Process Manufacturing with SAP Business One
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Company Overview

CompuTec S.A, is a growing privately owned business comprising of over 50 employees, with 4 offices located across Poland. We are recognized as one of the top SAP Business One Gold partners within the region, as well as one of the country’s leading providers of IT business solutions and related services.

We have formed strategic partnerships with innovators and leaders of industry such as SAP, Microsoft, Cisco, IBM and EMC to name but a few.

Our business practice comprises of a customer focused team of certified consultants and engineers who deliver value based solutions, addressing the needs of our customers and partners.

With over a decade of experience we have the knowhow to implement end-to-end solutions ranging from network infrastructure, to desktop productivity tools, to ERP and customer specific software solutions.

The Best of Both Worlds

SAP Business One a solution for small and medium sized businesses and subsidiaries of Large Enterprises, includes all the processes you need to run your entire business. Its a powerful solution, simple to use and affordable. It provides complete business management functions covering financials, sales, customers, inventory, and operations.

But, as a process manufacturer, depending on the level of your business complexity and sophistication driven by customers, product, industry and regulatory compliance, an additional solution is often required to cover your specific industry requirements.

ProcessForce a CompuTec solution, developed specifically for the process manufacturing industry and fully integrated with SAP Business One can bridge this functional gap. Therefore bringing you the best of both worlds, SAP’s strength and security and CompuTec’s process manufacturing domain expertise.

This next generation manufacturing solution designed from the ground up, built 100% utilising the SAP Software Development Kit (SDK). Has been developed on the latest version, thus taking advantage of SAP’s business platform and latest innovations, creating a functionally rich and easy to consume industry solution, benefiting both customers and partners.

Industry Solution

"SAP is excited to see CompuTec become a Software Solution Partner (SSP) for SAP Business One. Their solution “ProcessForce” provides a functional rich solution for the Process Industry. Our SSPs, like CompuTec, are the backbone of SAP Business One’s success in helping more than 30,000 small enterprises world-wide become best run businesses. " says Patrick Carpreau, Senior SSP Manager EMEA, Software Solution Partners, SAP.
To provide value to all our customers, present and future, we have combined our manufacturing expertise, and industry knowledge, with validated business requirements from our existing customer base to build a solution focused on four key process manufacturing industry verticals:

- Consumer products
- Chemicals
- Life sciences
- Building materials

**Global but Local**

With an established global footprint, SAP Business One is available in 25 different languages, and localisations for 40 different countries.

ProcessForce, has localisation built into its core, taking advantage for example SAP Business One configuration and display settings, such as master data, multi-dimensional accounting and languages.

ProcessForce is available in all the languages that are supported by SAP Business One via CompuTecs’s ‘Fast Start’ translator service.

“We understand that our “Fast Start” translations are not 100% accurate, but when you are looking to expand into new markets offering such an option, where the partner or customer only has to change between 10% to 20% of the field strings, significantly reduces the investment time and increase GTM timescales “says Martin Gore, Global Sale Director, CompuTec S.A.

**Its all about Standards**

With more than 32,000 customers globally, SAP Business One offers a set of standard tried and tested business processes and functions. ProcessForce application extensions leverage
these standards to operate within the framework partners and existing customers who may wish to upgrade to ProcessForce are used to. Examples include:

- SAP Business One offers item management by warehouse, hence, ProcessForce provides:
  - Bills of Materials by warehouse
  - Production orders by warehouse
  - Quality control by warehouse

SAP Business One offers three valuation methods:

- Standard
- Moving average
- FIFO

ProcessForce product costing methods mirror the same valuation techniques and principles.

“The Dutch market is full of process manufacturing enterprises and for a while we had no such offering. With ProcessForce we now have a solution to strength our position within this vertical which is a competency of our business. We have deep knowledge of manufacturing and together with ProcessForce we can provide real added value to many food and beverage, and plastic molding manufacturing companies” says Hans Numan, Managing Director, PlanLogic B.V.

Industry Requirements

At the heart of the ProcessForce solution resides a bill of manufacturing. This is a concept which allows process manufacturers to define the resources that are consumed and produced as part of the production process. As a process manufacturer you need the “ease of use” to define your products as simple recipes/formulas or require the flexibility of complex recipes/formulas to define the component/ingredient relationships.

Depending on your micro-vertical industry needs and the products you produce, there are other factors which have to be taken into account for example:

- Yield and factor calculations
- Co-Product and By-Products production
- Scrap management

Variables which affect inventory levels, product costs and recipe accuracy, all of which impact the bottom line.

