

White Paper

# SAP<sup>®</sup> Business One / be.as Solution Suite

The comprehensive Solution for Small and Mid-sized Manufacturing Enterprises



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# 1 Overview

In today's competitive business environment of intensified competition, small and midsize businesses (SMBs) require access to electronic business management that is not only tailored to their specific business needs but also economically adequate. SAP® Business One satisfies those requirements by bundling comprehensive business functions in a simple and excellent value integrated solution.

For manufacturing businesses the beas GmbH, an accredited SAP Business One Solution Partner, offers a specific over-all solution. The beas GmbH deals with the branch specific configuration of SAP Business One and develops additional highly integrated standard software products under the brand be.as®.

For further information [www.sap.com](http://www.sap.com) and [www.beas.de](http://www.beas.de)

## 1.1 Introduction

SAP® Business One supplemented by the be.as® modules provides an integrated solution that is specifically tailored to small and midsize manufacturing businesses. It provides not only fast and easy access to all business information but also the additional reports and documents that are required for decision making in all divisions of your company like sales and distribution, purchase, accounting, production etc.

That combination also safeguards your investment as a future-proof business solution.

SAP Business One / be.as may be implemented rapidly: the introduction takes only from a couple of days to a few weeks, depending on the complexity of the case. Using the beas GmbH and SAP Rapid Implementation Methodology, the introduction and use take place quickly and efficiently. Milestones, extensive checklists and branch specific sample processes establish the basis that is optimised with the customer in each case at project start.

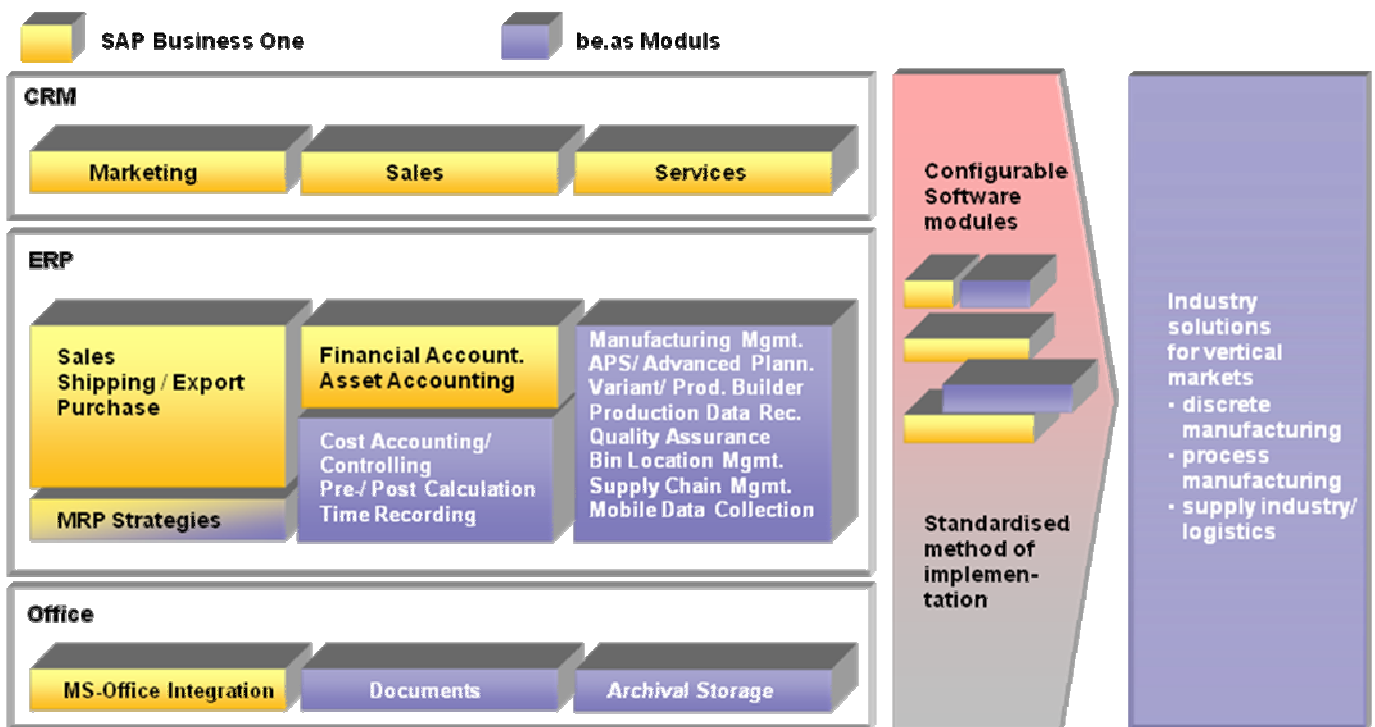
Easily configurable standard programs are available for the transfer of old data.

