



**GLOVIA™**

Powerful ERP Solutions for Manufacturers

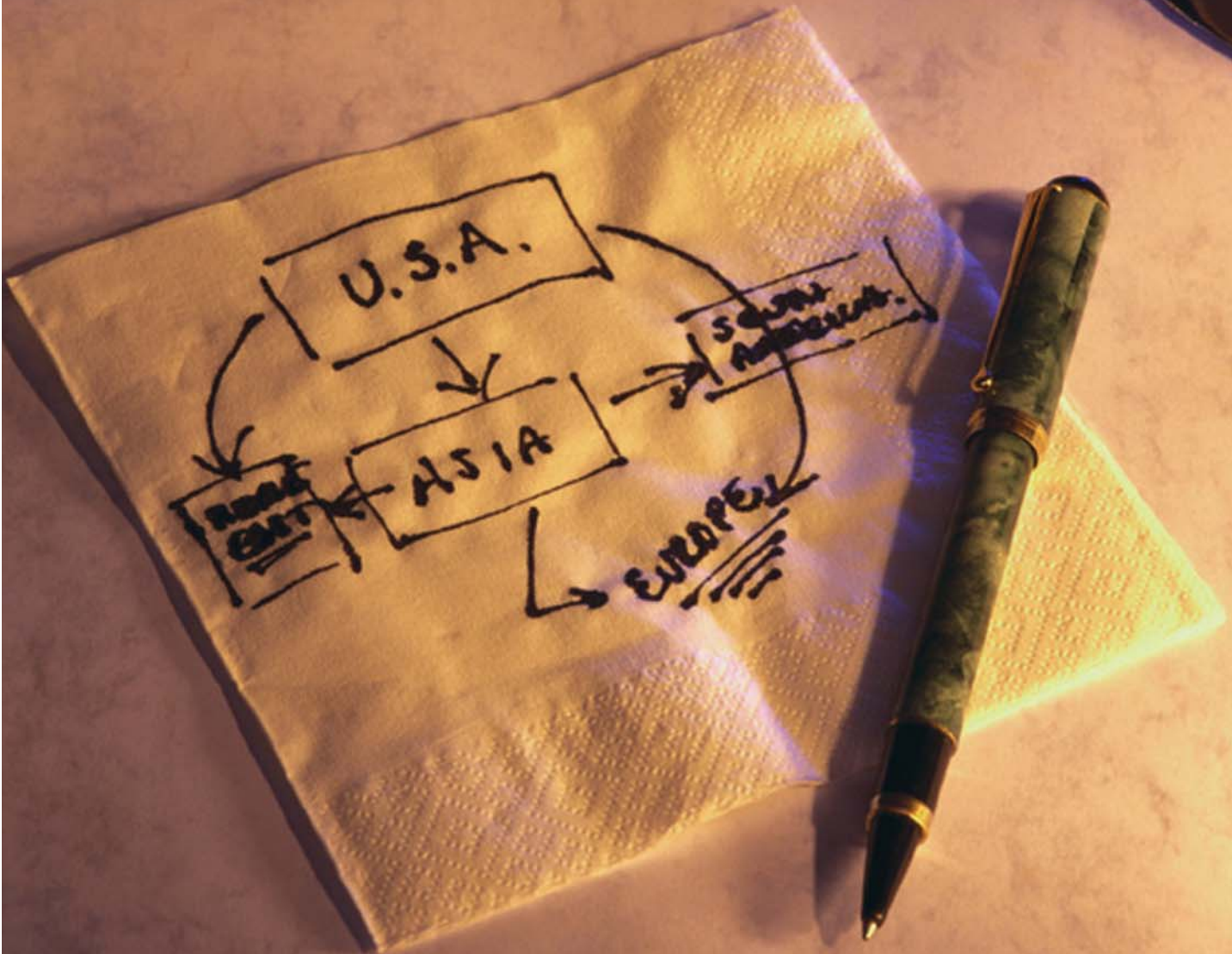
n e x t g e n e r a t i o n

Extend  
Orders

Supply Chain Management

Synchronize Supply With Demand and  
Keep Your Promises

**FUJITSU**



# Extend Orders

## Supply Chain Management

*To be competitive, manufacturers must look beyond their individual manufacturing plants and aim to synchronize global supply with global demand. They need to allocate finite resources and capacity, manage costs and ensure on-time delivery, all while adapting to constantly changing customer demands.*

glovia.com Supply Chain Management is a comprehensive solution that helps manufacturers manage their global supply chains effectively. Through a Forecasting module, the solution can analyze history and recent demand trends and then produce a forecast by week or month and even divide product-demand history into smaller, more homogeneous demand streams. Final forecasts are then transferred to the supply chain planning or master production schedule.

