

A manufacturer's guide to complete business control

Achieve business goals with integrated
supply chain planning and optimization

MANUFACTURING PLANNING





“Quintiq is an enabler for excellent results. It allows you to measure many KPIs and drive improvements in the critical ones. The iterative development process was key to Novelis owning the system. Quintiq has exceeded our expectations every step of the way.”

– Buddy Stemple,
VP & GM, Novelis

Imagine this...

You are the supply chain manager of a plant with state-of-the-art equipment.

In spite of significant investments in the equipment, you struggle to meet delivery dates.

Long lead times used to mask production inefficiencies. Now with more demanding delivery dates, even minor disruptions seem to hurt your delivery performance.

You're under considerable pressure to improve operational efficiencies, while still remaining flexible enough to cope with volatile demand.

There must be a better way to run your operations.

You're right. There is.

How do leading manufacturers sustain their edge?

Every single decision made maximizes profitability and brings leading manufacturers closer to their business goals.

What could this mean for your operations? To show you, we've identified 12 common challenges that manufacturers face – whether they are involved in process, semi-process or discrete manufacturing.

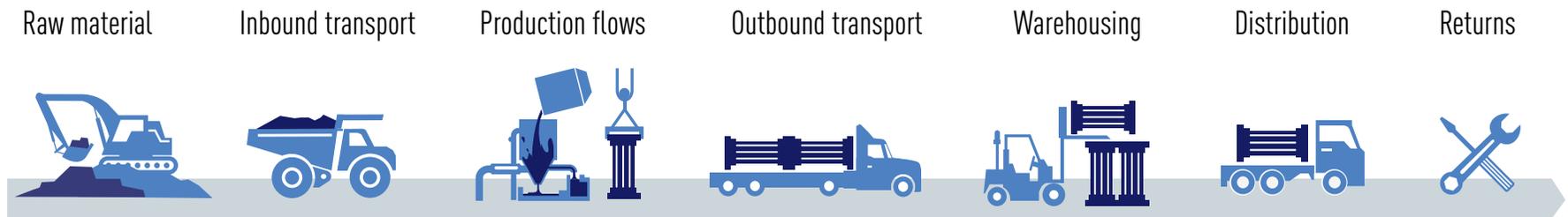
As you read about these challenges, consider how you would tackle them.

Then compare your responses with those of the Quintiq solution. See what you can achieve with supply chain planning and optimization from Quintiq.



Real integrated business planning for discrete, semi-process and process manufacturers

Plan across the entire supply chain



Plan across all planning horizons



Plan across all key functional areas





Strategic horizon

Challenge 1: Your supply chain is constantly changing

Your planning rules are hardcoded in the current planning system. Your planners shoot off change requests faster than your IT department can respond. There's already a significant backlog – and it's getting worse.

You know you're missing new opportunities, but what can you do?

The Quintiq response: Your supply chain planning can easily incorporate changes to rules, requirements and constraints

It's quick and easy to change the rules for anything from order confirmation and sequencing to material reservation and lot size calculations. Your planners can make changes without altering a line of code. Even forecasting and planning models can be adjusted on the fly.

What-if scenarios let you evaluate the impact of any change before it is implemented.

Challenge 2: To outsource or not to outsource?

Maintenance costs for your cutting machine are rising steeply and you're wondering whether to scrap it. A subcontractor has offered to take on some production, so you turn to your spreadsheets to work out the implications of outsourcing. There's no answer in sight.

While analyzing the new scenario, you realize that some of the data is out of date. You're still collecting and interpreting data from various systems when you hear that the offer has been withdrawn.

The Quintiq response: Easy what-if simulations help you explore profitable alternatives

With a few clicks, you add the external cutting machine and the associated costs and routings to your planning tool. Using the software, you evaluate a scenario and discover that it is significantly cheaper to outsource production of certain products. You're on the phone with the subcontractor within minutes.

Challenge 3: Seizing emerging market opportunities

The board of directors is keen for the company to enter an emerging market. Your task is to prepare a report on how best to expand the supply chain. You've put together a hefty document with pages of calculations and footnotes, but you still have no idea on how to proceed.

The Quintiq response: Reliable impact analysis underpins resilient strategic plans

Within minutes your planning platform has enabled you to:

- Model all relevant resources and business rules
- Review optimized production allocations, and
- Explore the impact of various scenarios

You present the board with a clear graphical overview of how various production allocations will affect important KPIs such as profit, customer service and inventory levels. It's easy to assess the financial impact of each alternative, as foreign currencies are converted automatically.



