BATTERIES, POWER SUPPLIES AND LIGHTING

Benefits

Achieve full lot traceability for as-built configurations

Improve supply chain governance and visibility

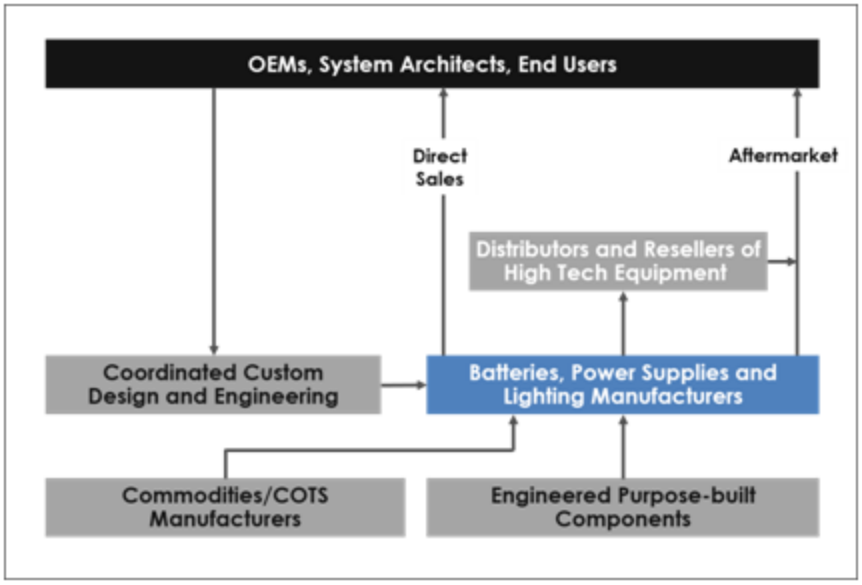
Establish consistent global processes and collaboration

Integrate quality directly into core business processes

Digitize management of customer and supplier orders through EDI

QAD offers a unique solution for manufacturers of electronic componentry such as batteries, power supplies and lighting. The solution consists of the full-featured QAD Cloud ERP and related capabilities that help manufacturers adapt to changing requirements, improve forecast accuracy, drive operational efficiency and improve delivery in full on time (DIFOT), while meeting customer demand for customization.

Batteries, Power Supplies and Lighting Manufacturing Value Chain



Consumption by electronic componentry manufacturers includes commodity items, commercial off-the-shelf materials and purpose-built components. Products are consumed by OEMs for incorporation into devices, system architects as part of an aggregated solution or by end users for direct application. There is a separate value chain for servicing OEMs that requires customization to standard products. Key capabilities of the QAD solution include demand planning, supply chain execution, quality management and global

financials. These and other capabilities help manufacturers control processes, reduce risk and align operations with strategy.

Reduce manual costs and errors by material handling and quality process automation.

Reduce finished goods inventory and WIP by using sophisticated forecasting methods and detecting demand forecast changes as they happen.

Improve DIFOT through better supply chain insight and accurate inventory tracking.

Increase utilization through better material planning and handling.

Batteries, Power Supplies and Lighting Manufacturing Solution Overview

Manufacturers of batteries, power supplies and lighting deliver electronic component assemblies produced from a limited set of components that are permanently combined to create end-product. Management of BOMs includes a percentage of production that produces variations of standard models delivered by MTO to specific OEMs or customers. The production environment is semi-automated with elements of manual assembly and/or material movement.

Many products in the electronic component segment are made in low volumes. The production process includes manual movement of material between automated equipment and manual assembly processes – the latter often requires product and production order-specific work instructions. Production may require controlled environments including clean rooms. Processing becomes more complicated as the product becomes more complex.

The potentially high level of production variation requires a sophisticated integrated approach to planning and execution functions. Electronic component manufacturers closely monitor specific operational metrics and expect performance that helps them to differentiate products. Key metrics include DIFOT, Capacity Utilization, Inventory Turns, Production Downtime, WIP levels and Reduced Manufacturing Cycle Time.

