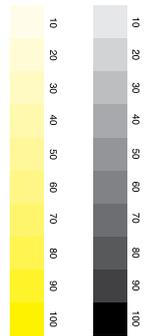




SYSPRO ERP for

# Mixed-mode Manufacturing



**SYSPRO**<sup>TM</sup>  
Simplifying your Success

# About SYSPRO

SYSPRO is an internationally-recognized, leading provider of enterprise business solutions. Formed in 1978, SYSPRO was one of the first software vendors to develop an Enterprise Resource Planning (ERP) solution. Today, SYSPRO is a global business solutions vendor, represented on six continents and by more than 1600 channel and support partners. Over 15 000 licensed companies across a broad spectrum of industries in over 60 countries trust SYSPRO as the platform on which to manage their business processes.

Customer focus is a core component of SYSPRO's corporate culture and is one of the key reasons why SYSPRO maintains a strong leadership position in the enterprise application market. By focusing on people and building lasting relationships with customers and partners, SYSPRO consistently excels at guiding customers through all aspects of their implementation and ongoing usage. The aim is to deliver world-class software that gives customers the control, insight and agility they need for a competitive advantage in a global economy. As such, SYSPRO provides a unique combination of robust, scalable technologies that ensure minimal risk and a high return on investment.

SYSPRO is continually developing remarkable software that simplifies operational effectiveness and keeps customers in control of their businesses. Our vision is focused on meeting customer needs today and in the future.

The most integrated, uncomplicated  
and effortless business software solution  
for small and medium enterprises



# SYSPRO in the mixed-mode manufacturing environment

SYSPRO provides full visual management across mixed-mode production organizations, enabling the seamless synchronization and integration of a variety of manufacturing techniques all within one fully integrated software system. SYSPRO's outstanding flexibility ensures a comprehensive set of tools to help you plan, record, track and control your output.

## SYSPRO solutions for mixed-mode manufacturing business challenges

- Ensure quality of raw materials and monitoring during production
- Improve forecast accuracy
- Manage dynamic production schedules
- Manage product and part traceability
- Manage raw material lead times
- Manage the introduction of new products
- Plan, execute and control production based on a wide variety of manufacturing modes
- Track material and operation flow through manufacturing



## Ensure quality of raw materials and monitoring during the production process

SYSPRO enables you to implement continuous improvement by helping you to identify problems and points of waste as they happen. Raw materials and manufactured products often vary in grade and quality so, for many industries, tracking and control are essential to reduce waste, scrap and defects.

SYSPRO allows you to specify approved manufacturers for raw material supplies, and supplier performance can easily be tracked via queries and reports. In addition, SYSPRO facilitates the tracking of materials from purchase through production to customer, thereby maximizing quality control and providing you with the tools to manage product recalls, should they occur.

You can flag purchased items as requiring inspection so that during receipting, detailed records of counts, inspection, scrap, rejects and returns are recorded. Units in inspection are visible, but unavailable for use until accepted into stock. Similarly, SYSPRO Work in Progress inspection gives you the tools to inspect manufactured product quality and, depending on the results, select to receipt, scrap or rework quantities.



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One of the key questions for us was and still is: ‘Can I tell my customers when they can expect their goods even when I don’t have them in stock?’. The system’s Available to Promise feature was therefore one of a number of a key deciders for us in choosing SYSPRO.

- John Wells, Managing Director, AJ Wells  
Posted by AJ Wells

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## Improve forecast accuracy

**SYSPRO provides tools to enable you to track and evaluate your forecasts, as well as to identify the possible causes of forecast errors. These tools assist you in optimizing your forecasts to produce the best possible outcome with minimum forecast error.**

While forecasting is, by definition, an inexact science, its purpose is to improve the quality of predictions and thereby enable the fine-tuning of the balance between supply and demand. In forecasting environments where product ranges and configurations are extensive, bills of material are complex and raw material and component lead times are long, improved forecast accuracy is essential to minimize inventory holding and obsolescence costs without compromising customer service and brand loyalty.