Tactical horizon

Challenge 4: The invisible trend

You've just received this month's sales overview. Once again, the forecast is way off. Then something catches your eye: instead of bulk orders, you seem to be getting more requests for specialty products. You just didn't see this coming. It's all hands on deck as the planning and production departments struggle to cope – yet again – with an unforeseen trend.

The Quintiq response: Swift trend detection buys you valuable time to adjust production

The shift to specialty products was spotted months ago.

A powerful demand planning tool constantly aligns forecasts with changing market conditions, and keeps you ahead of the curve. These forecasts are planned against finite capacity, with the outcome automatically reflected in your sales and operation planning (S&OP).

Challenge 5: The S&OP blame game

The S&OP meeting begins with the usual complaints. Production blames sales for promising more than your company can deliver. Sales blames production for failing to produce enough. The strategic planner doesn't help when he points out that the sales and operations plan was based on unrealistic parameters set by the production department.

The Quintiq response: An integrated S&OP process

When you base your S&OP on realistic forecasts, current data and finite capacity, integrated business planning becomes a reality. Discussions are brief, and everyone agrees on the improvements that need to be made.

The reconciled plan is supported by what-if scenarios and an excellent overview of gaps and opportunities. By the time the meeting is over, everyone is committed to fulfilling their part of the plan.

Challenge 6: Vital information is all over the place

The monthly S&OP cycle makes it difficult to respond to events that affect your supply chain. You'd like to review your sales and operations plan more frequently, but that seems impossible. It already takes more than a week to collect and process all the information and then distribute the plan to the right people.

The Quintiq response: Immediate visibility and access to accurate information

It's easy to increase the frequency of reviews when decision makers have access to accurate data. Real-time interfaces with ERP and manufacturing execution systems – as well as with the systems of key customers and suppliers – ensure that decision makers understand the impact of anything from sales promotions to the temporary closure of a production line.



“At SIG, Quintiq is used globally. Everybody can see exactly what is going on everywhere.”

– Carmen Zech,
Head of Global Resource
Management, SIG

Operational horizon

Challenge 7: A huge order comes in: Should you take it?

The planning department reviews the monthly sales plan and discovers spare capacity. The order is accepted but will the due date be met? As the decision to accept the order was based on sales targets rather than actual sales, there is a significant risk of a late delivery.

The Quintiq response: A reliable, profitable due date is quoted immediately

Within seconds...

- The order is checked against the sales budget
- Production orders are planned against finite capacity, taking into account campaigns and routings over different plants and lines
- The customer knows on which day and how much of the order will be delivered.

Challenge 8: A key machine breaks down

The breakdown threatens to affect the downstream pipeline of an important product range. Getting the part you need is going to take a couple of weeks. You've spent the morning on the phone, trying to transfer production to other factories. The factory managers have promised to get back to you, but you haven't heard from them yet.

The Quintiq response: Swift, accurate replanning

Within minutes, you've created a new MPS scenario that reflects the two-week unavailability of that machine. You run the optimizer and a revised plan rolls out. You take a quick look and see that production has now been allocated to another factory. When you contact the manager, she confirms that her factory has spare capacity on a similar machine. Production is transferred immediately.



Operational horizon

Challenge 9: Coping with wandering bottlenecks

Once again, work in progress is rising and service levels are falling. With a wide range of products to schedule, your planners are never quite sure where and when the next wandering bottleneck will develop.

The Quintiq response: All bottlenecks are considered when planning and scheduling production

All your plans account for finite capacity. You can update them daily to ensure that potential bottlenecks are dealt with immediately.

Challenge 10: Aligning the schedules of tightly linked resources

Your schedulers struggle to create schedules for individual resources. Synchronizing schedules between tightly linked resources, such as mixing and filling lines, is almost impossible.

The Quintiq response: Powerful optimizers determine the ideal balance for all processes

Quintiq automatically suggests optimized schedules that combine the constraints of the mixing and filling lines. Schedulers see the impact of schedules on all relevant KPIs while constraint violation displays and other relevant information support fine tuning of plans.



Operational horizon

“For a long time, our delivery reliability was between 50% and 60%. This has improved to 80% and sometimes 90%.”

