DASSAULT SYSTEMES

SOLIDWORKS

AMIGO MOBILITY INTERNATIONAL, INC.

TAKING MOBILITY TO NEW PLACES WITH SOLIDWORKS SOLUTIONS

Amigo Mobility leveraged SOLIDWORKS design and simulation solutions to streamline its development cycles, enabling the power-operated vehicle/scooter manufacturer to expand its product line into new markets.

Challenge:
Streamline complex injection-mold development to improve manufacturability, shorten development times, and reduce costs.

Solution:
Implement SOLIDWORKS Standard design, SOLIDWORKS Professional design, and SOLIDWORKS Simulation Professional analysis software solutions.

Benefits:
- Reduced design cycles by 50 to 75 percent
- Eliminated physical testing of parts
- Minimized prototyping requirements
- Expanded product line to meet other mobility needs

Ever since Amigo Mobility International, Inc. introduced the first motorized cart in 1968, ***Improving Lives Through Mobility***® has been the company's top priority. When a family member began to lose her mobility due to multiple sclerosis, Founder Al Thieme worked diligently to restore her mobility by inventing the first power-operated vehicle/scooter called the Amigo—named for being "the friendly wheelchair."

Today, Amigo Mobility designs and manufactures a complete line of power-operated vehicles/mobility scooters and accessories, and the company's Amigo Shopper products have become fixtures at grocery stores and shopping centers worldwide, with four of the top five U.S. retailers choosing Amigo motorized and manual mobility solutions.

Until 2001, Amigo Mobility used AutoCAD® 2D design tools to develop its products. That's when increasing competition and the need to streamline and accelerate new product development prompted company management to decide to upgrade to a 3D development platform. According to Engineering Manager Jordan Thieme, Amigo Mobility first began the transition by using the Pro/ENGINEER® package, but soon moved to MicroStation® software. When management learned that a staff member was proficient using SOLIDWORKS® software and that most of the company's supplier base used SOLIDWORKS, Amigo Mobility standardized on the SOLIDWORKS design environment.

"At the time that we made the switch, SOLIDWORKS offered more features and a lower cost of maintenance," Thieme explains. "Today, we rely on SOLIDWORKS to achieve our product development and business expansion goals."

Amigo Mobility standardized on SOLIDWORKS—implementing SOLIDWORKS Standard design, SOLIDWORKS Professional design, and SOLIDWORKS Simulation Professional analysis software—because it is easy to use and provides a fully integrated design and analysis solution. "Working in SOLIDWORKS, it's extremely fast to model parts, drop them into an assembly, and simulate performance," Thieme says.

STREAMLINING PRODUCT DEVELOPMENT

When Amigo Mobility first implemented the SOLIDWORKS design platform, the company realized a 20 percent reduction in design cycles. As the company's design engineers have become more familiar with the software, design cycle reductions have grown. Today they stand at 50 to 75 percent. "The SOLIDWORKS 3D design environment has allowed us to streamline development and cut design cycles in half because we can better visualize and evaluate part designs and assemblies, and eliminate processes that are no longer necessary," Thieme stresses.

"For example, because we pride ourselves on building products to last a lifetime, we used to physically test every part that we produce and then prototype and test full assemblies until we were satisfied," Thieme continues. "Now, we can test assemblies at the end of the process prior to release because we can evaluate parts and assemblies using integrated simulation tools. In addition to being able to model parts and assemblies faster in SOLIDWORKS, we can check how parts fit, function, and perform in an assembly during design, which has allowed us to minimize prototyping requirements."

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— Jordan Thieme, Engineering Manager

SIMULATION PAID FOR ITSELF IN ONE WEEK

Amigo Mobility recently added SOLIDWORKS Simulation Professional software to resolve issues encountered through testing during the development of a new product line. Specifically, the failure occurred under load where two parts are bolted together. The company's engineers ran finite element analysis (FEA) studies of the assembly, and then used the software to evaluate possible fixes.

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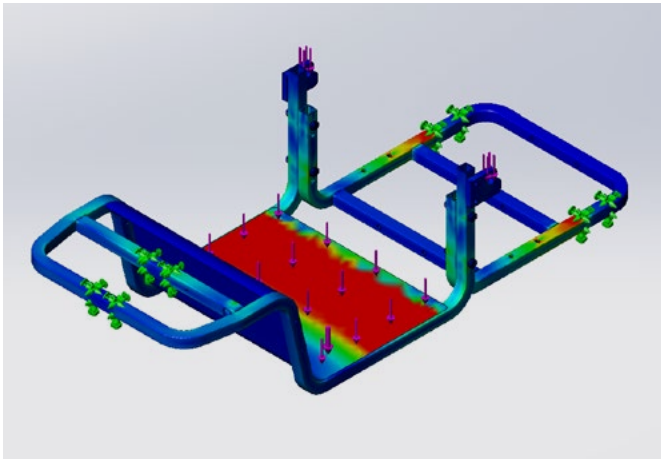

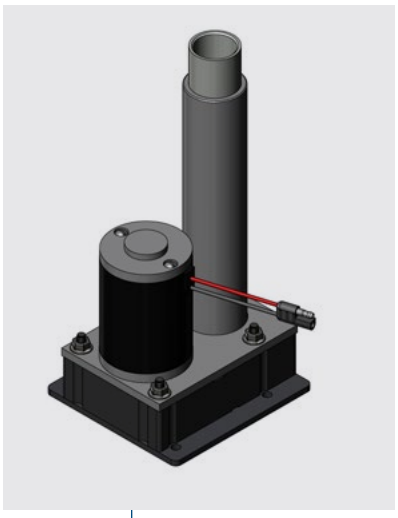

"We tried four different solutions," Thieme explains. "SOLIDWORKS Simulation Professional allowed us to identify and cost-compare the best solution without having to build physical prototypes. We ended up using thicker-walled tubing in that area, and the software helped us to solve the issue, maintain our high-quality standards, and save $5,000 in prototyping costs. In short, SOLIDWORKS Simulation Professional software paid for itself in the first week in terms of prototyping and lost opportunity savings. We now rely on the software to develop new products and use a safety factor of two to maintain our high level of quality, which is an Amigo brand characteristic."

EXPANDING MOBILITY PRODUCT OFFERING

The productivity gains that Amigo Mobility has realized since moving to the SOLIDWORKS design platform have helped the company increase throughput and expand its product line into new markets. In addition to the manufacturer's original healthcare, shopper, fold-up travel, and custom-designed line of products, Amigo Mobility recently introduced its material handling line: four models designed for personal use in warehouses and factories, which range from walk-behind to ride-on models with capacities up to 1,000 pounds.

"We now have an exponential number of models, and SOLIDWORKS tools are helping us to introduce innovative new products quickly and cost-effectively," Thieme says.

With SOLIDWORKS design visualization and simulation tools, Amigo Mobility can more quickly and cost-effectively visualize new product designs and evaluate design performance, saving time and money, and minimizing prototyping in the process.

Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE®** Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit **www.3ds.com**.

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