The solution then creates a detailed, constraint-based plan that synchronizes enterprise-wide demand with current plant conditions, while respecting strategic business objectives such as cost and customer service. Supply Chain Management supports real-time order promising, Available- and Capable-to-Promise, and improves order management and fulfillment by matching demand with available global supply.

Through sophisticated “what if” modeling capabilities, our real-time planning solutions help you determine the best way to meet demand. The solution provides you with the flexibility you need to react quickly to changes such as rush orders, unplanned maintenance or other production disruptions.

Other Supply Chain Management business benefits include:

- Reduced costs and lowered inventory levels
- Increased visibility and responsiveness to changes in supply or demand
- Improved customer service through accurate, real-time order promising
- Reduced order-to-delivery cycle times

glovia.com Supply Chain Management includes five world-class modules currently used by a number of prominent and successful companies:

- Factory Planning
- Order Management
- Supply Chain Planning
- Forecasting



# Factory Planning

*A real time, multiple constraint-based planning system directly connected to the glovia.com database*

As you face an increasing number of complex product configurations and a rising wave of customer demands and service requirements, how can you manage inventory, cut costs and improve on-time delivery to keep everyone satisfied?

glovia.com Factory Planning is a memory-resident planning tool that simultaneously considers the constraints of capacity, inventory, tooling and skills to generate an optimized production plan. Factory Planning supports advanced optimization algorithms that reduce set-up times and improve the flow of complex processes.

Factory Planning is a flexible solution designed to meet all planning needs. In a live environment, the application can re-optimize the production plan in response to machine breakdowns or unexpected inventory shortages. In a simulation environment, Factory Planning allows you to run and compare multiple plans to find the best solution that balances inventory requirements with actual planned operations. The solution also allows you to conduct multiple "what if" scenarios, based on master production scheduling forecasts, to identify and deal with potential production bottlenecks and capacity constraints before they affect production.

Factory Planning delivers many bottom-line business benefits including:

- Increasing machine and resource utilization
- Decreasing overtime and idle time



- Eliminating bottlenecks
- Lessening repair/maintenance impact
- Reducing inventory levels
- Reducing cycle times
- Improving on-time delivery and customer service

### *Real-Time Planning*

While nearly all other solutions require batch updates to and from their data models in order to function, Factory Planning has true, real-time production planning. Factory Planning's memory-resident data model is a seamless extension of glovia.com's real-time database, so planning is always based on a single, up-to-the-minute data set.

As events occur throughout your company – orders entered, work orders completed, inventory received – they are reflected in the glovia.com database and the planning data model. This synchronization ensures that the data is an actual reflection of your factory status and not an outdated snapshot.

### *Accurate Capable-to-Promise*

In a business climate of fierce competition and ever-increasing customer expectations, accurate Capable-to-Promise commitments are a decisive competitive advantage.

Factory Planning enables you to provide your customers with instant, accurate order promise dates – even through the Internet. Simply enter an item number and quantity and Factory Planning determines the earliest possible delivery date by considering the availability of required inventory, production capacity, tooling and existing commitments.

### *Support for both Closed and Open Loop Environments*

In manufacturing, shop floor events usually take place too quickly, so production planning becomes independent of execution systems. However, in order to realize cost savings, you must synchronize production planning and purchasing with execution. Factory Planning supports both closed and open loop environments simultaneously. The application can be tightly coupled with execution systems to provide real-time planning feedback to shop floor events. Revisions may be returned to other glovia.com material planning solutions so that supply orders may be adjusted to suit the constrained plan. This way, inventory levels can be reached to a minimum and cash flow improved.

### *Multi-Plant Dependencies*

In a multi-plant environment, some factories are dependent on others for suppliers. glovia.com allows for the definition of cross-plant supplies, including lead times and delivery methods. These critical dependencies are visible through Factory Planning, which can instantly re-plan production at a dependent plant based on the changing output of a supplying plant.

### *Information Visibility*

Factory Planning improves plant management and decision making by increasing information visibility. Plant managers can access critical information, such as available capacity for a given time period and loads on individual machines, to identify problem areas quickly and make informed decisions. Managers can run "what if" scenarios to determine the impact of any potential changes or events.

