparison of all activities with resources, a high level of transparency is achieved, where and how the intervention is required.

Some of the most essential features:

- Work order and resource-oriented customizable graphical views and charts
- Various ways to order and operation sequence planning and optimization with/without capacity limits
- Dependencies in multilevel orders with cross-checking the delivery dates are considered
- Simple selection or change of resources such as machinery or tools
- The integrated material availability calculation can be enabled/disabled and reports automatically missing parts during every planning and scheduling process.

Multiple Warehouse / Bin Location Management

The warehouse/bin location management extends the standard functionality of inventory management on the one hand and to the nature of the stored goods on the other hand. It can be used as a single module with SAP Business One.

- Extended warehouse management
 - With/without consideration in (MRP)
- User-defined warehouses/bin locations with up to 3 dimensions based on vector graphics
 - Different to- and from-bin strategies
- Kind of stored goods
 - With batch/serial number or expiration date
 - Inventory with parameterized counting lists and inventory registration

Machine Data Collection, Direct Machine Connection

Based on connected machine data, collection terminals automatically transmit start and end time or duration, the status of the operation, set up, runtime, cycle time, downtime, breakdowns, produced quantities of first-pass quality, scrap. Process data and quality data, e.g., temperature, pressure, and unique software application like Intellution, can also be processed. These integrations are implemented and analyzed case by case.



Cost Accounting, Machine Hour Costing, Marginal Costing

The cost accounting feature enables you to set up a classical operational accounting system based on European models, but not only this! It facilitates the presentation of all values and quantities from SAP Business One General Accounting, Payroll, and Manufacturing. As a result, you can expect to see the customers, orders, and products you have earned money from over a certain period from the extended contribution margin calculation.

Key functions:

- Cost accounting
- Cost Element and Cost Center accounting
 - Divide cost elements into fixed and variable costs by cost center
 - Budget non-accrued incidental cost elements
 - Re-allocate cost centers
 - Short-term Income
- Contribution costing
 - Customer- or order related
 - Profit contribution by period, customer, order, item
- Machine Hour Rate Calculation
 - Total cost rates and marginal cost rates per machine
 - Calculate hourly rates by planned and actual hours

Time Recording & Production Data Collection

If the times of your employees are of value for you and a variety of uses, transparency is necessary, an attendance module should be used. If you need an up-to-the-minute overview of your manufacturing orders or if you want low-administration feedback of such operating data as times, conditions, quantities of goods, etc., for example, via Barcode, then the operational data collection is the right choice for you.

- The hardware and communication technology of KABA Benzing or PCs with bar code readers are supported, other technology available on request
- Enhanced master data and Models for Time and attendance
- A variety of information on attendance, absences
- Information about jobs to be produced and the status of operations, availability of material required
- Comprehensive data collection about processes, materials, yield, scrap, quality data, etc.
- Pool info: this advanced manufacturing functionality provides the possibility of working in the factory with no paper.
 - Each worker can access the available operations in his area.
 - Information about the status of the required materials is displayed.
 - Workers can easily open shared documents or pictures.

Mobile Solutions (Web Apps)

Any handset can access the advanced manufacturing features with a browser (cell phone, smartphone, or industrial scanner). You are always up to date with the current data available on your handheld device, and you can intervene directly. One-click setup: The required web server and the web application are set up and configured automatically. You can decide which employees or which device has access to specific apps. The number and type of apps will be extended continuously.

We can provide an own integrated WEB-Server for XML and HTML-5 applications. Thus, full compatibility is guaranteed for present XML based devices like KABA Benzing as well as for future development in HTML 5 standard.

Mobile Solutions Key Functions:

- Warehouse management
- Supports bin location management and all material transactions
- Warehouse information, inventory
- Quality control operations
- Direct print of labels and reports
- Time recording, Production data collection
- Pick & Pack

Supply Chain Management (SCM)

The advanced SCM feature supports sales order and purchases order management, including blanket orders and all automated transactions per EDI industry standards. The advanced SCM feature is tailored for the automotive industry for companies with own manufacturing and refiner/logistic service supplier and trading companies. Product delivery can be released manually or electronically from blanket orders.

- Sales / Delivery with blanket orders, delivery schedules, detailed planning horizons, scheduling delivery proposal, Pick Pack, cargo.
- Purchase / Goods receipt with blanket orders and scheduling/control of supplier's goods receipt
- Communication management / EDI supporting the industry-specific standards VDA, Odette, EDIFACT, and ANSI X.12
- Packaging structure and container management

Project Management

Project cockpit

- Multilevel project structures
- Comprehensive access to tasks, activities, and areas like budget, purchasing, sales, production, service, attachments (documents)
- From overviews to single documents

Range from simple to complex projects

- Definition of simple projects with tasks, milestones, and resources until networks including engineering, production, suppliers, and customers

Multilevel scheduling

- Tasks, milestones, detailed plans, MRPI/MRP II, APS (Advanced Planning and Scheduling)
- Bar and Gantt charts until bidirectional integration and usability of MS-Project

Budget and controlling

- Multilevel budgets at level project
- Collection of all documents from sales, purchasing, internal/external manufacturing, services, and all sorts of costs/expenses

Dashboards for manufacturing companies based on SAP Business One

SAP BusinessObjects Edge BI as a Business-Intelligence Software for mid-sized companies contains solutions for operative reporting, flexible Ad-hoc-queries and analyses, dashboards and visualizations, scheduling, and budgeting.

Dashboards

- Added value trend
 - Analysis: per order and item groups, per time unit, planned and actual values, forecasts
 - Progression: diagrams of periods
 - Order controlling
- Productivity
 - Progression based on attendance times and confirmed work orders
- Purchase analyses, for example:
 - Delivered quantity vs. scrap
 - Delivery times and compliance
 - Complaint reasons
- Cost analysis of work orders
 - Labor time: planned costs vs. actual costs
 - Materials: planned costs vs. actual costs
 - Comparison monthly by item groups

With the advanced dashboards feature, you get a fast and consolidated overview of your company's performance. Enhance the efficiency of your company by getting the best possible analysis of your data, examining different scenarios, simulating new business opportunities, and taking immediate measures if necessary.

The SAP® Business One application offers a single, affordable way to manage your entire business – from sales and customer relationships to financials and operations. Designed specifically for small and midsize, it helps you streamline processes, act on timely information, and accelerate profitable growth.

About Softengine

Founded in 1996, Softengine is a recognized leader in providing collaborative business solutions to the wholesale distribution, import, and manufacturing industries. Softengine services 170+ clients, both domestic and international. Softengine develops our proprietary software solutions, delivered by U.S.-based staff, hosts, and maintains all customers in our cloud environment, and we implement all our projects.

Our mission is to empower every customer with a scalable SAP system that accelerates their success! Softengine is committed to the continued success of both our clients and our organization. Our client's success is our success. We deliver truly flexible business solutions that improve operational efficiencies and drive competitive advantage. This is accomplished by offering our client's the latest cutting-edge technology tools that help make better decisions.

