QAD DYNASYS PRODUCTION PLANNING

Soaring logistics costs. Manufacturing bottlenecks. Product variability. Constantly changing demand and supply. With all these variables at work, the challenge is on for you to create the best supply chain plan for your business. Production Planning solution helps companies become effective enterprises by optimizing their production operations in order to maximize efficiencies while managing constraints and costs. Production Planning adopts a high visibility approach that graphically and intuitively provides planners with an informative workbench to support decision making and event simulation. Production Planning understands that manufacturing environments are complex and dynamic. Planners struggle to manage real time changes such as capacity (unforeseen downtime), product availability (delayed deliveries), and urgent demand signals (unplanned orders). Production Planning excels in this environment due to several key technological differentiators.

PRODUCTION PLANNING SOLUTION

Production Planning is available individually or as part of the QAD DynaSys Demand and Supply Chain Planning (DSCP) suite.

Collaborate. The first of these is end-to-end collaboration enabling the planner to disseminate and accumulate qualitative intelligence with all planning stakeholders. This provides the planner with the earliest possible notice of a potential plan conflict which naturally makes more resolution options available. Secondly, the resolution options can be simulated and evaluated in unison with relevant stakeholders ensuring the plans remain feasible and optimal.

Plan. Production Planning provides finite capacity optimized planning to calculate the perfect manufacturing material flows across all production stages subject to resource capacity, skills and tools, labor, and material constraints. Intelligent optimization algorithms holistically determine the perfect plan across the planning horizon including overtime, outsourcing, and seasonal stock-builds. Smart built-in solvers balance the lowest costs and heuristics to provide a plan that is more than just mathematically pure, a plan that can be realistically executed on the shop floor.

Analyze, simulate and measure. A key differentiator of Production Planning is the intuitive end-to-end supply chain visibility. This extends pass the baseline plan to include simulated events and what-if scenario comparisons. Production Planning seamlessly embeds business intelligence capability from Qlik, a leading business analytics provider. Production Planning delivers a library of key KPIs to diagnose and quickly resolve planning issues, ensuring the planner has a clear understanding of the plan results.

VALUE AND BENEFITS

- **Reduced manufacturing costs.** Capital equipment costs in manufacturing industries can be extremely high. Because of this many companies go through cycles of capacity excesses and shortages. Production Planning customers use production planning to improve throughput and operating efficiencies getting a higher return on fixed costs. This is achieved by using cost driven constraint based optimization to generate the lowest cost plan within plant capacities. Doing more with less is a key Production Planning benefit.
- **Reduced shop-floor interruptions.** Production Planning generates realistic plans that adhere to resource capacity and capabilities. A realistic plan means it can be rapidly released to the factory floor with minimal planning intervention. Production Planning provides this realism using two key features; a balance of heuristics and costs. The heuristics ensure production batching, campaigns, line preferences, and other plan success measures are not violated in the quest to achieve the lowest cost. Secondly, the definition of constraints within Production Planning extend past line capacity, materials, and lead-time to include tooling, labor, skills, lot-tracking, shelf-life etc. Enforcing constraints at the appropriate level ensures feasible and realistic plans.
- **Reduced product wastage.** Production Planning reduces component and semi-finished goods waste using several key techniques. Production Planning uses line level batching rules to respect batch driven process flows such as ovens, dryer, freezers and centrifuges. Aligning the flow of batch quantities across production stages eliminates wastage of semi-finished items. Having realistic plans that are able to be executed without intervention or disruption is conducive to a more accurate raw material consumption plan. Providing a more precise picture of requirements ensures no shortage nor excess materials. Additionally, by enforcing shelf-life constraints on perishable materials also reduces waste. Production Planning customers reduce wastage costs by up to 40%.
- **Respond to unanticipated events.** Despite the best preparation, supply chain issues always arise. A major challenge of complex manufacturing environments is costly idle time caused by unforeseen events occurring in near-time or real-time. A key benefit of the Production Planning solution is the early alert system of potential plan interruptions once the signal is detected. The planner is then able to rapidly simulate various resolutions in collaboration with stakeholders. Early detection combined with rapid simulation means planners can resolve issues within a time fence where options are available.
- **Improve customer satisfaction.** Companies using Production Planning enjoy better customer satisfaction due to several factors. The demand and supply chain planning (DSCP) suite accurately predicts, plans, and visualizes the end to end supply chain. This results in a better picture of requirements and consequently better on-time delivery performance.

IMPROVE SERVICE LEVELS	BY AS MUCH AS **40** POINTS
REDUCE INVENTORY LEVEL	BY AS MUCH AS **60%**
REDUCE WORKING CAPITAL	BY UP TO **25%**
REDUCE WASTE COSTS	BY UP TO **40%**

KEY CAPABILITIES

Visibility. A key feature of Production Planning is the material flow visibility provided to the planner via intuitive planning workbenches. This provides support for production bottleneck identification and management. This provides projected inventory levels across the horizon for any finished good, intermediate materials or raw materials. The workbenches highlight projected utilization of production equipment highlighting exceptions in a smart graphical manner. Production Planning visibility works across time fences simultaneously providing key information by day, week, or month as appropriate. Production Planning visibility provides exception-based planning by graphical alerts to identify and resolve issues such as capacity and material violations, shelf life violations, and late orders.