The installation, introduction and service of SAP® Business One / be.as are carried out by the beas GmbH or an authorised partner.

## 1.2 Overview SAP Business One / be.as Solution Suite

Midsized manufacturing businesses are in need of high productivity and profitability. In addition reliable planning, efficient order processing and all-embracing transparency are so important to know from which products, which orders and which customers real money is earned.

For this and further requirements SAP® Business One offers all useful information and decision making possibilities. And be.as supplements modularly what you need for your manufacturing management and cost accounting / controlling - it fits together.



**SAP® Business One together with the be.as modules also provides for example:**

- Creating offers that are backed by a pre-calculation which gives comparison data for the products to be manufactured (Full costs, marginal costs and contribution margin).
- Creating production orders directly from the customer order; early material availability check and material ordering and early scheduling of external parts.
- Assured and fast reaction on deviations due to production data acquisition (PDA).
- Information of final costing on the run, after order completion and compared to the quotation on the achievement of objectives.
- Costing provides cost accounting as well as contribution by period, customer, order or item using transaction data from financial accounting, payroll, etc.
- SAP® Business One and the be.as modules make all necessary data available to make sound entrepreneurial decisions in the e-Business age.
- The add-on modules for manufacturing and cost accounting use the business management standards of SAP®

### 1.3 Target Markets

#### 1.3.1 Supported Major Business Processes

In addition to providing general functionality the SAP® Business One / be.as solution is best suited for companies with production that specialize in

- Engineering / make-to-order / projects
- Assembly / configure-to-order / variant production
- OEM / supply industry / automotive
- Process manufacturing

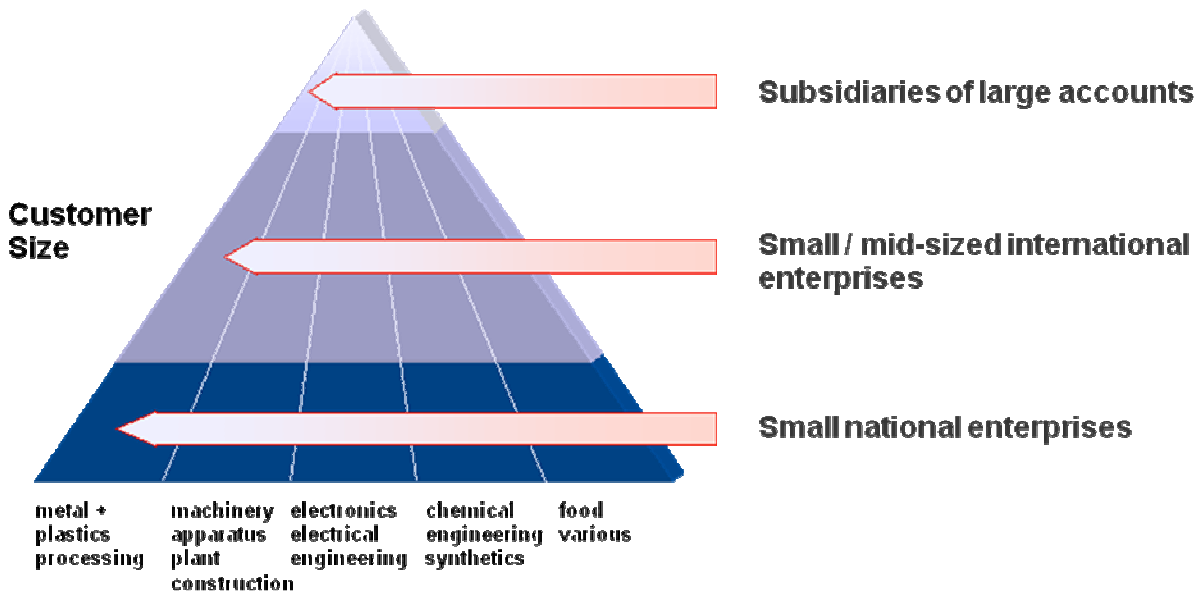
The configuration of industry specific solutions happens at 3 levels:

- Based on the composition and activation of the needed be.as modules the major business processes are covered
- Based on the parameter settings a pre-packaged solution for a specific vertical market can be delivered
- Based on additional customization using the be.as tools a highly optimized solution for a customer can be created.

#### 1.3.2 Industries and Size of Companies / Types

The SAP® Business One / be.as solution can be implemented for companies of various industries or size / type.

Reference models and pre-configured solutions assist in a fast and efficient implementation.



## 2 be.as Industry Solutions

### 2.1 Master Data

#### 2.1.1 Items

- Extended data structures for
  - Production Management
  - Materials Management
  - Calculation
- Multilingual texts and information
- References for master data and order data
- Multiple units of measure and conversion factors
- Item structure including bills of materials and routings
- Material groups
  - Assign material groups to items
  - Manage overhead allowances per material group
  - Where used list of groups of material in items
- Materials
  - Assign materials to items
  - Specification of concentration / dilution to convert different quantity units
  - Reference list of materials used in items
- Cutting / scrap
  - Scheduling of cutting tables for modules and single components
  - Scrap calculations in operations
  - Increased scheduling capacity in Capacity Planning

#### 2.1.2 Bill of Materials / recipes

- Record, manage and copy single-tiered or multi-tiered bills of materials / recipes
- Manage bills of materials in master data (standard products) and/or order-related data (order-specific product modifications or complete order-related production)
- Phantom assemblies

#### 2.1.3 Routings

- Record, manage, and copy routings as master data (standard products) and/or in order-related data (order-specific product modifications or complete order-related production)
- Cross-reference with the basic data and order data

#### 2.1.4 Operations

- Record, manage, and copy operations as master data and/or in order-related data
  - Parallel / alternative work centres and tools
  - Cross-reference with the basic data and order data
  - Tool depending lead times
  - Utilities
  - parallel and overlapping transitions
- Up to 4 types of costs and operation costs (labour costs) at marginal cost and full costs
- Operation with several resources (units or %)
- QA test plan
- Material scrap factor at operation level
- FDC rules
- Attachments

#### 2.1.5 Resources

- Manage work centres
  - Single work centre
  - groups
  - machines
  - employees
- Manage work centre related capacity models
- Cross-references for work centres to master data and order data
- Management of the corresponding cost rates
  - Fixed/variable
  - Up to 4 types of costs per resource at marginal and full costs
  - Separate labour costs

#### 2.1.6 Cost Centres

- Cost centres enhanced to
  - Enable data collection
  - Control data for cost calculation

#### 2.1.7 Tool Management

- Manage tools or similar resources with / without own capacity
- Cross-references to master data and order data
- Useful life / operation time calculations
- Acquisition costs, operating costs, modification costs, maintenance costs

- Calculation and amortization data to consider in pre- and postcalculation

## 2.2 Materials Management

### 2.2.1 Scheduling

- Gross/net Scheduling by item
- Information on inventory, scheduled Goods Receipt/Goods Issue, referencing production or customer orders or purchase orders
- Including / excluding forecast

### 2.2.2 Multiple Material Requirements Models

- Different strategies considering standard bills of material / routings, precalculation structures and/or work order specific structures, with/without forecast
- Determination of material requirements gross/net with generation of the order proposal lists for production and purchasing
  - Immediate execution, creation, scheduling and dispatch of production orders
  - Immediate execution and creation of purchase orders
- Backward order scheduling included

### 2.2.3 Additional Options for Control of Goods receipt

- Automated incoming goods transaction with printing of goods receipt documents and/or labels

### 2.2.4 Retroactive Postings based on Demand to Work Orders

- An automatic debit of the bills of material, a booking of the finished products as well as the closure of the order results from the input of the production quantity