“Our initial focus will be to work with SAP to become a certified solution and leverage the tools SAP provides to support your go to market activities. Afterwards our goal is to be part of the “Enabled by SAP Business One” logo program, therefore becoming a recognized premium SAP industry solution” says Martin Gore, Global Sale Director, CompuTec S.A

Customisation

Like SAP Business One, ProcessForce can be adapted to meet your unique or changing business requirements without creating a heavy, ongoing IT burden. In fact to adapt ProcessForce the application uses the same tools as SAP Business One, therefore the learning and education curve is kept to a minimum, thus reducing the total cost of ownership.
Efficiency and Enterprise Profitability

There are many reasons enterprises change their current IT application landscape and invest in new solutions. Examples may be the business has changed or there are a number of business problems that affect the efficiency and profitability of the organization.

With our process manufacturing experience we understand your functional needs and business problems, and hence we have built appropriate solutions to enable change, focus on gaining clarity across your business and improving operational efficiency. Below is such an example

<table>
<thead>
<tr>
<th>Statement</th>
<th>Business Issue</th>
<th>Who is effected?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our production process produces a number of recyclable and non-recyclable products.</td>
<td>We can save on purchasing costs and inventory quantities by utilizing recyclable products. But just collecting and integrating the data is our current systems is just difficult.</td>
<td>Purchasing&lt;br&gt;Warehouse&lt;br&gt;Production&lt;br&gt;Finance&lt;br&gt;Managers</td>
</tr>
</tbody>
</table>

ProcessForce bills of manufacturing provides the means to define the amount of recycle product that can be used within the production of the product.
Solution Map

The combined SAP Business One and ProcessForce solution map, provides a visualisation of the application components, vertical extensions and tool utilisation.

### Manufacturing Methods

Depending on your mode of manufacture, ProcessForce production planning functions provide multiple methods for managing the supply and demand of products and materials across a number of different modes of operation. The flexibility of the solution caters for the following types of production:

- Make to Forecast
- Make to Stock
- Make to Order
- Assemble to Order
- Repetitive
- Mixed Mode
ProcessForce Product Data Management solution, provides a methodology to define all the information and compliance data that is required to fully describe a product.

- Revisions - define status with valid to and from dates
- Batch Details - allocate batch number counters, and rules such as expiry date, consume by and shelf life
- Ingredients - define ingredients, nutrients, allergens and pack sizes versus serving size data
- Phrases - define for example EU Risk and Safety phases as part of MSDS and other such documentation
- Text - define for example storage and handling methods, hazard instructions, and safety text
- Classifications - categorize products for example toxic and non-toxic
- Groups - group similar products together for example acids and chemicals to aid analysis and reporting
- Properties - define for example physical and chemical characteristics
- Attachments - to define and link for example MSDS, work instructions, safety sheets, videos and other such media files
An extension to product master data, ProcessForce provides the necessary functions to define nutrient and ingredient information. Combined with allergen, percentage daily intake values and pack versus serving size, ProcessForce provides the necessary data to produce ingredient listings and declaration statements to support the process of creating product labels.

- **Template** - define a list of nutrients or ingredients that are copied into the product master data to allow for quick data entry
- **Business Partner** - record the business partner that supplies the ingredient
- **Specification reference** - record the vendors or industry specification for an ingredient
- **Specification date** - record the date of the specification
- **Category** - define a category to group like ingredients e.g. sugars, fats, vegetables, oils
- **Allergens** - define a list of allergens and record which ingredients contain such allergens
- **Pack and Serving sizes** - define a list of pack sizes, alternative unit of measures and corresponding serving size
- **%Daily Value** - define a list of nutrient and ingredient percentage daily intake values
- **Alternative code** - define common, scientific or Codex Alimentarius INS or E A U numbers
- **Reports** - Ingredient listing, declaration statement, and percentage daily value by pack and serving size

![Ingredient Declaration Diagram](image-url)
**Bill of Materials/Formulations**

ProcessForce provides a simple but flexible solution for creating process orientated bill of materials.

- **Items** – define materials within the product structure
- **CoProducts** – define a product that is usually manufactured together with another product
- **ByProducts** – define material of value produced as a residual of the production process
- **WipItems** - define work in progress materials for reporting and visibility purposes
- **Scrap** – define the scrap that is produced during production
- **Simple or Product Formulas** – define simple or formula based relationships between materials and parent products
- **Scrap, Yield and Factors** - define value and percentage uplifts for materials
- **Revision** - define revision specific product structures
- **Phantoms** - define phantom product structures
- **Multi-level** - define multi-level product structures
- **Attachments** - to define and link to detailed instructions, procedures, videos and other such media files
- **Warehouse** – define the warehouse where the product is produced
- **Back flush Location** – define the warehouse where material is back flushed
- **Revision** – define revision number specific bill of materials
- **Project** – define the project associated with this product for reporting purposes
- **Distribution Rule** – define the distribution rule for financial transactions
- **Cost Dimensions** – define the dimensions for reporting purposes
- **Issue Type** - modify the picking method of inventory transaction per product
- **Mass Replace** - replace selected materials and bill of materials within another material

![Bill of Materials](image)
Product Routings

Product Routings enables user to define the information required to document and define the production process.