The Inventory Optimization suite of modules enables the entry of manual forecasts, as well as the automatic generation of forecasts via a variety of forecast algorithms, including those that compute for trends, seasonality and cyclical events. In addition, the module provides a competition forecasting method (also known as focus forecasting or the tournament method) which attempts to select the most suitable forecast algorithm, based on a selected error measurement and your SYSPRO sales history data. This enables you to compare results to determine which method is the most suitable for any particular item, whether you forecast products at code, revision, release or warehouse level. A tracking signal is used to indicate when the validity of the forecast might be in doubt; those items with high forecast errors are highlighted and can be reviewed and adjusted as required.

Forecast accuracy depends not only on the regular evaluation of the forecast error, but also on the integrity and nature of the source data. In SYSPRO, forecast accuracy is enhanced through the ability to automatically filter and adjust outliers, as well as to manually adjust forecast base data for quantitative and qualitative factors. Lost sales can also be included in the demand profile.

## Manage dynamic production schedules

To gain the competitive edge, you must have the agility to respond to market demands at all levels of operation, without increasing costs and waste, and sacrificing efficiency. Whether you use line, batch or project processes, your scheduling activities must balance competing objectives. This includes the efficient management and execution of re-scheduling activities when business priorities and plans change or unexpected events occur.

Having the capability to create and execute an achievable schedule requires a comprehensive view of the current situation and available resources, as well as the tools to perform efficient re-scheduling if necessary. SYSPRO's visual scheduling products provide this capability to suit all levels of sophistication and complexity, from basic manual drag and drop to automatic algorithm-driven scheduling and changeover optimization.

For batch process environments, SYSPRO Factory Scheduling provides the planner with an interactive decision support tool that helps balance demand and resource availability. Optimization is enhanced through the consideration of priorities, constraints and conflicts, as well as sequencing and synchronization requirements. Automatic forward, backward and bi-directional scheduling is available, along with manual intervention. The customizable graphical interface enables quick and easy identification of schedule loads, job and operation statuses and links, and resource availability. One-click schedule performance metrics, as well as the ability to run, save and compare schedules, provide what-if capability and enable the scheduler to choose the best option for the current circumstances. On-the-fly extraction of work-to-lists and other reports is via standard reports, as well as the user-friendly report writer, while features such as emailing and web publishing of information enable the current schedule and metrics to be viewed by all stakeholders.

Whether you operate a simple scheduling environment requiring single-constraint finite scheduling, or a complex environment requiring multi-constraint and rules-based finite scheduling, SYSPRO can help you optimize your scheduling activities with its Graphical Planning Board, Factory Scheduler or Advanced Scheduler.

## Manage product and part traceability

SYSPRO facilitates the recording of traceability and quality data on materials and products, from purchasing through inspection, manufacturing, manufacturing inspection, stocking and sales; thereby enabling real-time tracking of supplier performance, quality and warranty metrics. Our serial tracking and lot traceability features provide powerful queries that enable both upward and downward searches by stock code, lot number/serial number and transaction type, and flexible reporting enables the fast extraction of trace reports.

Whether it's a regulatory or customer-driven requirement, the capability to ensure part traceability, from material origins through manufacture to final destination, is integral to guaranteeing products against defective materials and workmanship. Because SYSPRO's lot traceability and serial tracking features are fully integrated with the rest of the system, they afford full centralized visibility into the origins, build and sales destination of products. This in turn ensures automated real-time tracking and the rapid tracing and analysis of the source of defects should they occur.

In addition, SYSPRO's Engineering Change Control module enables complete management and traceability of changes to product designs, while the Return Merchandise module provides consistent handling of product returns and customer complaints, as well as analysis data for improvement programs.



HACCP is a lot like ISP Certification in that it is very detailed and demanding. Excellent tracking of products by lot is critical for us. SYSPRO gives us the tools to meet the current and future HACCP requirements.

- Barbara-Ann O'Brien, Manager,  
Bonte Foods  
Posted by Bonte Foods



## Manage raw material lead times

Strict management of raw material lead times is vitally important in controlling overall procurement costs and attaining customer service level targets. SYSPRO enables you to monitor quoted purchasing lead times against actual supplier delivery performance and to flag reliable suppliers of specific raw materials as certified in the system, as well as to track blanket purchase order contracts.



