Manufacturing Institute's Return on Investment Calculator

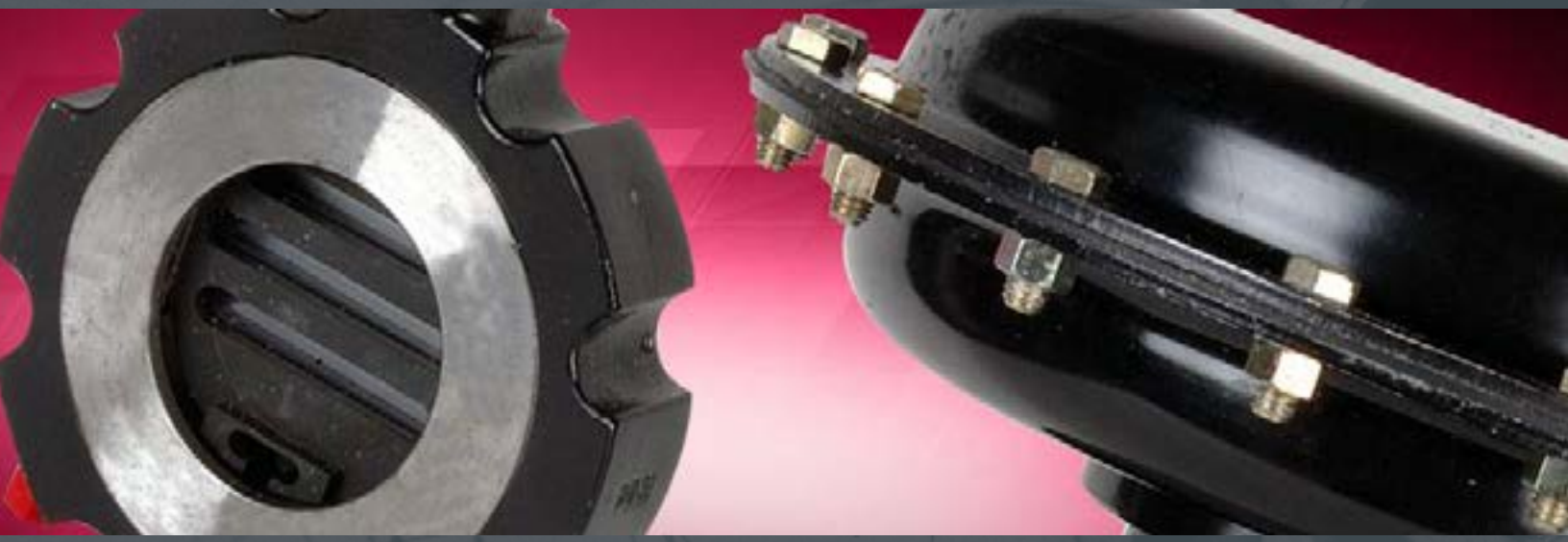
Case Study: **Richards Industries**

completed by Stephen Tucker

PARTNERS FOR A COMPETITIVE WORKFORCE

The Joyce Foundation

MANUFACTURING Institute



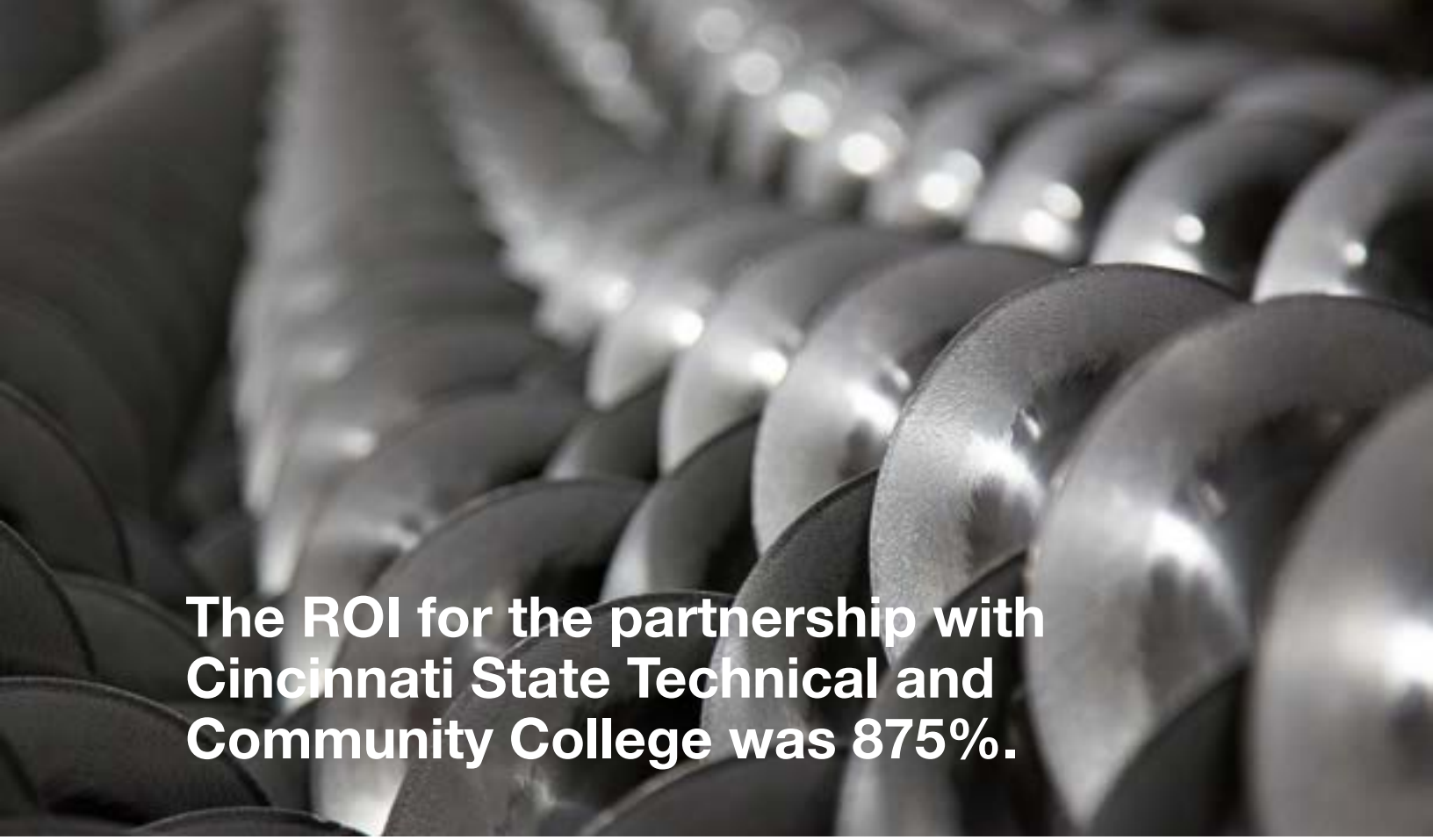
Richards Industries is the parent company of six distinct industrial product lines: Jordan Valve, Steriflow Valve, Marwin Valve, LowFlow Valve, Hex Valve, and Bestobell Steam Traps. Their key markets include chemical, petrochemical, pharmaceutical and food processing industries as well as paper products, tire and rubber, machinery and electrical equipment, transportation equipment and energy industries. Their global network of representatives and distributors are their customers' most valuable resource with over two hundred representatives throughout the world. In 2014, Richards Industries total revenue exceeded $35 million.

Richards Industries meets customer needs with a wide range of new and proven manufacturing technologies. Complete in-house CNC machining, painting, assembly and testing, along with material traceability and extensive quality procedures assures that Richards Industries products exceeds expectations. Over 100,000 square feet are devoted to CNC turning centers, vertical machining centers, milling machines and drill presses. Custom engineering and an exceptional veteran work force are the foundation to their superior manufacturing capabilities. The plant, located in Cincinnati, Ohio, currently employs 145 total employees with 87 working in production, earning an average loaded hourly salary of $16.90.

As business continues to grow, Richards Industries has found it extremely difficult to find qualified candidates to fill middle and high skill job openings. As a result, Richards Industries began to engage with Partners for a Competitive Workforce's (PCW's) Advanced Manufacturing Industry Partnership (AMIP).

Since 2009, PCW has convened the AMIP to meet the needs of employers and employees in the industry. The industry partnership model utilizes employer leadership to align education with industry, design career pathways with portable and stackable credentials that meet industry needs, engage education and workforce stakeholders to train the workforce, and utilize industry intelligence to develop long term strategies to improve the talent pipeline.