### *Execute the Plan*

Planning does not end with the creation of an optimized production plan; there must be communication to the shop floor for execution. For this reason, Factory Planning has been designed to sit at the heart of the manufacturing execution systems.

Factory Planning enables the seamless execution of the production plan by having shop floor terminals interrogate the application for the correct and current work queue at each work center. The operators simply select the correct item from the list, which "starts" the operation. You can also call up data, drawings, work instructions and additional information from the remote terminal.

In combination with glovia.com Shop Floor Data Collection, details recorded at this terminal, such as completed work orders, are instantly fed to Factory Planning to ensure the plan is on track. Shop floor information is fed to other glovia.com modules for costing and other operational purposes.

# Order Management

## *Commit confidently to customer demand by better understanding supply and demand*

To respond to customer demand is challenging for companies, especially if they lack visibility into their operations. To manage orders effectively, businesses must be able to see the demands they face and directly link those demands to available supply.

Managing orders effectively is essential because orders drive a company's operations. Orders affect materials planning, which in turn affects both production planning and procurement. With inaccurate order information, companies generate production plans and supply orders that are out of sync with demand, resulting in excess inventory and inefficient capacity utilization.

glovia.com Order Management enables businesses to commit to customer orders with confidence while keeping production utilization steady and inventories lean. The highly configurable solution helps companies automatically create stable, achievable plans while meeting customer demands. Order Management provides complete visibility into all glovia.com Sales Orders and glovia.com Sales Quotes, whether configured or not, as well as the supply and production orders required to complete the delivery.

Order Management provides many lasting benefits to manufacturers, including:

- Improve initial order promising and re-promising
- Reduce excess inventory levels
- Improve customer service levels
- Increase visibility into supply availability
- Increase on-time delivery performance
- Lower transportation costs
- Improve responsiveness and compressed cycle times



### *A Promise is a Promise*

Many companies find it difficult to provide accurate order promising information to their customers because as assemblies are manufactured or purchased according to a forecast, finished goods are assembled in response to an order. Traditional ERP and material planning systems compound this problem since they cannot provide visibility into which supplies are allocated to which demands.

Order Management enables companies to promise accurate Capable-to-Promise delivery dates for new, changed and configured orders automatically. The module plans each Sales Quote or Order as soon as it is received and uses advanced algorithms to allocate projected inventory to these demands. This allows companies to keep their customers informed, even with constant changes in demand and production.

Once a Sales Quote or Order is scheduled and inventory allocated, Order Management runs a test to ensure it can be delivered within customer tolerances. If the date is within tolerance, then promise documents are automatically generated and sent to customers via XML or email. If the date is beyond the established tolerance, then the module manages the exception by flagging the order for manual review and resolution – such as changing the production schedule to resolve the shortage, changing the priority of orders, or using substitute items.

### ***Total Visibility***

Order Management provides companies with complete visibility into their operations, helping them to make the right supply and production decisions while reducing inventories and improving customer service. The module tightly links demand with production and supply by planning Sales Quotes and Orders against both available and potential inventories. Order Management also increases visibility into supply by accounting for supplier's availability.

glovia.com Order Management provides online, graphical visibility into:

- Requirements and projected supplies for every Sales Quote and Order
- Available alternatives, including substitute products and their projected availability
- Order status and details, showing which orders will be on-time, which will be late, and which cannot be automatically planned
- Details behind supply potential including what demands are consuming incoming supplies
- Order costs and margins, which helps manufacturers understand the financial impact of substitutions and changed orders
- Projected inventory availability overlaid with projected utilization

### ***Flexible Inventory Allocation***

To help you provide your customers with accurate order promising while increasing plan stability and maximizing both inventory and production utilization, Order Management supports several advanced inventory allocation methodologies including:

- **First In, First Out (FIFO):** Allocates projected inventory forward to delivery date, typically used for low-cost, short lead time items
- **Last In, First Out (LIFO):** Allocates projected inventory backwards from delivery date, typically used for long lead time items
- **Hikiate:** Allocates projected inventory backward from delivery date and then forward, providing more plan stability when order cancellations or changes are common
- **Time-horizon Based:** Allocates projected inventory based on two time horizons, such as 10-day forward and 40-day limited backwards allocation; provides short-term stability and flexibility for rush and last minute orders as well as increased plan stability for items not required in the first time horizon

### ***Automatically Manage Sales Quotes and Orders***

Order Management is seamlessly integrated with glovia.com Sales Orders, Sales Quotes and Customer Self-Service. This enables manufacturers to handle all their orders and quotes, regardless of whether they are entered via glovia.com screens, a web browser or XML documents.