Machine control setting and properties such as machine speed, temperate and pressure may also be defined within the routing data, allowing for data integration to MES applications and PLC’s devices.

- **Resources** – define machines, labour and tooling and other such resources that are used in production
- **Operations** – definition of the production activity
- **Routing** – the combination of operations and resources to define the total production process
- **Properties** – define additional information e.g. tooling settings, machine setting such as temperature, pressure, fill rate
- **Constraints** – define cycle quantity throughput, number of similar machines, and operation to operation overlap with percentages
- **Production time** – define queue, set-up, run time, and stock time, each with a different rate of measure e.g. fixed hours, minutes per unit, units per second
- **Attachments** - to define and link to detailed instructions, procedures, videos and other such media files
- **Calendar** - define production and resource calendars
- **Alternative Routings** - define for a product alternative routings
- **Material / Operation** - link the consumption and production of materials to process operations
ProcessForce Product Costing has been built to take advantage of all the costing methods provided by SAP Business One. Thus providing a solution which supports the costing, analysis and finance controlling operations.

- Methods - Standard, Moving Average, FIFO
- Revision - calculate the cost of a product on a revision basis
- Flexibility - cost products based upon a combination of costing methods
- Costing Calculation - based on manual, price list, and calculation
- Factors - include scrap, yield and factors within costing roll-ups
- Cost Categories - define cost category for valuation, what-if simulation and analysis
- Types - define material, resource and labour costs
- Time - define different costs for the elements of production time, queue, setup, runtime and stock
- Overhead - define fixed and variable overheads as a value or a percentage
- Cost allocation - proportion production costs across products, coproducts and byproducts
- Product analysis - calculate and review costed bill of materials and routings
- Visibility - pre, during and post calculation of manufacturing orders
- Variances - calculate and manage costing variances
ProcessForce Manufacturing Orders are used to plan, execute and record production activities.

- Order dependent Bill of Material and Routing - allows for the modification of the product structure and production process to manage every day changes that may occur within production rather than changing company standards
- Method of creation - manually, via Sales Order, Forecast, MRP and Sales Order back-to-back
- Revision - create manufacturing orders that are revision specific
- Series - create and use different document series
- Demand Allocation - link multiple Sales Orders to production supply orders
- Dates - enter the required, planned start and planned end dates
- Schedule - forward or backwards to calculate the planned start or planned end date and time
- Warehouse - the default warehouse where production will occur
- Material vs Actual Quantity - monitor the order and item quantity status
- Material Shortage - check available and shortages of stock within planned warehouse and across all warehouses
- Traceability - review all the documents associated with picking and receiving inventory
- Issue Type - alter inventory issues methods from manual to back flush and vice versa
- Operation Times - review operation times and overlaps
- Reporting - report on the status change of operations and record actual production time
ProcessForce provides flexible back flush methods to meet the diverse needs of manufactures. This flexibility is based on the Bill of Material and Routing which allows for product by product configuration of what and where is back flushed. While at a Manufacturing Order level can cater for temporary changes in inventory picking processes. Methods include:

- Materials
- CoProducts
- ByProducts
- Scrap
- Warehouse
- Batch trace materials - based on a FIFO basis
- Resources
- Tooling
- Labour
Available to Promise Pegging

Making the decision of how much inventory and when inventory can be delivered can be a difficult task, but with Available to Promise (ATP) the user now has the details to make informed decisions. With visibility of all the supply and demand details the user can review the pegging details to understand why ATP is making inventory quantity and date recommendations.

MRP Pegging

Similar to ATP pegging, the application also provides MRP pegging, therefore the user has the visibility to understand why MRP is making material quantity and date recommendations for produced and purchased materials.
ProcessForce Batch Control and Traceability functions, provide the necessary process and controls to trace the genealogy of a product. While control functions manage the day to day operations of working with traceable products.

- Batch and Serial number - define number formats and counters
- Shelf Life - define the life period of a product in days and hours
- Expiry or Consume control - define batch management policy
- Expiry Date - manual or calculated date based on shelf life period
- Consume By
- Inspection date period - define the period between inspections
- Inspection dates - manual or calculated dates for future inspection dates
- Warning inspection and expiry date - define the warning period for batch review
- Batch properties and values - properties inherited from Product Master Data
- Quality control results - actual test result values stored against batch properties
- Batch genealogy tree - forward and backward historical view
- Recall and Audit Report - list of customers and batch recall reconciliation
- Drill down - transaction and document traceability navigation
- Inventory and Batch reports
ProcessForce Quality Control solution, provides the tools and processes to manage the quality process from purchase goods receipt to customer delivery.