Component-to-operation linking and component offsets facilitate the implementation of JIT and LEAN purchasing principles for raw materials. In addition, inventory order point indicators, such as reorder point, minimum/maximum levels and safety stock provide the tools to help you mitigate problems associated with unreliable supply of long-lead time items.



Very simply, SYSPRO offered in-depth manufacturing functionality, as well as strong financial and distribution capabilities. We also like the ability of SYSPRO e.net solutions to extend the enterprise.

- Timothy Harryman, Director of Information Systems,  
Osment Models  
Posted by Osment Models



## Manage the introduction of new products

**SYSPRO provides tools to streamline and track the introduction of new product designs and amendments to existing designs, along with relevant costings. A built-in workflow engine - SYSPRO Workflow Services (SWS) - enables you to streamline and manage the integration and execution of the entire design-to-market process, including the relevant activities that fall outside the SYSPRO system.**

Constant innovation is one of the key factors to remaining competitive, and ongoing research and development to design new and better products is integral to the industry. Your ability to design new products and modify existing designs, as well as improve time-to-market, is critical to remaining competitive and profitable. Efficient management of the processes involved is essential to the success of new product launches.

Engineering Change Control (ECC) enables you to apply strict control over your product design activities by providing an integrated rules-based electronic workflow system with full version control, security and auditable history. ECC gives you the tools to record and track new and modified product design and process changes, assess the impact of these changes on costs and associated data, and control the change routing and approval processes.

The Families and Groupings and Forecasting modules enable the entry of manual forecasts, as well as the automatic generation of forecasts via a variety of forecast algorithms - or via proxies: forecasts for new products based on a percentage of the sales history of a similar superseded product. Combinations of forecasts and other sources of demand, such as sales orders, can be configured as the demand drivers for new products in Requirements Planning.

The Contact Management system facilitates the marketing of new products to your customer base, while the Trade Promotion features help to streamline the processing and management of the trade promotions that are routinely offered on new products.



## Plan, execute and control production based on a wide variety of manufacturing modes

**SYSPRO functionality enables you to keep finished goods inventory to an absolute minimum and enhances your decision-making regarding what to manufacture with what resources, when, where, and in what sequence.**

The diverse nature of manufacturing methods employed in this industry entails the synchronization and integration of a variety of manufacturing techniques all within one fully integrated software system. Whether manufacturing to order or to stock, using discrete or process methods, SYSPRO's outstanding flexibility ensures a comprehensive set of tools to help you plan, record, track and control your output.

SYSPRO's Quotations and Estimating modules ensures the integrity of cost and profit calculations for bid processes. On confirmation of a quote, SYSPRO provides the capability to automatically raise all supply actions related to fulfilling the customer order, through its sales order, purchase order and job linking features. Furthermore, SYSPRO's Product Configurator facilitates seamless rules-based order processing for assemble, configure and make-to-order products.



The control over the manufacturing process that SYSPRO provides has improved our ability to respond to large requirements at short notice. This is particularly important in times of natural disaster or during humanitarian crises as high frequency communications are used as the main communication method and we need to get products out quickly

- Phil Bradshaw, Managing Director, Barrett Communications  
Posted by Barrett Communications



For discrete and process manufacturers, comprehensive bills of material functionality enables the definition of simple single-level bills through to complex formulations with multiple units of measure and relationship definitions.

Master data features ensure accurate calculation of lead times and dynamic elapsed times and assist in the optimization of production order quantities, while Engineering Change Control facilitates the efficient management of changes to product versions.

Planning features include forecasting, master planning, material requirements planning and capacity planning, while scheduling functionality extends from single-constraint scheduling to multi-constraint scheduling and sequencing.



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Where once we had a black hole in terms of shop floor and WIP management, we now have a system that provides integrated end-to-end management. We have the data easily on hand to look at ongoing jobs and see which are making a profit and which are in trouble in terms of costs. This is not only helping to improve job profitability, but it is also highlighting inherent process and data problems that we were previously oblivious to.

