Advanced Planning, Scheduling & Supply Chain Optimization for Retail Operations
ESCALATING RETAIL COMPLEXITY
Retail challenges seem to be never ending. There are increasing demands for more choice and availability while pressures mount for reduced carbon footprint and cost. Retailers are looking at more diverse outlet footprints upsizing to megastores for out of town, downsizing to convenience or kiosk where restricted space or needs demand. Supply chains are getting more complex to plan and execute to support and flex for all the diversity. Transport profiles are changing too. Double deck trailers, multi-temp, rigid, curtain-siders all challenging the transport teams for optimal deployment. Above all, fuel and resource costs are escalating. In this changing and complex world, it also needs to evolve to simplify the complexity of the retail operations by supporting the operation with greater visibility across the supply chain.

Quintiq believes that when planning operations it is critical to use planning software that exactly fits the planning puzzle. Planning part of the operation, or planning with generic rules typically results in cost buffers, failures and unhappy planners. Quintiq solves every single planning and scheduling problem using a single standard, commercially-off-the-shelf software package. Exact business logic and rules are defined in the system to ensure a 100% operational fit. No compromise.

Optimization support helps the planning team to find the best answers. Quintiq’s propagator continually checks for all amendments and disruptions to the plan. Each change can generate many consequences that are immediately made visible for communication or resolution.

PRECISE PLANNING FOR OPERATIONAL EXCELLENCE
Quintiq is solving many of Retail’s planning challenges. Manning the stores with optimal resources, fulfilling store demands through planning primary or secondary distribution, satisfying consumer demand directly through B2C with advanced diary promise and home delivery capability. These activities all share common attributes:

- Optimizing the use of resources
- Minimizing cost and carbon footprint
- Ensuring product availability
- Enhancing the customer experience.

From a planning and execution point of view, there is one area that cannot be compromised. All operations require planning support that is a 100% fit to real world conditions. Quintiq provides a standard planning application that can be configured to exactly reflect each and every planning puzzle. No compromise. No hidden cost buffers. No planning for failure.

OPTIMIZATION AND DECISION SUPPORT ACROSS ALL PLANNING LEVELS
Quintiq can take into account all the elements of the supply chain in a single environment. Multiple planning levels are supported as well as multi-resource planning. Strategic simulation and decision support to make the best possible network design decisions. For tactical planning, looking ahead weeks or months you can generate a store replenishment plan based on historical and forecast volumes, taking into account resources and availability, distribution network capacities and agreed customer delivery windows. On a daily basis focusing on the next day(s) an operational plan can be generated and where relevant can overlay real order volumes over a tactical plan. This now takes account of exact assets and availability, matching driver availability and preferences to demand, considering backhaul opportunities and checking inventory availability. Other dependencies such as linehaul and cross dock capacity can also be taken into account. Selecting between own resources and subcontractors is supported by cost and contract knowledge. Finally operational execution is all about sustaining the plan and managing the exceptions. Once a plan is created, Quintiq can continue to monitor the activities, highlight non-performing tasks and where possible find alternative solutions...
solutions. Quintiq has strong integration capabilities to interact with most on-board computers and using data propagation highlights where exceptions are occurring and supports remedial action.

KEY BENEFITS:
- **Network Planning**
  - Company-wide visibility into operations across all planning levels.
  - Significant savings in network operation costs because of better volume-capacity balancing.
- **Primary Distribution**
  - Optimise stock holding capacity of network by pulling required quantity of inventory to optimal locations.
  - Minimise stock movement for secondary distribution and home delivery.
- **Secondary Distribution**
  - Integrated planning - Routes, network and depot operations are coordinated real-time to synchronize the flow of activities and push the buffers out of the organization.
  - Improved utilization of capacity through efficient assigning of vehicles and personnel on a daily, weekly and monthly basis.
  - Reduced labor costs – Optimally align workforce supply with demand.
- **Home Delivery**
  - Significant cost savings – Benefit from efficient resource utilization and increased productivity.
  - Exceptional customer service levels and service quality – Attain a strong competitive position.
  - Service flexibility – Easily and quickly offer new or tailored services while taking advantage of existing resources.
  - Fewer tours – Reduced by real-time dispatch and the elimination of ad-hoc tours.
  - Reduced fuel consumption and carbon footprint through efficient tour generation, integration with telematics, and improved first-time delivery rates.
  - Exceptional and profitable delivery performance – Choose the most profitable deliveries and confidently stand behind flexible delivery schedules.