### 2.2.5 Unscheduled Postings based on Demand to Work Orders

- Notification of unplanned obtaining of materials and hourly rating on demand

### 2.2.6 Extended Batch Processing

- Automatic numbering can be selected
- Monitor batch tracing
- Create / print batch certificates

- Various statistical reports
- Retroactive postings of batches

### 2.2.7 Extended Serial Number Processing

- Automatic numbering can be selected
- Monitor serial number tracing
- Create / print serial number certificates
- Various statistical reports
- Retroactive postings of serial number parts

### 2.2.8 Extended Inventory

- Supports batches, serial number parts, warehouses / bin locations
- User-defined inventory count lists
- Update inventory data
- Periodic inventory

### 2.2.9 Warehouse / Bin Location Management

- User-defined warehouses / bin locations with up to 3 dimensions based on vector graphics
- Different to- and from-bin strategies
- Supports extended batch and serial number processing
- Diverse analysis

### 2.2.10 Mobile Data Collection for Warehouse / Bin Location Management

- For WLAN- and Windows Mobile-based devices
- Warehouse information
- Stock movements
  - Receipts from / issues for production
  - Goods receipts / issues
  - Stock transfers
- Goods receipt for purchase orders
- Inventory
- Quality control

### 2.2.11 Material Coding and Labeling

- Integration of the *Codesoft* software (labelling system)

## 2.3 SCM (Supply Chain Management)

- Please ask for separate White Paper
  - SCM for Automotive
  - SCM for suppliers
  - SCM for logistics

- Supported standards
  - VDA
  - Odette
  - EDIFACT
  - ANSI X.12
  - EANCOM

## 2.4 Production Order Management

### 2.4.1 Create Production Orders

- Create sales order-specific bills of material and routings
  - Automatically created using order proposal lists
  - Via demand of a customer's order
  - Via calculation structures
  - From be.as product configurator or variant configurator
  - Single-tier or multi-tier
  - With/without standard bills of material and standard routings
- Different order types
  - Customers order
  - Warehouse order
  - Repair order
  - Sample order
  - Overhead order, etc.
- References to customer order and customer order line

### 2.4.2 Manage / Change Production Orders

- Dashboard monitoring of production orders
- Directly into the work order structure, including
  - Selectable levels of detail
  - Multi-level bills of materials
  - Associated routings
  - Reports for planned vs. actual data comparison
  - Costing values with planned vs. actual value comparison
- Print production documents
  - Routing cards, scheduling cards, pay slips
  - Material requisition cards or removal bills of material
  - Barcode for automatic feedback
  - Easy and customized design of documents
- Release production orders
  - Print production documents
- Record production time
  - Manually
  - Via integrated production data collection

- Via order structure
- Control and revise entered labour time
- Record last operation
  - Automatic booking and material issue posting, depending on the parameterization of the posting
- Increase / decrease work in progress

### 2.4.3 Outsourcing

- Generation of purchase orders
- Management of parts provided incl. delivery notes
- Special handling for goods receipt for purchase orders
- Management and recognition of external work centres and routings

## 2.5 Capacity Planning

### 2.5.1 Capacity Planning and Scheduling (at rough cut and detailed Level)

- Available, used and unused capacities
  - By machine, person, group, tool
- Reports and utilization graphs
- Select alternative resources (work centres or tools)

### 2.5.2 Pool Control (at detailed Level)

- Decentralized control by work group or work centre (machine or person)
- Automatic pooling per
  - Work centre
  - Utilization rate
  - Start / status of operations
- Rush orders
- Operations available, first planned, behind schedule
- Reschedule operations
- Recalculate pool utilization
- Online check of material availability

### 2.5.3 APS (Advanced Planning and Scheduling)

- Integration of a specific graphic tool for visualization
  - Workload of resources, capacity constraints
  - Gantt diagram of work order / project
  - Drag and drop
- Scheduling of work order data periodically and/or online, selection of
  - Planning interval

- Customer and work order, priority
- Work centre
- Item
- Order oriented planning and scheduling
  - Forward scheduling
  - Catch up, rescheduling, compress / expand, determining delivery date
- Resource oriented planning and optimization
  - Parallel scheduling of work centres, people, tools
  - Availability check of tools
  - Rescheduling to alternate resources
- Material availability check
  - Scheduled inventory
  - Physical inventory