- Ian Johnstone, Managing Director, Tungum Ltd  
Posted by Tungum Ltd

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Material and labor consumed in production may be backflushed, or, for longer production runs, issued as consumed to work in progress. Work-in-progress inspection functionality enables a product to be receipted against multiple items if grades of the final product vary.

Tracking of actual versus estimated labor hours, material usage and scrap is facilitated through the Work in Progress module, while SYSPRO's e.net solutions enable version-independent integration to best-of-breed CAD and shop-floor data collection systems.

SYSPRO features extensive costing control and tracking, including the facility to model the effects of what-if material, labor and manufacturing route costs.

## Track material and operation flow through manufacturing

In SYSPRO, the material and labor allocations are created manually for a non-standard job, or automatically for a job created from a bill of material or estimate. In all cases, you can specify whether the materials are required a certain number of days before the job finish date, or at the start of a specific operation.

To identify and reduce waste and inefficiencies in the production process, you need real-time access to accurate material and labor flow data. SYSPRO enables you to easily query the status of your work-in-progress in terms of costs, material and scrap quantities, labor hours and manufactured quantities. In addition, optional lot traceability and serial tracking functionality enables you to identify the jobs to which traceable raw materials have been issued.

Trial-kitting mechanisms provide complete visibility to the availability of materials required for jobs. Flexible posting functionality enables you to issue materials and labor to jobs at any time via a number of methods, including specific and kit issues. In addition, SYSPRO e.net Solutions and Job Import functionality enable seamless integration of shop floor data collection systems.

Powerful queries and reports provide detailed information on job status and delivery performance information.

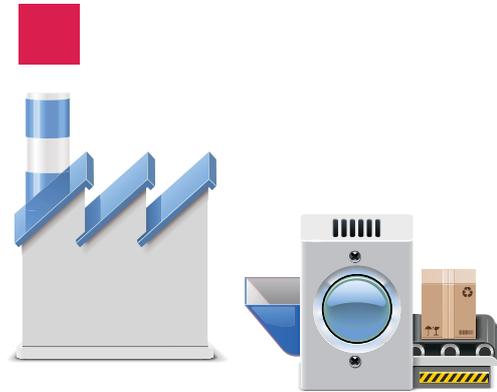
# SYSPRO for manufacturing

The 21<sup>st</sup> century manufacturer understands the need to be agile, flexible and responsive, and requires a software solution that gives them leverage to use whatever production methods are appropriate. The software also needs to provide visibility through the manufacturing chain – back to suppliers, along the production process, and up to customers. The software must also be able to integrate with other systems in the production environment. Furthermore, in the modern customer-centric world, organizations need to move from being purely transaction-focused to being more relationship-oriented, and to improve connections and communication, both internally and externally.

The challenge is how to achieve these goals in the most efficient, streamlined and cost-effective way possible.

SYSPRO ERP (enterprise resource planning) software provides a fully integrated solution with a comprehensive set of tools to help manufacturers to plan, execute and control production in discrete, job shop, process or mixed-mode manufacturing environments. SYSPRO functionality improves core competencies such as:

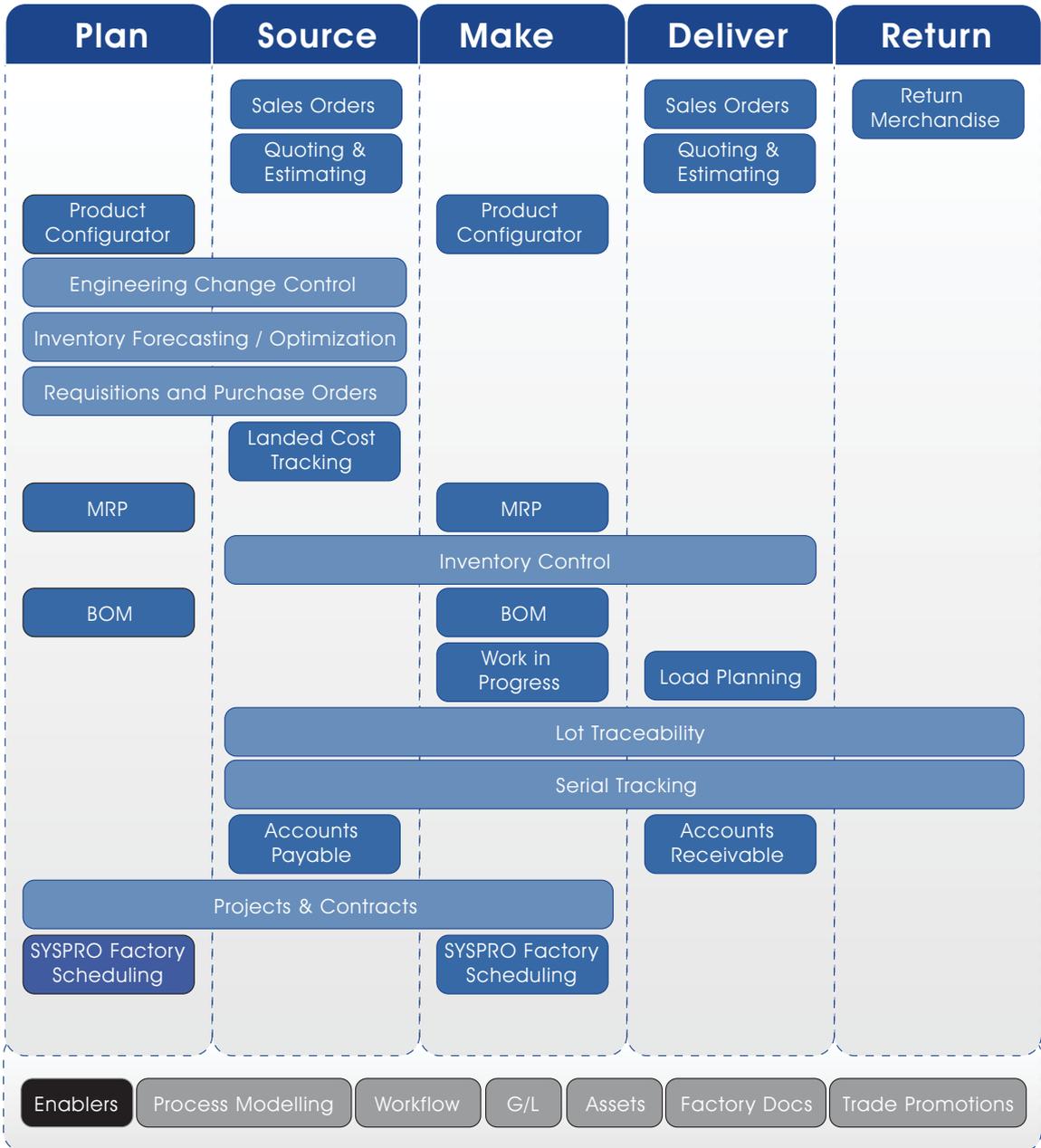
- Managing inventory levels to optimize the competing demands of availability versus cost
- Providing quotes that are accurate and keep costs under control
- Defining comprehensive bills of materials (BOM) from simple to very complex bills
- Calculating lead and elapsed times, and order quantities
- Planning and scheduling of production
- Material requirements and capacity planning
- Managing material, labor and scrap during work-in-progress
- Integrating with CAD and shop-floor data collection systems
- Cost control and tracking
- Performing “what-if” modelling on material, labor and routing costs



“ Through the implementation and development of SYSPRO throughout the group, we have been able to radically overhaul and improve operations, including a move to a lean manufacturing environment, and really ‘scale up’ the business. As a result, we have been able to cope with an 18% year-on-year growth, while still improving delivery, and reducing costs and inventory. Without SYSPRO we never would have coped.

- Virginia Seaward, Head of Operations,  
Boss Design  
Posted by Boss Design





### Supply Chain Framework



**Technology Evaluation Certification**

- Discrete Manufacturing
- Mixed Mode Manufacturing
- Process Manufacturing

The TEC certification symbol is a recognized indicator that you have satisfactorily completed the TEC request for information (RFI), and demonstrated your solution's ability to address real-world business processes.



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