



The Prototype of a Successful Supply Partnership

In the electronic components world, the complementary supply chain partnership between Advanced Assembly and Digi-Key Corp. is hardwired around a common business model – and a commitment to solving the special problems of design engineers.

Flying in the face of uncertainty. That describes a day in the life of inventors, designers – and electronic prototypers of printed circuit boards (PCBs). For design engineers, dealing with unpredictability is a fact of life—and a constant challenge. And make no mistake: these professionals are flying. That’s because development time is money in the production sector.

Advanced Assembly understands the rigors of PCB prototype design. The Aurora, Colo.-based company considers their customers’ manufacturing challenges their own. “The engineers we work with are designing the products of the future,” said Kevin Ryan, company President. “We understand their challenges and find it rewarding to work with them to make their process a little easier.”

Carving out a niche

Traditional PCB assemblers cater to customers who have high-volume orders and long lead times. But Advanced Assembly has distinguished itself by focusing on quick-turn, surface-mount circuit board assembly. It works closely with design engineers from businesses like Boeing, General Electric, Honeywell and Microsoft who need low volume or prototype printed circuit board assemblies – usually from one to 50 boards. Advanced Assembly is committed to delivering high quality services and is ISO 9001:2008 certified.

“We march to a slightly different drummer here,” said Ryan. “Our business model is built on low-volume and prototype projects, which sets us apart from other PCB assemblers who focus on large, bulk orders.” Along with its proprietary machine-assembly process, Advanced Assembly’s partnership approach to service means the company can assemble PCBs about 80 percent faster than its competitors.

Agile supply partner: Digi-Key

Key to the company’s agility is an equally agile supply partner: Digi-Key Corporation, located in Thief River Falls, Minn. Digi-Key is a prototype-to production component distributor that carries more than 600,000 products in stock and available for immediate shipment.



Working with Digi-Key, Advanced Assembly can quickly and easily source small quantities of electronic components for prototype customers. Digi-Key is one of the world's largest distributors of electronic components. It ships nearly 100 percent of its orders on the same day they are submitted and considers its high-touch service a point of pride.

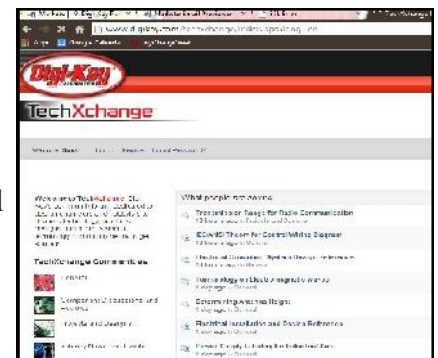
“Digi-Key’s service allows us to provide customers with full turnkey quotes in less than 24 hours, and we can assemble most orders that quickly as well,” said Ryan. “In addition, Digi-Key allows us to purchase the exact quantity our customers need, whether it is reels of components or just a handful of bulk parts. This flexibility is a big deal for our customers.” In the unpredictable world of electronic prototyping, design engineers need every advantage they can get.

Whether a manufacturer needs circuitry designed for an electronic toy or an aircraft navigation panel, until a printed circuit board (PCB) has successfully journeyed from design, rough specification and CAD modeling to full-out assembly and production, it’s prone to a long list of misadventures – from miscalculations in circuit design to errant assembly and documentation data.

The sooner those errors are detected, the sooner engineering customers can return to the drawing board (or CAD station) to rework and retest their prototype. “Over the past decade, electronic products have become increasingly complex, with smaller parts that are more difficult to handle,” said Ryan. “At the same time, design cycles are shorter than ever.”

Electronic assembly and online forums

To help engineers get ahead of potential design issues, Advanced Assembly offers a free service that assembles designs electronically prior to production. This service gives engineers a sneak peek at their designs by creating a digital image using actual manufacturing data. The service automatically identifies potential design issues and allows engineers to make adjustments before assembly begins, reducing the need for project holds or costly remakes.



“Assembling PCBs electronically first allows us to double check designs so that if there are errors, they can be corrected upfront,” said Ryan. “In addition to the company’s rapid turnaround, electronic assembly is another way Advanced Assembly helps customers complete quality projects on time and on budget.”

Looking for additional ways to support customers and collaborate with its supply partner, Advanced Assembly joined Digi-Key’s user-to-user forum, called TechXchange, as an online group owner. “It’s a great way for us to share our expertise and help those who are designing and building innovative electronic products and circuit boards,” said Ryan. Sharing insights and tips on everything from technology and products to design techniques helps participants solve tough product development challenges while creating a sense of community.

Developing a successful niche has helped Advanced Assembly land hundreds of new customers from a wide range of industries, including medical equipment, defense, oil and gas, and utilities. At the same time, it is successfully growing its existing customer base. Ryan believes that the company’s quick-turn, full-circle service helps its customers excel during the product development process, ultimately helping them bring more reliable products to market faster – and allowing Advanced Assembly to outperform the industry. He credits the company’s close customer ties – and Digi-Key, their accommodating supply partner – for sustaining that success.