Manufacturers often differentiate products by technical features that require continuous investments in product development and constant modification of associated processes. This dynamic nature of demand accentuates the need for integration and a solution that fosters continuous improvement – like the QAD solution. The following are the key capabilities of the QAD solution help electronic components manufacturers address key issues:

QAD DSCP (Demand and Supply Chain Planning)

QAD QMS (Quality Management System)

QAD Automation Solutions – Shop Floor Data Collection and Label Printing

QAD Supplier Portal – Supplier Management

Planning and Scheduling Workbenches

Lot Trace Workbench

QAD EAM (Enterprise Asset Management)

QAD BI (Business intelligence)

QAD Cloud EDI

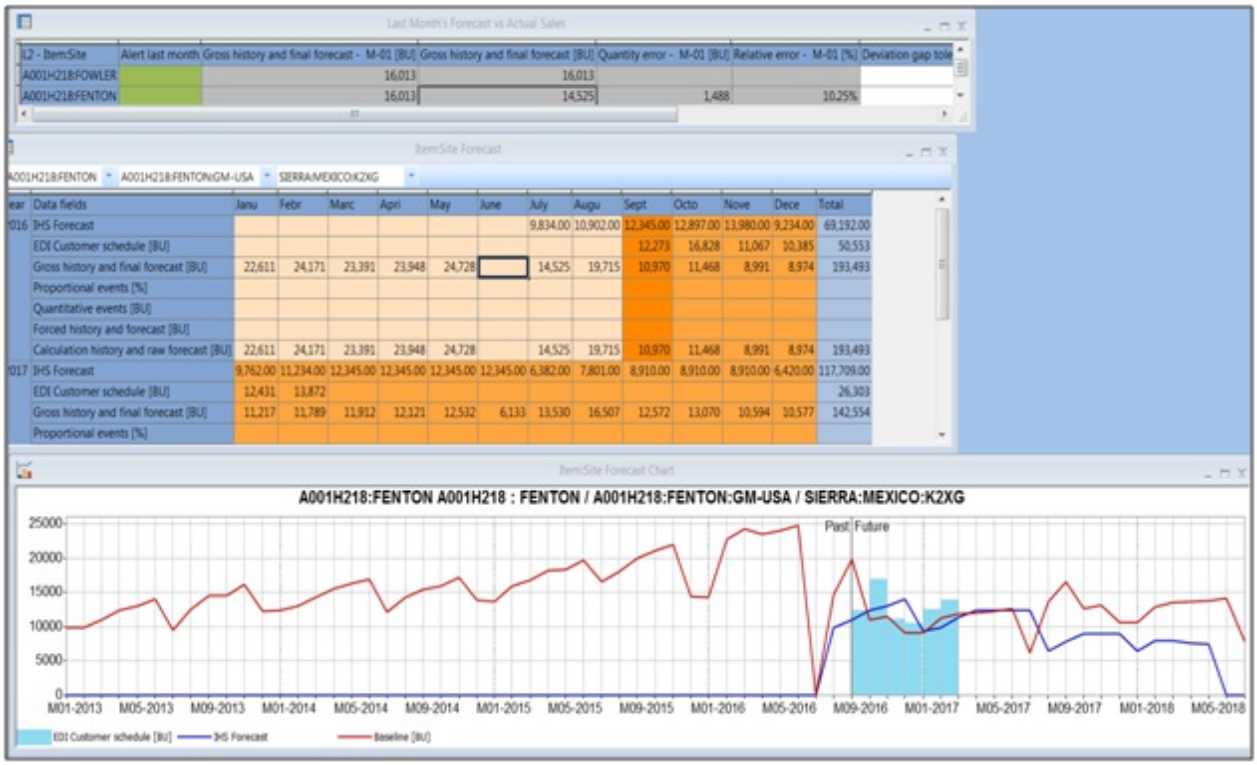
Overviews of the first three solutions areas list above follow. For information about the rest of the solution areas, please visit QAD.com.

QAD DSCP (Demand and Supply Chain Planning)

QAD DSCP (Demand and Supply Chain Planning) provides tools to build and **manage better forecasts by improving data reliability and accuracy due to collaboration** between all those involved in the forecasting process. Electronic component manufacturers can manage forecasts at any level – customer, item, group or family – with input from a variety of sources including sales representatives, customers, marketing and finance.

QAD Demand Planning, part of QAD DSCP, **creates sales forecasts based on historical, market analysis and customer production data**. Exceptional events such as holiday shutdown can also be input. QAD DSCP uses **sophisticated statistical modeling** to pinpoint statistical anomalies that can skew demand. The models can smooth historical data if applicable, determine the effect of exceptional events and generate a forecast for each individual item, automatically selecting the best-fit statistical model.

QAD DSCP Two-year Production Plan based on Multiple Data and Departmental Sources



QAD QMS (Quality Management System)

Quality control in an electronic component manufacturing environment is often an integral part of the operation. Electronic component manufacturers typically require electrical and other system inspections at varying stages of the assembly process to assure satisfactory functionality prior to additional value-added manufacturing operations.