Order Management is also integrated with glovia.com Configurator so sales quotes and orders can be created with an attached configuration. This allows manufacturers to identify the projected delivery date based on the availability of the components defined in the configuration. Order Management is also integrated with glovia.com Factory Planning and Supply Chain Planning solutions. The module can also be integrated with other ERP, advanced planning, and supply chain planning systems. This provides manufacturers with increased visibility and allows them to leverage their existing technology investments.

### ***Reduce Transportation Cost with Delivery Planning***

Order Management enables packing group codes to be assigned to deliveries and ensures that they are picked, packed and shipped together. This lets companies pre-group items based on what is sensible for shipping purposes and reduces transportation costs. The module will also automatically suggest split shipments, which helps companies to be more responsive while maximizing inventory utilization and cash flow.

# Supply Chain Planning

## *Synchronize enterprise-wide production, supply and demand*

Manufacturers face escalating supply chain challenges. They have decentralized their operations and shifted production to different cities, states and even countries in an effort to reduce costs. They must deal with shrinking product lifecycles and simultaneously cope with increasingly demanding customers.

As these trends fragment manufacturing operations, manufacturers face a fundamental, competitive need to reduce costs, eliminate inventories, and link their production and procurement activities more tightly with actual demand. They need a solution that enables them to account and plan for enterprise-wide demand.

glovias.com Supply Chain Planning enables manufacturers to synchronize enterprise-wide production and supply with enterprise-wide demand. The solution allows manufacturers to aggregate total demand and centrally plan for the production capacity and supplies required to satisfy that demand. Supply Chain Planning consolidates sales, production, inventory and purchasing information to help companies become more demand-driven and actually manufacture items based on real demand.

In today's demand-oriented market, to optimize and integrate sales and logistics and then incorporate that data into the production schedule in a timely manner is absolutely critical. glovias.com Supply Chain Planning delivers substantial benefits to manufacturers including:

- Increase responsiveness to market changes
- Improve visibility into aggregated demand, enterprise-wide production and supply
- Reduce inventory levels



- Improve customer service and on-time delivery performance
- Optimize supply to meet demand profitably
- Lower inventory, distribution and transportation costs
- Increase demand forecast accuracy with compressed planning cycle times

## *Move Planning Closer to Demand*

Supply Chain Planning helps manufacturers increase responsiveness by shifting the planning process closer to actual demand. Manufacturers can then synchronize production and procurement activities with actual demand more effectively and in the process lower costs, decrease inventory levels and improve customer service.

By synchronizing internal and external supply chain processes, glovia.com Supply Chain Planning helps manufacturers transform themselves into demand-driven organizations, flexible enough to respond quickly to changes in the market.

## *Total Demand Visibility*

Supply Chain Planning increases manufacturer's visibility into enterprise-wide demand by aggregating forecasts and sales orders created by customers and local sales offices into one, comprehensive demand stream. This demand stream can be organized in a wide variety of ways – by corporate entity, customer, customer type, product family, or end-item-to allow corporate planners to see when, where and what kind of demand is being generated.

The enterprise planning solution provides users with complete visibility into aggregated demand through a single, easy-to-use screen. Planners can adjust this demand based on the historic accuracy of the various demand streams.

## *Enterprise-wide Planning*

Supply Chain Planning provides visibility into demand and also allows manufacturers to determine the optimal way to fulfill that demand based on available enterprise-wide supply and production resources. From the same screen, planners can see the production and inventory required to meet demand in user-defined time-buckets. Supply Chain Planning allows users to drill into demand details to see how supporting production and supply plans were created as well as to make any changes necessary to meet the demand or achieve business objectives more effectively.

This ability to plan production and procurement activities centrally against aggregated demand is essential for manufacturers who wish to realize strategic business objectives such as cost reduction or improved responsiveness.

The enterprise planning capabilities of glovia.com enables manufacturers to allocate demand intelligently to the most appropriate production facility based on lowest manufacturing cost or available resources, including capacities and inventories, transport costs and lead times from facility to customer.

Supply Chain Planning ensures that manufacturers optimize their production and procurement activities on an enterprise-wide basis. The module enables planners to allocate demand to individual factories for further planning and fulfillment.

## *Support for Global PSI Planning*

Supply Chain Planning provides full support for Global PSI (Production, Sales, Inventory) planning commonly used by leading electronics and high-volume manufacturers. The solution contains a global model of production resources and inventory that can be used to fulfill demand. The Global PSI model is created from multiple Local PSI models generated from the production planning or materials planning systems in use at each factory.

