Boise State University is working to make Idaho a place where entrepreneurs, inventors, business owners and manufacturers can push on any door and find it open to the support they need to succeed.

These players in economic development often face complex technical problems in the design and prototype of new products that they don’t have the expertise or equipment to solve. That’s where Boise State comes in.

President Barack Obama highlighted that distinctive quality of Boise State when he visited the university in January. “The work you do here is one of the reasons why Boise is one of our top cities for tech startups,” he told the crowd gathered for his first stop after his State of the Union address.

While on the Boise State campus, the president visited the New Product Development (NPD) Lab, one of the ways the university helps inventors bring their ideas to reality. For example, Mark Melni, a classically trained pianist, spent most of his adult life working with computers and wires. Crimping wires in the traditional manner was wearing out his hands and those of his staff at Microchips Etc.

Melni came up with an idea he called the Melni Electrical Connector. The connector had a design concept similar in principal to a finger trap toy. A simple twist of the invention’s end caps produces an electrical connection.

Using 3D modeling and solid prototyping, an NPD Lab team of mechanical engineers, professors, engineering students and an artist helped Melni evolve his concept into a patented product. His initial purchase order of $550,000 exceeded first-year production estimates by 10,000 units of the device, which are manufactured in Meridian and Twin Falls.

“We’re making the tremendous research expertise and millions of dollars’ worth of specialized equipment at Boise State available to business and industry,” said Dick Sevier, coordinator of C-TAP, which is short for Center for Advanced Energy Studies (CAES) Technical Assistance Program. CAES is a research and educational partnership of Boise State University, Idaho State University, the University of Idaho and the Idaho National Laboratory.

To solve problems brought to C-TAP, Sevier seeks help from researchers in chemistry and biochemistry, physics, geosciences, materials science and engineering, computer science, electrical and mechanical engineering and others.
Boise State supports a number of area industries that provide a variety of innovative products, including:

1) confections from Idaho Candy Company;
2) a robot from House of Design;
3) a sampler from Brave Girls Club;
4) hand-poured pewter jewelry from Bliss Stamped Jewelry; and
5) a T-800 Makerbot from STEMfinity.

Left: President Barack Obama visits with Boise State College of Engineering Dean Amy Moll, engineering student and lab engineer Chris Brown, and lab manager Calvin Allan in the New Product Development Lab in January 2015.
Currently, C-TAP is working with Jana Kemp, a local entrepreneur who has an idea for a product that uses motion-capture technology.

“C-TAP is coordinating this work between Jana and Boise State’s Center for Orthopaedic and Biomechanics Research and also facilitating interdisciplinary discussions with Drs. Steve Cutchin and Anthony Ellertson of the Department of Computer Science,” Sevier said. “They each conduct research relating to computer graphics, an integral component of Jana’s product.”

Many of the technological solutions business people are looking for are housed under the College of Business and Economics (COBE) umbrella of business assistance centers.

“The business community wants the latest thinking, so they bring their problems to us,” said Dr. Ken Petersen, COBE dean. “There shouldn’t be a wrong door when someone needs assistance from Boise State University.” Thanks to the university’s transdisciplinary nature, some of those problems may get solved by engineers, and others may be solved by artists.

One example is when Medtronic Inc., the world’s largest medical technology company, asked for help showcasing a model of a new stent, a small mesh tube that’s used to treat narrow or weak arteries. The challenge was to create a strong, large-scale, high-quality model that could demonstrate technology imperceptible to the naked eye for display at a Paris trade show.

TechHelp, which provides technical and business assistance to manufacturers, worked with a staff artist who prepares exhibits for trade shows. Using a 3D printer, the artist created a workable model that Medtronic could take to the Paris show.

“In the end it was a stent scaled up nearly 100 times normal size, illuminated from within to showcase a new means of drug delivery,” said Calvin Allan, new product development manager for TechHelp.

“We work with companies to help them grow and be more competitive globally,” said Steve Hatten, TechHelp executive director. “Students, especially, have been amazing contributors to this success, while at the university and afterward.”

President Obama pointed out that Boise State is partnering with companies to do two things. “You help students graduate with skills that employers are looking for, and you help employees pick up the skills they need to advance on the job,” he said. “So you’re working together. And you’re seeing progress, and it’s contributing to the economic development of the city and the state, as well as being good for the students.”

Allan (MS, mechanical engineering, ’06) was one such student. Allan had been a student intern with the NPD Lab, which is housed in the College of Engineering and staffed by the TechHelp NPD team. He and the rest of the team of professionals and engineering students helped local inventor Caleb Chung launch his animatronic pet dinosaur toy called Pleo.

Pleo is designed to mimic the imagined behavior of a baby Camarasaurus. The original Pleo used 38 sensors, 8 computer processors and 14 motors to “learn” from its experiences and develop a distinct personality.

The Boise State team assisted with computer-aided design, provided ideas and advice on manufacturing and
Launched in 2007, Pleo has since been acquired by a Hong Kong company, which has issued a second generation of the toy with even more artificial intelligence. Chung continues to pursue other inventive ideas with the NPD Lab.

“It was a phenomenal opportunity,” said Allan, who after graduation went to work for Chung’s UGOBE company as a mechanical design engineer.

“Students understand the value of our consulting services,” Hatten said. “After they enter the professional world, they refer companies to Boise State University when those companies need help.”

Other doors also eventually open into the services offered by Boise State. “One great thing about Idaho is that all of the service providers know each other and we know each other’s roles,” said William Mullane, TechHelp marketing manager.

For example, when Boise-based Rekluse Motor Sports owner Al Youngwerth sought help to grow his company’s international sales, his marketing team approached the U.S. Commercial Service. The Commercial Service is one of Boise State’s partners in promoting economic development in Idaho and helped connect Rekluse with the international business experts at the university.

Startup companies also can find the help they need through the Boise State Technology and Entrepreneurial Center, or TECenter. Located in Nampa, the TECenter offers start-up and early-stage technology company entrepreneurs the expertise, networks and tools they need to succeed. The TECenter is affiliated with Idaho Small Business Development Center, which is supported by the College of Business and Economics.

One of the center’s recent success stories is BookLamp, which developed big data-style book analytics services. In 2014, Apple acquired BookLamp for between $10 million and $15 million in an effort to be more competitive in the e-book retail space.

“Every time a startup leaves the center, capital is injected into the local economy and more entrepreneurs become experienced in the process of starting, building and growing successful local companies,” said TECenter Director Denise Dunlap.

“There are many great examples of how Boise State University helps businesses in the state and beyond,” said COBE Dean Petersen. “At Boise State, we have the ability to reach outside the classroom and provide value that directly impacts the Idaho economy.”