



SMTC's 100,000 square foot facility in Ontario, Canada .

Maintaining Consistent Manufacturing Efficiency and Quality Worldwide

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I-CONNECT007

IN SUMMARY

SMTC Manufacturing Corporation's Executive VP, Operations, Paul Blom, sits down with our editor to reveal his company's supply chain management strategies, quality management and PLM systems which produce excellence throughout technology and manufacturing centers worldwide.

In an interview with SMT Magazine, Paul Blom, Executive Vice President, Operations, of SMTC Manufacturing Corporation, talks about the company's operational management practices, including supply chain management strategies, quality management systems and PLM systems, and how they maintain consistent manufacturing and quality excellence throughout their technology and manufacturing centers worldwide.

SMT Magazine: What key issues did SMTC experience as it grew its global footprint to have technology/manufacturing centers in Canada, the United States, Mexico and China?

Paul Blom: SMTC has maintained a presence and grown in these geographies because we see demand from our customers for a global footprint, global capabilities and a desire to leverage both proximate technologically advanced operations, as well as highly-capable, low-cost geographic facilities.



Three key issues which SMTC focuses on with a passion are: Ensuring we deliver a global end-to-end supply chain solution; plant operations that are "copy-exact" globally; and talented customer-focused teams, responsible for consistent global manufacturing execution and customer delivery. Key to delivering this

service are SMTC's global shop floor, supply chain and supply chain visibility solutions. This is especially true for customers who procure from more than one of our facilities worldwide.

SMT: Having these different facilities worldwide, how were you able to address issues pertaining to the operational management of these centers?

Blom: SMTC's adherence to a consistent supply chain and operations business model, and use of a common supporting IT systems platform, help to ensure our various facilities worldwide operate using common methods and customer service levels. Common goals and operational metrics and their regular review help to reinforce global execution and consistency. And, in cases where we may stray from the global formula, our customers would be quick to call us on it.

SMT: When it comes to your supply chain, what key issues are you seeing right now and how are you addressing these challenges?

Blom: Global growth in the electronics industry has certainly slowed since the upturn of 2010. As such, we are seeing reduced lead times from suppliers and strong materials availability—this is good. We are, however, seeing unusually high levels of volatility in our customer forecasts, as they seek to align their inventories with somewhat unpredictable demand from their customers. And, these same customers are looking for high levels of responsiveness to their demand changes, as well as visibility upstream in the supply chain, as success in capturing their customer demand has become more time sensitive.

At SMTC, we are helping our customers through this period of demand volatility by leveraging our simulation and try-for-fit toolset, our inventory bonding programs and a focus on short cycle times within our factories. This, coupled with regular communication as customer needs evolve.

SMT: What systems have you put in place to avoid counterfeit electronics/components?



Blom: The most important step in the process of avoiding counterfeit parts is to remain with top-tier, well-known suppliers and electronic component distributors, and to always procure materials in line with our customer's approved vendor list, or AVL. SMTC will only access a very small number of brokers, whose processes have been thoroughly audited by SMTC staff. These brokers are used only with the concurrence of our customers, and would incur very strict penalties if counterfeit avoidance processes were to break down. As we worked through the component shortages of 2010, this disciplined approach proved to be valuable to SMTC and our customers.

SMT: What are the advantages of partnering with electronics distributors?

Blom: We have invested in very strong partnerships with top-tier electronics component distributors. These relationships include B2B supply chain connections, inventory bonding, on-site personnel at SMTC and executive participation on distributor customer councils. Roughly 50% of electronic components purchases by dollar value are purchased from distributors. The greatest advantages of working with our distribution partners are access to global supply, inventory bonding programs, on-site support and process simplification across a broad range of part numbers and, finally, component life cycle

planning support. Each of these contributes to the success of both SMTC and our customers.

SMT: *With your different facilities worldwide, how do you ensure the same quality output across these facilities? What quality management systems does the company have in place and how important are these systems?*

Blom: Each SMTC facility utilizes the same toolset for shop floor control, quality and yield management, defect pareto and root cause analysis and supply chain execution. With this in place, site general managers, factory personnel and the global management team can assess performance from a single baseline or point of reference. Quality management system standards which are in place include ISO-9001:2008 and ISO-13485:2003, which is an internationally-recognized quality management system and standard for the manufacture of medical devices. IPC standards are adhered to in support of various customer and product requirements.