KEY PLANNING CAPABILITIES:
- **For Primary Distribution**
  - How to build and consolidate shipping containers
  - Multi-modal – decide when to use air, sea, road, rail
  - When to bring into the network and where to hold stock.

**FUNCTIONAL OVERVIEW**

**EFFICIENT CONSUMER RESPONSE**
Within a Supply Chain, Quintiq is typically focussed on maximum shelf edge availability at minimal cost. When planning in Quintiq, planners can see all demands from the stores and are supported by the system to rapidly fulfil all orders in the most efficient way. With Quintiq you can populate knowledge tables with the exact capacities and characteristics of your assets. Double decks, sliding compartments, multi-temperature, stacking rules, tractor compatibility are all known to the system. Driver contracts, compartments, multi-temperature, stacking rules, tractor compatibility are all known to the system. Driver contracts, working times and, where relevant, skills and preferences can be held in the system. Intelligent addresses know which stores can receive goods at what times, any local restrictions on material handling or traffic restriction. A strong graphical user interface supports the planning of optimal full loads and backhaul. Product waves through the day, different product types and handling requirements are all supported. So when calculating the fresh delivery as wave one in cages, topped up with ambient on pallets or cases, allowing for full load or multi-drop, Quintiq understands all the precise operating rules that makes such an operation possible.

For Secondary Distribution
- Building waves to stores, prioritising inventory
- Managing bottlenecks such as cross docks and loading docks
- Efficient use of human resources
- Full loads and multi-drops
- Backhaul and returns.

**Home Delivery**
- Building an efficient operation with consumer diary promise
- Using intelligent addresses for optimal planning of delivery times
- Planning around driver skills and driver / driver and helper needs.

**In store Human Resources**
- Get the right level of budgeted hours for store demands
- Optimal assignment of people for tasks
- Balance operation cost with customer service.
**QUINTIQ ADVANCED TECHNOLOGY**

Because Quintiq technology is a business logic driven planning platform, any business rule or constraint can be easily defined in the system. This means you can fully model your business processes to determine the best route to reach your business goals.

The Quintiq technological advantage lies in powerful engines and optimizers that master your company’s business logic, accurately providing a variety of opportunities to control and optimize all your business processes.

Fast implementation sets Quintiq apart from its competition. Quintiq has developed a standard project methodology: the Quintiq Project Life Cycle, or QPLC. This methodology enables you to easily and quickly deploy our advanced technology. A fully serviceable and customized solution can be delivered and implemented in a short time, with many users experiencing a payback time of just 6 to 18 months.

**QUINTIQ ARCHITECTURE**

The Quintiq Application Suite consist of a unique three-layer architecture:

- **Quintiq Standard Software**: All Quintiq solutions, regardless of the company’s specialization, contain this layer, which makes up 80% of each solution. As the standard Quintiq Application Suite, this layer contains most of the planning functions, including the Windows and web user interfaces, the real-time knowledge engine, the integrator that connects Quintiq with other systems, and Quintiq optimizers.

- **Logistics Planner**: Accounting for 10-15% of the solution, this layer contains all data specific to the Advanced Planning & Scheduling and Supply Chain Optimization solutions for Retailers.

- **Customer-specific**: This fully customizable layer includes all the information about and knowledge of your company’s unique business rules and processes. It accounts for 5-10% of the solution.

Based on this architecture, the Quintiq Application Suite is standard software that offers you the advantages of a customized solution. You enjoy fast deployment, timely upgrades and a solution tailored 100% tailored to your organization’s specific needs. This unique approach gives you the best of both worlds - customization and out-of-the-box functionality.

**ABOUT QUINTIQ**

Quintiq focuses on Advanced Planning & Scheduling and Supply Chain Optimization solutions for companies that work in complex, dynamic business environments, such as retail logistics. Companies around the world are successfully using Quintiq to improve business control, increase delivery reliability and reduce costs.

The company’s headquarters is located in the Netherlands and it has subsidiaries in Germany, UK, Finland, Malaysia, China, Australia and the USA.

For more information: [www.quintiq.com](http://www.quintiq.com)

---

**HELEN HEIGHEs, MANAGER DISTRIBUTION PROJECTS FROM WAITROSE**: “The key reason why we chose Quintiq was the ability of the project team to work with us and to show us a perfect-fit solution for all our long- and short-term planning challenges.”

**ANDREW WRIGHT, PROJECT MANAGER, WAITROSE**: “Excellent service comes from always having the right number of Partners in the right place in branches. With the Quintiq system, we expect to support the branch managers in realizing increased efficiencies in the deploying Partners, so customers will continue to enjoy the service they expect.”