## 2.6 Quality Control

- Manage quality control plans
- Quality control by orders for
  - Goods receipt for purchase orders
  - Stock transactions
  - Production order or operation
  - Expiration date reached
- Integration of batch and serial number management
  - Per batch, quantity or part / sample
  - Release / block batches and serial number parts
  - Certificates
- Order history
- Capture and analyze complaints of
  - Customers
  - Suppliers
  - Internal production

## 2.7 Product Configurator

- Menu controlled management of product characteristics and variations
- Configuration structure of master data contents user-definable
  - Parameters
  - Variables
  - Formulas, strings, logic
  - Pictures / drawings for visual assistance
- Assignment of the configuration structure to
  - Items
  - Bills of material
  - Routings
  - Functions of Variant Generator, see below
- An easy to use interface with guidance for the user created automatically
- Usage / application

- Sales quotation / sales order to calculate price and generate description of products
- Generate precalculation for bottom-up calculation and sales margin
- Record a customer order line for transfer to production
- Generate production orders
- Create new master data (bills of material, routings)

## 2.8 Variant Generator

- Can be used without Product Configurator
- Structure
  - Manage values and variables, e.g., selection tables and formulas
  - Allocate to fields of bills of material and routings
- Function
  - Screen with automatic query of the variables
  - Create bills of material and routings for use in precalculation and/or production

## 2.9 Precalculation

- Based on standard bills of material and routings
- Calculates up to 4 different quantities
- Calculation scheme freely definable
- Automatically create and manage calculation structures
- Simulate alternative scenarios by changing the formula structure
  - Operations
  - Materials
  - Assemblies, in-house production or outsourced production
  - Allowances for overhead costs, transportation charges, packaging, losses in total revenue, profit, etc.
- Calculation and reporting of
  - Marginal costs and full costs
  - Profit contribution per production hour
  - Profit contribution in proportion to net revenue, etc.
- Calculation data can be used for sales quote and sales order processing
- A production order can be created from the calculation structure
- Batch calculation
  - Periodic calculation of in-house parts
  - Creation of price lists
  - History of calculation data

## 2.10 Product Cost Analysis / Post Calculation / Work in Progress

- Based on order bills of material and routings
- Same structure as for Precalculation possible
- Designed as concurrent and post calculation
- New calculations can be run at any time
- Planned/actual value comparison from post calculation to precalculation
- Drilldown from the order to bills of material, routings and transactions
- Batch calculation with selection of production orders and valuation criteria
  - Can be used as basic variant to value work in progress
- Work in progress
  - Using chart of accounts (WIP accounts) of SAP Business One
  - Generates account postings caused by all relevant be.as material and time transactions

## 2.11 Cost Calculation

### 2.11.1 Cost Accounting

- Cost Element and Cost Centre accounting
- Divide cost elements into fixed and variable costs by cost centre
- Budget non-accrued incidental cost elements
- Manage and allocate distribution keys
- Allocate cost elements to cost centres directly or based on their distribution codes
- Allocate cost centres to fixed, variable or full costs
- Print cost centre reports to determine hourly wage rates
- Manage unlimited number of cost accounting charts (e.g. by department)
- Summarize cost elements to cost element groups
- Summarize cost centres to cost centre groups
- Use all transaction data (values und entries) from
  - Financial accounting
  - Payroll
  - Production (material and effort), etc.
- Execute preliminary profit and loss statements
- Copy budget and / or copy actual for next year's budget

### 2.11.2 Marginal Costing

- Customer and order-related marginal costing
- Convert post calculation values to marginal costs in the profit contribution statistics
- Analyze profit contributions by
  - Period
  - Customer number
  - Order number
  - Item number

### 2.11.3 Machine Hour Rate Calculation

- Cost element planning for machines
- Overhead cost calculation
- Full cost rates and marginal cost rates per machine
- Calculate hourly rates by planned and actual hours

## 2.12 Time Attendance and Access Control

### 2.12.1 Supported Data Collection Technology

- The following functionality of be.as time and production data collection is based on the *Enterprise Collection Technology* of KABA Benzing
- Alternative collection terminals with partly reduced functionality
  - PCs with barcode readers
  - Other collection and communication hardware/software on demand