SMT: *On the subject of different manufacturing locations, how do you manage and solve regulatory changes?*

Blom: Regulatory requirements are addressed at the site level, with corporate personnel assisting where needed. When regulatory requirements change, they are typically assessed at the site level and shared globally, as needed. Internal and external personnel work together to ensure compliance to regulations.

SMT: *When it comes to your workforce, what issues do you experience when it comes to labor? How do you address an aging workforce? What about rising labor costs in low-cost manufacturing countries such as China?*

Blom: As is typical within the EMS industry, SMTC will see fluctuations in demand from OEM customers, which requires ongoing adjustments in staffing and workforce. The downturn of 2009 and the resurgence of 2010 provide real-time examples. Here SMTC's challenge is to retain key staff and execute reductions and hiring in an effective manner. On the upturn, employee training and retention are key. This is a strong focus area for us and one where I am proud of the results we have achieved.

With respect to labor cost increases in



SMTC's California, USA Manufacturing facility of 107,000 square feet.

China, both from wage increases and shifting currency exchange, we see a challenge. We place a great deal of focus on forecasting, factory planning and level loading and driving of factory efficiency to offset as much of the labor increase as possible. In some instances, we see customers shifting from China to Mexico where the labor content is no longer sufficient to warrant the changing cost model. We do, however, see more interest from North American and European OEMs in the execution of higher-mix, lower-volume business in China where they are looking for SMTC to help service Asian end markets or provide global product distribution.

SMT: Do you employ product life cycle management (PLM) systems in your manufacturing facilities? What issues, particular to SMTC, do these systems address and solve?

Blom: Yes. We leverage the capabilities of Agile and IHS, formerly Premier, as well as the breadth of the SMTC component life cycle database. We regularly perform value-added life cycle analysis for customers and provide inventory solutions in support of end-of-life components.

SMT: Green processes are a major concern today. How do you keep up with that requirement, and how do you ensure that the company's overall carbon footprint is kept to a minimum?

Blom: SMTC is continuously building sustainable foundation capabilities that enable us to control environmentally-friendly operations in all our facilities. In addition, we ensure that all our global operations meet or exceed both international and local environmental laws and guidelines. We partner with strategic suppliers to recycle solder dross and hazardous waste using certified recycling facilities. We monitor all effluent in compliance with all local regulations and requirements and proactively filter, treat and control all outgoing water.

We use micro-phase cleaning (MPC) technology to effectively remove and filter out fluxes, residues and oils during all

cleaning operations effectively reducing chemistry usage and waste. We use water-based chemistries, where possible, to minimize the introduction of hazardous solvents or VOC in production use. SMTC proactively addresses dross generation by adding anti-oxidant additives to all wave and solder pots, effectively controlling waste and maintaining quality thought-out our manufacturing process. As well, we proactively address RoHS and lead-free compliancy for both materials and components. At SMTC, we continuously review practices, procedures and technology to improve efficiency, methods and materials to drive waste down.

SMT: Overall, what can you say about the management systems, processes and practices that SMTC has implemented over the years to improve operations across different geographies and drive profitability for the company?

Blom: Our passion for customers, our relentless investment in supply chain solutions and our “copy-exact” approach have been critical success factors for SMTC. The SMTC management system places a great deal of autonomy and accountability with our factory general managers and it is their teams who ultimately deliver value to our customers. This delivery is measured through a common set of factory and customer metrics. Together, these drive customer delivery and profitability in each of our geographies. **SMT**



As Executive Vice President, Operations, of SMTC Manufacturing Corporation, Paul Blom is responsible for engineering, manufacturing operations and supply chain management on a global basis. Prior to joining SMTC, he was a founding executive of Celestica and served as Senior Vice President, Global Supply Chain. Blom holds a Bachelor of Science in Mechanical Engineering from the University of Toronto and a Master's in Business Administration from the Rotman School of Business.