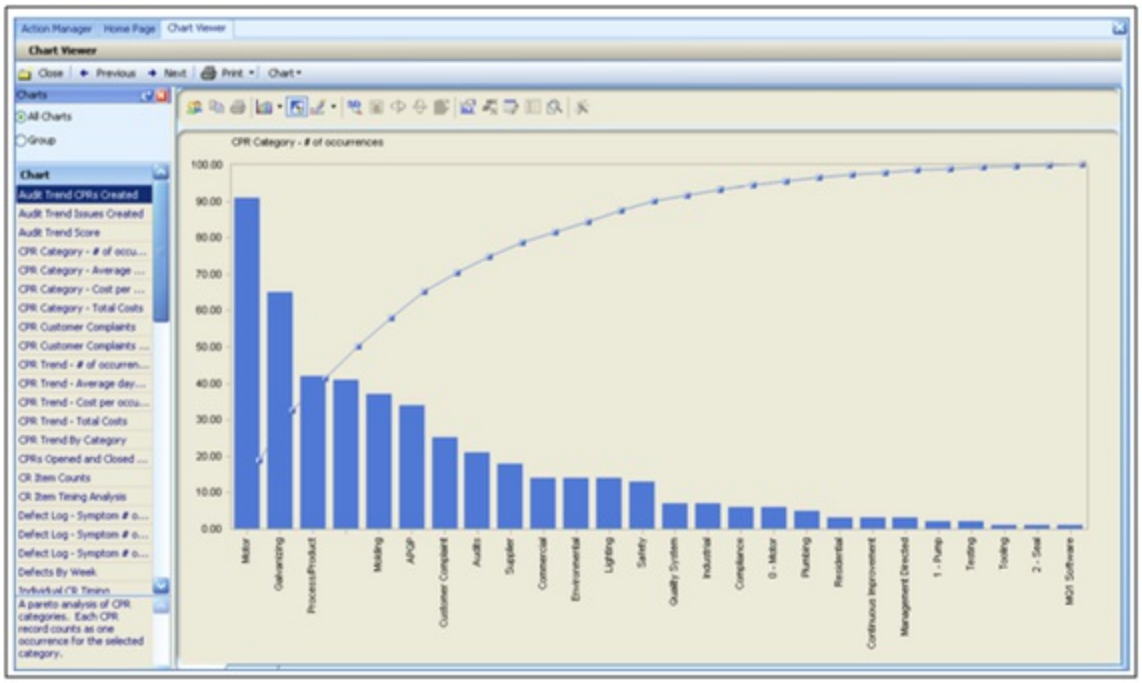
QAD Item Attributes and Quality Control allow for attributes that are tracked at the lot level when an item is received from a supplier. Item Attributes supports complete traceability at the lot and attribute level for anything bought, sold or produced.

QAD QMS further **supports the integration of quality planning efforts whether through formal APQP or other manufacturer-developed standard operating procedures**. QAD QMS supports the management of quality information in terms of specifications and supporting documentation. This integration allows manufacturers to integrate related process data, automate required business processes and comply with design and customer specifications.

QAD QMS offers a complete suite of automation tools to manage quality systems, including:

- Document Control for the central storage and management of controlled documents, including approval workflow, archiving and audit trail
- CAPA/NCR to provide an automated closed loop solution for problem resolution
- Employee Training for the management and qualification of key personnel
- Audits to support both internal and external auditing
- Inspection and Statistical Process Control to document and automate processes around inspections

QAD QMS Defect Tracking Analytics



QAD Automation Solutions

QAD Automation Solutions improve batteries, power supplies and lighting manufacturers' material transactional effectiveness by aligning ERP with material processes. The two primary components are:

Data Collection captures material and production data through simplified ERP transactions using a mobile device such as a radio frequency (RF) scanner, tablet or a stationary shop floor personal computer or terminal.

Label Printing Services routes and prints labels associated with material and production transactions based on manufacturer, supplier and customer formats and rules. The services support any label format and any printer and are GS1 and 2D compliant.

Automation Solutions acts as a highly configurable set of capabilities that requires no coding to be applied to a wide variety of manufacturing environments, specifically:

Transaction Development Toolset reduces customizations by simplifying the development of material and production transactions through the configuration of QAD Service Interface.

Transaction Library provides out-of-the-box transactions for inbound, outbound, production, inventory management and packaging for ERP functionality. The library extends to QAD Enterprise Asset Management.

Transaction Processing Engine ensures failure free transaction processing through QAD core SIAPI processing and interactive record locking management.

Transaction Linking combines multiple transactions to create a unified and simplified transaction, aligning with material handling and production processes.

Label Mapping/Routing Toolset easily maps to QAD material and production data to select the right label format and to print to the correct printer.

Automation Solutions Integrate Data Collection and Label Printing

For more information on how the QAD solution for high-tech electronic components including batteries, power supplies and lighting manufacturing can help your company, please contact QAD at +1-805-566-6100 or email info@qad.com.