## *Key Capabilities*

glovia.com Supply Chain Planning provides advanced capabilities for manufacturers including:

- Accurate visibility of demand across product lines, geographies and customers by aggregating information from multiple sources
- Accurate visibility of enterprise-wide production capacity and supply requirements
- Optimization of key activities within a manufacturer including production, procurement and distribution
- Multi-tier, multi-enterprise planning collaboration between trading partners

# Forecasting

*See the future more clearly with powerful and flexible forecasting tools*

Accurate correlation of future demand and production output is one of the most difficult and critical tasks in any modern manufacturing enterprise. glovia.com Forecasting provides you with the sophisticated “what-if” tools and built-in models you need to characterize sales histories precisely and accurately, analyze recent demand trends, and transfer final forecasts to the master

## *Forecasts by Week or Month / Multiple Demand Streams*

Forecasting allows you to forecast by week or month and to divide product-demand history into smaller, more homogeneous demand streams. This can be extremely useful in the case where, for example, domestic sales and exports have different demand characteristics.

Demand streams can also be broken down by customer type, such as retail and government buyers. In larger organizations, the ability to partition forecasts simplifies integrating forecasts from several buyers into an overall forecast demand based on bookings or sales.

## *More Than Two Dozen Forecasting Methods*

Forecast worksheets permit users to segregate and analyze data quickly for selected demand streams and products. Analysts can calculate forecasts using any of more than two dozen built-in forecasting methods. The application automatically tracks the results of each forecast calculation and determines the best-fit formula for actual demand. That same formula can then be used again at a future date to forecast demand. To eliminate repetitive calculations for a number of similar products, demand can be forecast at the group or item level.



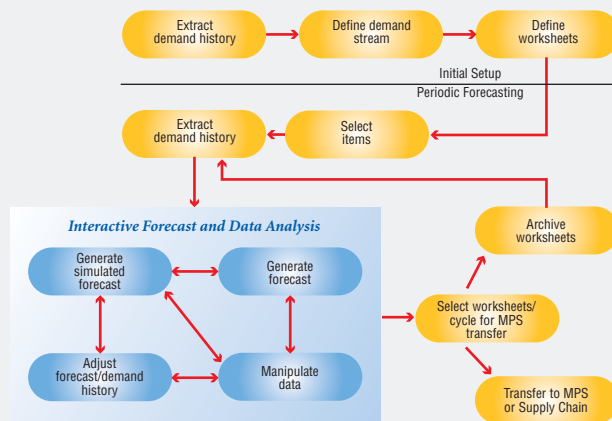
## *Explore Unlimited "What-If" Scenarios*

“What-If” cycle iteration simulations can be explored to refine forecasting precision further. At any time, worksheet calculations can be frozen and a new cycle of forecasts run. Worksheets can be calculated, consolidated, analyzed, adjusted or recalculated a number of times – and results of all “what-if” forecast calculations can be retained.

## Automatic Transfer to Master Schedule

After analysis is complete, you can choose the most representative “what if” cycle, which is designated the primary forecast. The primary forecast is then moved to the master production schedule and all other “what if” alternatives are automatically deleted. The primary forecast is used as a starting point for the next cycle of forecasts and as a data point for comparing actual demand in the following period. Forecasts can be transferred at the item level and optionally spread over smaller master production schedule time periods.

### Business Activity Flow



### Variable Forecast Period

- By week
- By month
- By quarter

### Multiple Demand Streams

- Selectable by region, sales type, sales subtype
- Definable forecasting horizon

### Forecast Worksheets

- Multiple worksheets
- Multiple selection criteria for building lists of products to forecast

### Forecast Parameters

- Selection criteria
  - ◆ CCN / Division
  - ◆ Product code
  - ◆ Forecasting group
  - ◆ House product line
  - ◆ Analyst
  - ◆ Finished / spares
  - ◆ FamilyItem

- System level
- Worksheet level
- Cycle
- Worksheet item / family
- Cycle item / family

### Forecast Calculations

- By worksheet and cycle
- Data manipulation
  - ◆ Aggregate items
  - ◆ Prorate forecasts
  - ◆ Consolidate master locations
  - ◆ Deconsolidate master locations
- Adjustments
  - ◆ Demand history
  - ◆ Forecasts
- Options to summarize revisions
- More than two dozen forecasting models
  - ◆ Exponential smoothing
  - ◆ Weighted moving average
  - ◆ Multiple-period moving average
  - ◆ Growth factor
  - ◆ Actual plus difference
  - ◆ Ratio seasonality
- Iterative forecast cycles

