ECONOMIC IMPACT

MEP Center Impacts are based on clients surveyed in FY2020

- $80 Million  Total Increased/Retained Sales
- 510  Total Increased/Retained Jobs
- $79.6 Million  New Client Investments
- $28.5 Million  Cost Savings

SOUTH DAKOTA MANUFACTURING AND TECHNOLOGY SOLUTIONS

The South Dakota Manufacturing and Technology Solutions’ mission is “To provide solutions which will assist all of South Dakota manufacturers to prosper and grow”. We support industry and business in the workplace—whether that's in the office, on the factory floor, at a hospital, in a bank, or on the job site. With our manufacturing experts and network of industry resources, we provide the change that makes the significant difference between surviving and thriving. Our tailored solutions, university and community connections, and engineering know-how can help your company stay abreast of the latest technologies and best practices in engineering and business management. Ultimately, our aim is to help you increase productivity, efficiency, safety and quality. As a result, your profits rise and your business thrives. Our vision is “To be the first choice of South Dakota manufacturers, as a trusted partner, to advance their economic prosperity and become best in their markets”. Backed by National Institute of Standards and Technology (NIST), South Dakota Manufacturing and Technology Solutions has access to a vast number of both public and private resources and certified trainers with experience in business and industry.
PICTURE PERFECT INSPECTING

ABOUT ELECTRONIC SYSTEMS INCORPORATED. South Dakota Manufacturing and Technology Solutions (MTS), a NIST MEP affiliate and member of the MEP National Network, offers companies automation help as a new era of manufacturing begins. What technology was once only feasible for large companies is now becoming more available to small and medium-sized manufacturers.

Electronic Systems Inc. (ESI), a lean electronics manufacturing service provider with 250 employees in Sioux Falls, South Dakota, benefited from collaborating with MTS on their new technology service.

THE CHALLENGE. Leadership at ESI reached out to MTS for help with identifying and integrating technology that would assist with their inspection process. ESI felt confident collaborating with MTS because of the center’s automation expertise, programming abilities, and a strong past working relationship. Together they decided on building an automated inspection system using a collaborative robot and a robotic-guided camera.

A collaborative robot, or cobot, was appealing for many reasons. The lightweight, transportable size made it easy to integrate on the production floor and more cost effective than a traditional robot. The intelligent safety features of the cobot allows operators to feel comfortable working alongside the piece of technology too. If anything bumps into the cobot, it will simply stop until prompted to start again.

MEP CENTER’S ROLE. MTS aided in the design and development of the cobot attachments, including a customized 3D printed gripper and placeholders. One placeholder signals to the cobot that the assembly is ready for inspection, prompting the robotic guided camera to take pictures of the assembly from a variety of different angles. After analyzing the photos, the robotic arm places the assembly into a pass or fail placeholder to let operators know whether the assembly is ready to be packaged. Any problems perceived when examining the assembly are on the monitor’s display next to the cobot. Operators can quickly pinpoint where the problem is located and make changes before proceeding.

The automation piece is a strong asset to the team, clocking in an average of 18 hours a day. “The operators have been very receptive to it,” according to Hans Haase, ESI manufacturing engineer. Its user-friendliness and intuitive features have increased productivity and allowed operators to focus on other important aspects of the assembly process. While more changes in technology adoption are likely to occur, their dedication to advancing their employees’ well-being and productivity while providing legendary service to others will not.

"Employees often think robots will replace jobs, but that’s not even close to what we’re looking to do. We want to utilize the robot to help our people become efficient and enjoy their work more -- shifting the tasks they don’t enjoy as much to the robot and giving them more opportunities to do what they like doing."

-Hans Haase, ESI Manufacturing Engineer

RESULTS

- Improved quality control
- Real-time defect detection
- Reduced rework
- Increased employee and customer satisfaction

The MEP National Network™ is a unique public-private partnership that delivers comprehensive, proven solutions to U.S. manufacturers, fueling growth and advancing U.S. manufacturing.

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

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