- **Test Protocol** - define standard templates to be used within the quality control process
- **QC Test** - record the activity and results of the tested properties
- **Status and Date** - manage the QC test cycle
- **Non Conforming Materials Report** - record specific actions and generate report
- **Inspectors** - define individuals performing QC activities
- **Reason/Defect Codes** - define analysis codes and groups to provide structured data for analysis and reporting purposes
- **Resources** - define the resources to perform the testing e.g. microscope, x-ray machine, weight scales
- **Items** - define the materials that are required to perform the test e.g. gloves, safety glasses
- **Frequency** - define the frequency and method of testing
- **Transactions** - define the process point where the QC test will be performed
- **Alerts** - business alerts to communicate to inspectors when tests are required to be performed
- **Instructions** - define instruction steps for performing the test or recording additional notes
- **Attachments** - to define and link to detailed instructions, procedures, videos and other such media files
- **Warehouse** - define tests for specific warehouse
- **Project** - define tests as part of a project
- **Analysis** - dash board and reporting
Complaint Management

Normally a function of the Quality Control department, ProcessForce Complaint Management solution is an end to end business solution, which provides a structured method in capturing and managing the life cycle of a complaint regardless if the origin is from a customer, vendor or an internal department.

- Complaint number - reference number for tracking activity
- Complaint type - record the source of the complaint Customer, Supplier or Internal
- Complaint codes - define reason codes and groups to provide structured data for analysis and reporting purposes
- Status and date - manage the complaint cycle
- Sample tracking - track the progress of customer and supplier sample returns
- Transactions - record the transaction type and number provided by the complaint
- Batch number - search and record the batch numbers
- Serial numbers - search and record the serial numbers
- Notes and attachments - record extensive notes and link attachments
- Quality control - create and link a quality control test to the complaint
- Product Recall - flag the complaint as a basis for a product recall
- Dash Board and reporting
To improve the accuracy of data, and to streamline production and inventory process flows, ProcessForce provides a fully integrated data collection and label printing solution. The solution also covers SAP Business One functions.*

- Labels - define label layouts and required data, integrated with Zebra label printing software
- Goods receipt from purchase order* – record goods inwards inventory based on a purchase order
- Goods receipt* – record goods inwards inventory not based on a purchase order
- Goods return from goods receipt* – return inventory back to a supplier
- Licence plate – create license plates
- Licence plate review – display the build of a license plate
- Stock transfer* – inter-warehouse inventory transfers
- Pick order – pick inventory for sales, shipping and production orders
- Pick receipt – record products, coproducts, byproducts and scrap inventory produced during the production process
- Goods issue to production* – issue material to production orders
- Goods receipt from production* – record products, coproducts, byproducts and scrap inventory produced during the manufacturing process into the warehouse
The ProcessForce solution has been developed utilizing the SAP Business One 8.8x SDK, thus taking advantage of the User Defined Objects methodology. Based on this development technique ProcessForce forms and transactions behave in the same manner as forms developed by SAP. Therefore partners and customers can create additional value added enhancements to solve implementation specific requirements using standard SAP Business One customisation tools.

- Behavior & Navigation
- Use existing features & functions
- Extend vertically
- Minimal application footprint
- UDO developed
- User defined fields
- Formatted searches
- Document numbering
- Permission model
- Licensing model
- Crystal Reports Print layouts
- Transaction notification
- Field label changes
- Solution SDK & API
Utilising CompuTec’s SaaS based Translator tool, integrated with Google’s Translate API, the ProcessForce User Interface (menus, forms, dropdown lists and system messages), are available in the same 25 languages that are supported by SAP Business One.

This simple but effective tool speeds up the activity of translating. From a partner perspective, with ease of change and testing directly on their local machine, and for CompuTec, immediate update into the application architecture within the development lab.

When functional enhancements are added to existing forms, the user can filter to view fields with no Translator. Therefore saving time in having to search through all the forms fields to locate empty translations.
Company Vision
The world we live in and the pace of innovation is constantly changing. To continue and succeed as a business through the next decade and beyond, we must have a clear vision of our strategic direction to shape our business for the future and stay ahead of the curve. Our vision is to become the recognized industry leader for providing software solutions for process manufacturing enterprises.

Mission Statement
Our mission is to take advantage of the latest and future business platform innovations from SAP and deliver value based solutions for SME’s and subsidiaries of Large Enterprises that are functional rich and easy to consume. Our solution is built utilizing the latest SDK, reporting and analytics tools from SAP. Thus providing a foundation which changes not only how software is developed, but more importantly how enterprises consume the solution to foster business change and enable growth for the future. We will strive to consistently deliver high quality solutions, set a benchmark in customer and partner satisfaction and be a catalyst for change in our ever changing world.

CompuTec S.A.

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