### Transfer Forecast to Master Schedule

- By worksheet
- Select cycle to accept
- Option to spread forecasts
- Saves results of selected cycle by worksheet into archives
- Purges remaining cycles

### Optional Batch Processing

- Demand Source
  - ◆ Open orders
  - ◆ Order history
  - ◆ Archive

### Standard Inquiries

- Demand stream, where used
- Worksheet, where used

# Extend Boundaries

## Extended ERP

*glovia.com is the next-generation of enterprise solutions—extended ERP—which addresses the pressing business issues that manufacturers face today: coordination of global supply chains, management of complex product lifecycles, and growth of profitable service offerings.*

glovia.com provides manufacturers with advanced capabilities to manage and improve their entire business—from product design, procurement, planning and manufacturing to sales, fulfillment, installation and support.

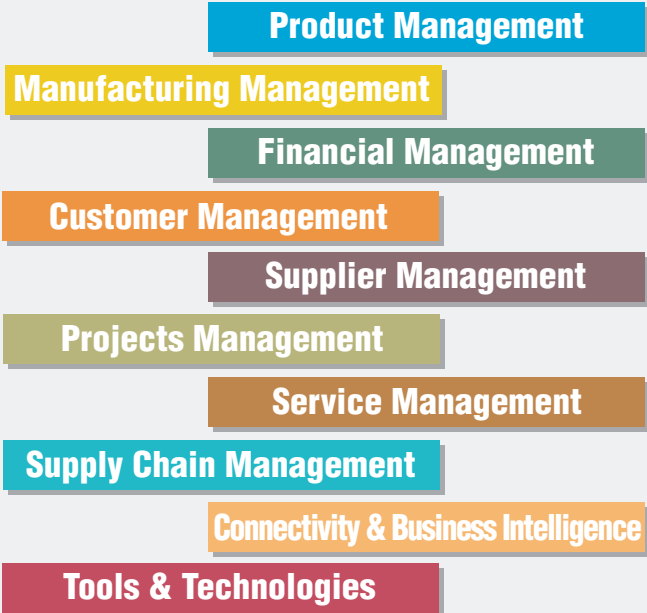
The solution streamlines operations within the four walls and beyond, and integrates disparate internal systems, eliminates functional silos, and brings you closer to your customers and suppliers.

The advantages for you are enormous.

For example, you can respond quickly and accurately to customer demands, compress both cycle times and information flow throughout your company and supply chain, transform your business into a lean organization, and allow demand to trigger downstream production and procurement activities.

Naturally, all of these benefits eliminate costs while they improve your standing with customers and against competition.

Glovia’s extended ERP suite includes more than 70 seamlessly integrated modules that allow you to run and refine key business processes including:



Glovia has 10 solution groups in the glovia.com suite. glovia.com has more than 70 seamlessly integrated modules that allow manufacturers to manage and improve every aspect of their business with one proven solution.

Product Management	Manufacturing Management	Financial Management	Customer Management	Supplier Management	Projects Management	Service Management	Supply Chain Management	Connectivity & Business Intelligence	Tools & Technologies
Engineering	Master Production Scheduling (MPS)	Billing	Contact & Opportunity Management	Supplier Quotes	Project Definition	Installation Management	Factory Planning	Electronic Data Interchange	Audit Manager
Engineering Change	Material Requirements Planning (MRP)	Accounts Receivable	Bid Process Management	Purchase Orders	Project Management Interface	Field Service	Order Management	XML	Security Manager
Tool & Gauge	Seiban	Accounts Payable	Sales Quotes	Contract Purchasing	Project Resource Planning	Service & Repair	Supply Chain Planning	Application Adapters	Shop Floor Data Collection
Estimating	Work Orders	Cash Management	Sales Orders	Supplier Releasing	Project Accounting	Service Orders	Forecasting	External Interface Facility	Web Client
Costing	Repetitive Manufacturing	Fixed Assets	Contract Management	Material Supply	Program Cost Accounting			E-RMS	Application Dev. Tools
Configurator	Advanced Capacity Planning	Financial Integration Management	Customer Releasing	Supplier Portal				ActionDESK	Code Comparison Tools
Plant Maintenance	Shop Floor Control	General Ledger	Customer Portal					Publisher	
	Electronic Kanban	Time & Attendance						Cognos	
	Kanban								
	Inventory								
	Physical Inventory								



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