



BENEFICIAL DESIGNS, INC.

Access to nature is something many people take for granted; for others, however, enjoying the great outdoors can be extremely challenging. To lessen these challenges, Beneficial Designs works towards universal access through research, design, and education. The company seeks to enhance the quality of life for people of all abilities and work to achieve this by developing and marketing technology for daily living, vocational, and leisure activities. Peter Axelson, company founder and CEO, recognized the need for both improved accessibility technologies and improved accessibility information by drawing upon his experience as an engineer and wheelchair user. The late Dr. David Gray, a researcher and policy maker within the rehabilitation community, inspired and encouraged Beneficial Designs to apply for support to develop new and innovative technologies through the SBIR program.

PHASE III SUCCESS

Beneficial Designs has licensed its products to numerous firms and had several spin-off companies come from its SBIR technologies.

AGENCIES

DOT, NIH, ED, USDA

SNAPSHOT

Beneficial Designs works towards universal access through research, design, and education; seeks to enhance the quality of life for people of all abilities; and works to achieve this by developing and marketing technology for daily living, vocational, and leisure activities.

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“Initially we were doing wheelchair testing and had ideas about designing adaptive equipment for wheelchair users and mobility device users. I have personal experience as a user and engineer, so through the NIH SBIR program, we were able to begin designing technologies for users that we felt needed to be developed. First we designed a back support for wheelchairs that became commercially available,” said Mr. Axelson.

The company achieved early success by licensing and commercializing its wheelchair technologies to existing manufacturers of wheelchairs and recognized early on that this would be the most efficient approach for the company. Today Beneficial Designs has expanded beyond technologies to improve assistive devices into designing technologies and processes that help make everyday terrain more usable for all. This work ranges from designing instrumentation to efficiently identify and measure tripping hazards, which are a major concern in many public spaces, to its assessment processes for trails and sidewalks.

“We look for the next thing that needs to be done based on the available technology and the needs of the country,” said Axelson, “We’ve gone from designing very specific technologies for a small user group to designing technologies that address larger and larger problems and populations – accessibility in general affects all Americans. We can make a bigger impact by improving the accessibility of our country by working on larger products like the environment – trail and sidewalk measurement affects the safety and usability of every park and city in the country potentially.”

Beneficial Designs' Public Rights of Way Assessment Process (PROWAP) began as a Department of Transportation (DOT) SBIR-funded effort and has grown from there. PROWAP replaces traditional, manual sidewalk assessment methods that are time consuming and physically demanding. PROWAP allows users to quickly and easily assess the sidewalk environment. The company's assessment experts utilize PROWAP to measure the sidewalk infrastructure and create a transition plan for the removal of hazards to increase the accessibility and usability of the community by pedestrians. This process combines the company's measurement instruments with a service element. Today PROWAP is being used on college campuses across the country to help the institutions reduce the risk of injury and the associated liability issues.

"SBIR is a valuable program because there is a need for focusing resources on new technologies that are risky to develop," said Axelson when discussing the company's origin. "We were working in this area and wanted to find a funding mechanism, so Dr. Gray identified the potential benefit of SBIR. Dr. Gray suggested that we apply for funding through the SBIR program. The SBIR program has been helpful for developing many 'orphan technologies' which are needed by persons with disabilities that have smaller markets than most mainstream technologies."

Mr. Axelson credits his training and education for the company's ability to achieve Phase III success. This training began at the Air Force Academy studying aeronautical engineering, but after breaking his back in a training accident Mr. Axelson received vocational rehab and was able to finish his degrees in Stanford's smart product design program. The product design program philosophy is different than traditional engineering training and trains students to see a need and come up with solutions to meet the need. Mr. Axelson believes that his ability to see unmet needs is a major component of Beneficial Designs' success – almost every technology has been commercialized in one form or another.

"For us, being a small company is an advantage because we're able to maximize the talent by not having to over-delegate. People with a passion are needed for development and that can get lost in a larger company. Even though our company hasn't grown to hundreds of employees, we have started several successful spin-off companies," said Axelson. "We don't try to hold onto every part of what we do, but we like to see it grow. Some of our past interns, employees and consultants have gone on to start other companies or pursue meaningful careers on their own after their time at Beneficial Designs. Two of these other companies are manufacturing and marketing meaningful products that are benefiting the independence, function and quality of life for persons with disabilities."

The company was started in California, but moved to Nevada because it is much more affordable for Beneficial Designs to run its business there. Axelson believes that Nevada provides a good cost of living and business environment, which has been important to the company's success.



The Flexrim uses a flexible urethane to connect the hand rim to the wheel of the wheelchair to reduce the grip and strength required to propel the wheelchair and thereby improve the efficiency of propulsion.