Constraint based optimization. Production Planning solution holistically synchronizes materials flow and resources utilization across multistage, multisite production environments respecting all required constraints. Such constraints may include sourcing constraints, lead-times, batch sizes, minimum/maximum run times/lengths, changeover provision, tools, labor shifts, utilities, and key skills. The Production Planning solution provides a hybrid of cost and heuristics optimization methods to ensure that the calculated plans are feasible, optimal, and most of all realistic.

Simulation. Production Planning provides a simulation workbench for what-if scenarios and simulation planning. This easily enables the planner to assess the impact of changes to capacity, run rate/efficiency, or alternate demand plans.

Planning methodologies. Production Planning solution supports a range of planning methods. These include finite capacity APS/MRPII for forecast driven planning, lean manufacturing/Kanban for automotive, theory of constraints, and demand driven material requirements planning (DDMRP) for “respond” planning techniques (QAD DynaSys is DDI certified). Production Planning supports finite capacity backward- and forward-planning models.

S&OP support. Production Planning automatically makes supply plans and simulated scenarios available to S&OP/IBP processes for tactical planning.

Capacity allocation. The Production Planning solution uses a range of heuristics and optimization techniques to ensure the correct demand is met. Production Planning fully supports supply chain segmentation strategies. Capacity and materials may be allocated based a large number of factors that may include: market segment, customer priority, revenue/margin, and demand type (including forecast, orders, safety stock, and other demand signals).

Pegging. Costs and orders can be pegged at all levels of demand and supply throughout the planning model.

Multiple-site. The Production Planning solution may be deployed across multiple production facilities providing capacity and material checking and stock allocation in a true multi-site environment.

Shelf life and lot tracking. Production Planning respects shelf life constraints on perishable materials reducing waste and providing lower cost plans. Production Planning supports the flow of materials by lot ensuring planned inventories are managed at a micro-level.

Order promising. The QAD Production Planning solution calculates available to promise, capable to promise, and order to promise in real-time.

Connectivity. Production Planning has the ability to align with a PLM system for bill of material (BOM) and engineering changes, MES system for actual production, and LIMs systems for quality specifications. Production Planning integrates readily with many leading ERP solutions including QAD, SAP, Sage, JDE, Oracle, Infor and Microsoft.

FUTURE PROOF TECHNOLOGY

QAD DynaSys cloud – safe, secure and available. Production Planning is available in the QAD Cloud. QAD Cloud services are ISO certified and carry SSAE15 SOC 1 Type II certification. Business continuity is assured with comprehensive disaster recovery planning.

Mobility. Production Planning user experience supports Web, mobile and touch screen user interfaces.

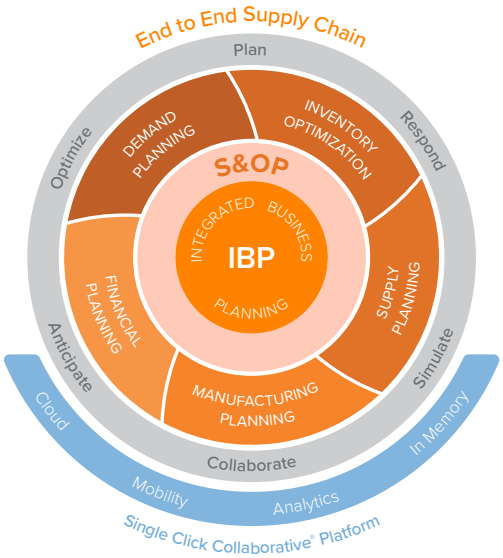
Analytics. As the IoT and machine learning deliver a greater number of data points, supply chain solutions must have a best-in-class capability to translate data into trends and decision grade analytics. Production Planning seamlessly embeds capability from Qlik, a leading business analytics provider. This provides a beautiful and pleasant to use data experience supporting responsive and accurate decision making.

In-Memory. Production Planning uses a highly scalable, rapid in-memory data model enabling real time simulation planning and effective decision support.

Integration. QAD DynaSys supports integration with QAD, SAP, Sage, JDE, Oracle, Infor, Microsoft and many other ERP and enterprise applications. It uses a data hub approach to exchange supply chain information across the organization and includes tool for building custom integrations.

QAD DYNASYS DSCP SUITE

QAD DynaSys has been empowering customers to improve productivity and profitability through better supply chain decision-making for over three decades. QAD DynaSys, a division of QAD, invests heavily in research and development to future proof our solutions.



QAD DYNASYS DSCP SUITE

Production Planning is available standalone or as part of the end-to-end DSCP solution.

Available Solutions

- Demand Planning
- Distribution Planning
- Production Planning
- Procurement Planning
- Network & Inventory Optimization
- S&OP
- DDMRP

At QAD DynaSys, we are helping our customers build the future of their supply chains.

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