### 2.12.2 Master Data

- Human resource management
- Day models
- Any number of shift models
  - Shift rules and scheduling
  - Rotation of weeks
  - Automatic / semiautomatic shift selection
  - Manually select shift depending on the settings
- Possibility to specify fixed number of monthly hours or automatic calculation
- Set up to 3 idle times per shift type
- Unlimited number of period rules with tolerance
- Rounding possible upon login or logoff
- Special rounding rules
- Flex-time management
- Multiple flex-time counters
- Vacation account
- Sick leave account

- Unlimited number of user-defined attendance types

### 2.12.3 HR Management, Reports

- Manage vacation, attendance, and shifts
- Edit absence and attendance time
- Unlimited number of absence and attendance entries possible per day
- Edit clock-in, clock-out data with change log
- Create barcoded employee cards
- Record all data in detailed entry masks or in fast-entry lists
- Different configuration possibilities for any number of terminals (PC-based)
- Present or absent employees
- Multiple statistics and reports
  - Overview and detailed reports of presence, absence of groups or individuals
  - Statistics about productivity / overhead of groups or individuals

## 2.13 Production Data Collection / Production Control

### 2.13.1 Additional Master Data

- Time types can be allocated to
  - Productive time
  - Downtime
  - Overhead costs
  - Set up / Runtime
  - Pay type (e.g. regular or overtime)
  - Cost centre, work centre (machine)
- Mandatory entries with rules / definitions

### 2.13.2 Reporting of Production Orders

- Report labor time
  - Part, end or in-process message types
- Terminal control in production, display order queue by machine/ machine group
- Linked to attendance recording considering time models
- Record orders and operations using barcode
- Start and end time or duration
- Based on attendance, shift rules and idle times taking into consideration downtimes and breakdown periods start and end time are automatically calculated
  - On multiple machines
  - On multiple work orders
- Additional reports for
  - First pass quality
  - Scrap
  - External operations

- Assignment / reassignment of cost centres

### 2.13.3 Machine and Process Data Collection

- Based on connected machine data collection terminals automatically transmit of
  - Start and end time or duration, status of operation
  - Set up / runtime / cycle time / downtime / breakdowns
  - Produced quantities of first pass quality / scrap
- Process / quality data, e.g. temperature, pressure, in application of special software like *Intellution* (machine integration to record process data)

### 2.13.4 Mobile Data Collection

- KABA Benzing offers a software for mobiles which allows a dialog-oriented data collection process in place. The data is transmitted from the PDA directly to the application via WLAN, GPRS, UMTS or a docking station.
- Depending on the mobile device used a barcode reader is also supported

### 2.13.5 Material Management Integration

- According to parameter settings
  - Material can be booked immediately
  - Finished goods can be booked automatically
  - Debit/Credit is done semi-automatically

## 2.14 Document Management and Archiving

- Integration of *Novaline* software
  - Automatic document archiving and indexing of print-outs
  - Full text indexing
  - Extensive search (key words, full text, index, time periods, etc.)
  - Scanning and archiving of documents including indexing and OCR text recognition
  - Automatic allocation of documents by using *ScanCode*
- Integration of other regionally used solutions on request

## 2.15 Workflow and Event Management

- Event-based activities and workflows
  - Events of SAP® Business One and be.as
  - Event scripts for more complex activities and workflows
  - Can generate 1 message and up to 3 different decisions with follow-up actions
- Catalogue with predefined events / actions
  - Be.as provides a standard catalogue with predefined actions

## 2.16 be.as Technology / Tools

### 2.16.1 be.as Report Viewer

- Based on *Crystal Reports™*
- Multilingual, integrated language tables
- Paper tray selection
- Dynamic number of copies
- Incl. sending by e-mail or FAX
- Preconfigured forms for
  - Quotation and sales orders
  - Purchase orders
  - Production orders
- Only for trained customers / partners

### 2.16.2 be.as Framework

- Based on script language and editor
- Efficient modification of
  - SAP Business One and/or be.as screens
  - Without using SAP Business One
  - Without using MS .NET
- Quick draft and integration of
  - New screens
  - Mandatory fields and validation
- Easy change of business logics
- Changes remain release compatible
- Only for certified customers / partners



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