– Ron van Hout,
Planning and Warehousing
Manager, Vlisco

Challenge 11: Determining the right production quantities

Determining the right production quantities would be easy in an ideal world of stable demand and unlimited production capacity. In the real world, finite capacity and constantly changing demand and set-up times make this one of the most challenging puzzles in supply chain planning.

The Quintiq response: Production quantities are adjusted dynamically

Information on the changes in demand and the load on your machines feeds directly into your MPS, allowing you to proactively plan and ensuring you always produce the right amount efficiently.

Challenge 12: Determining the right inventory levels

Your planners just can't seem to get it right. If inventories are high to ensure excellent service levels, why are service levels still poor?

The Quintiq response: A holistic view of inventory, and demand-driven inventory targets

You base your service levels on ABC classifications, and derive your inventory targets from the desired service levels. Instead of absolute numbers, you use stock coverage to create a link between inventories and demand forecasts. Slow-moving inventory is flagged automatically for you to take appropriate action.



Your Quintiq advantage: complete business control with KPI-based planning





“Full transparency was created through a combination of centralized planning and de-centralized scheduling in seven plants. The improvements in scheduling and capacity balancing have resulted in improved customer service levels and optimized productivity.”

– Pierre Versailles,
Operations Excellence Manager,
AkzoNobel Powder Coatings





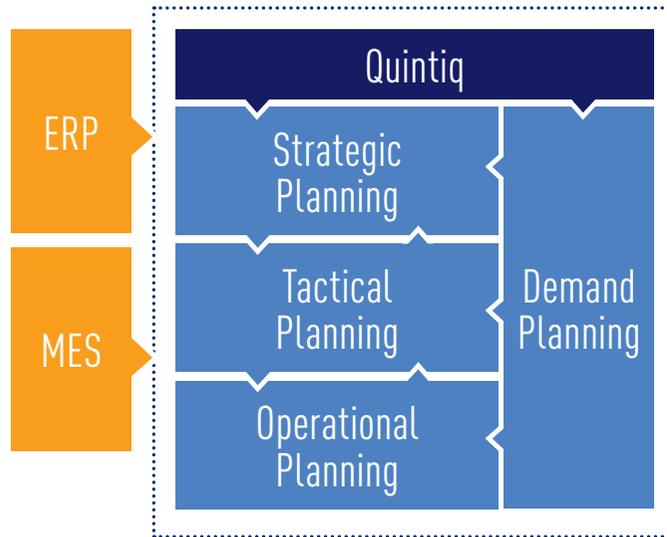
Checklist

Can you:

- Keep your demand forecast aligned with reality?
- Swiftly determine the consequences of changes to your supply chain?
- Adapt easily to changing rules and requirements?
- Generate a sales and operations plan based on realistic forecasts, existing stock and finite capacity?
- Explore multiple demand and supply scenarios to define gap-solving tactics?
- Accept extra orders instantly, taking into account the sales plan and finite capacity?
- Minimize the effects of disruptions?
- Cope with wandering bottlenecks?
- Align the schedules of tightly linked resources?
- Adjust production quantities dynamically?
- Determine ideal inventory levels?
- Explore the impact of planning decisions on KPIs, and make decisions that enable you to achieve your business goals?



One powerful planning platform



Quintiq's supply chain planning and optimization platform powers end-to-end planning. It optimizes personnel scheduling, resources and processes in a single planning environment, across all planning horizons.

The revolutionary power and flexibility of the Quintiq platform mean that your strategies – rather than a vendor's software – determine your results. Our 'best-of-both-worlds' approach combines the cost benefits of standard software with the advantages of a fully configurable solution. The Quintiq modeling layer captures every detail of your particular operational reality, while the standard core technology enables cost-effective support and upgrades.

We provide the freedom to achieve the results you need through our proprietary optimization technology which has set world records in complex optimization challenges. Our technological edge exists to give your business a competitive edge.

Many of the world's largest and most successful manufacturers rely on Quintiq to:

- Improve delivery performance
- Reduce inventory
- Shorten lead times
- Increase throughput
- Cut operating costs
- Reduce cycle times
- Respond quickly and effectively to unplanned events
- Maximize flexibility, visibility and control

For real business control and the freedom to achieve the results you need, visit www.quintiq.com or **contact us**.



Offices: www.quintiq.com/locations

Email: info@quintiq.com | **Web:** www.quintiq.com