In 2012, an advisory committee of manufacturers

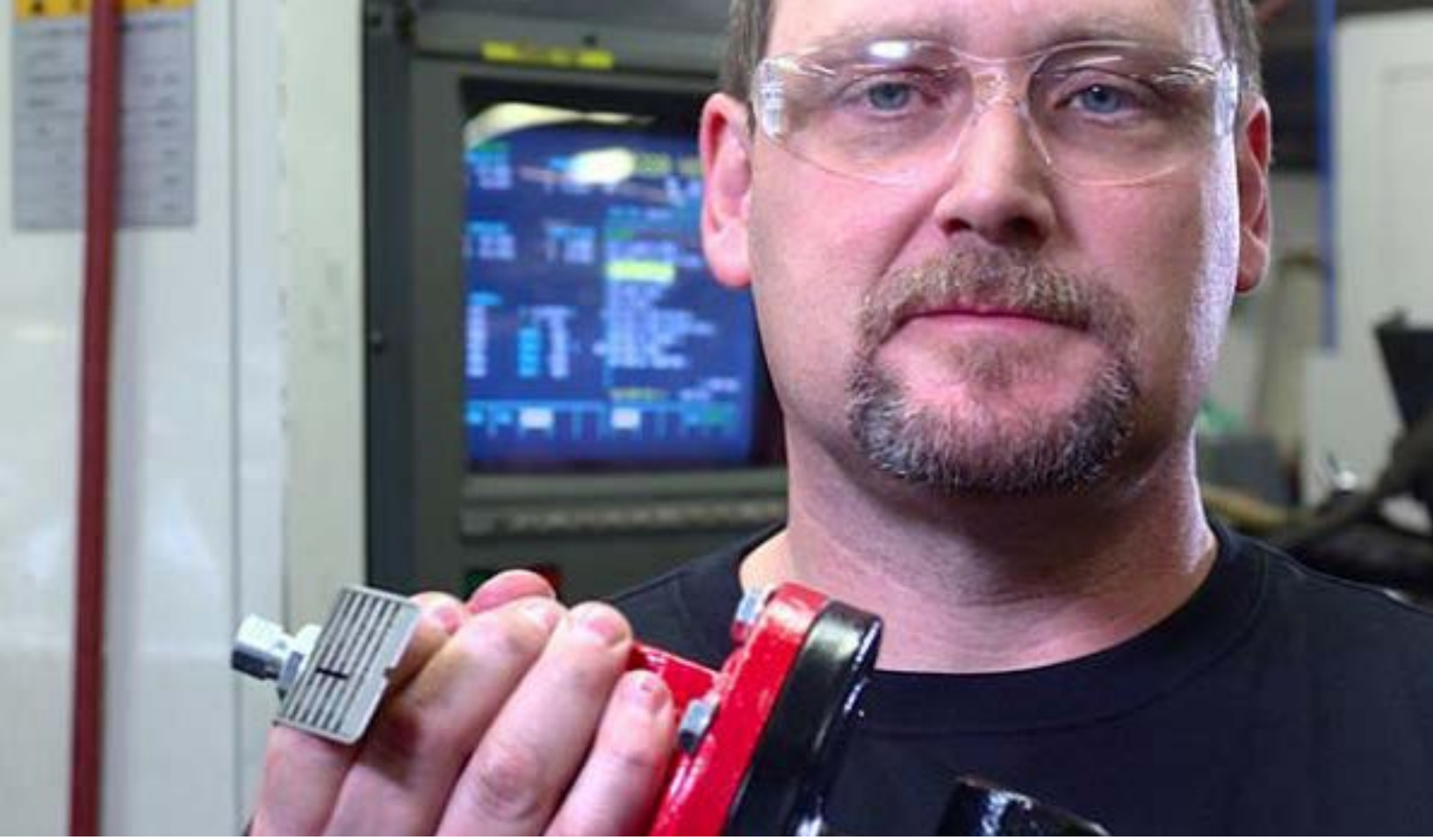


The ROI for the partnership with Cincinnati State Technical and Community College was 875%.

led by Richards Industries partnered with Cincinnati State Technical and Community College to develop an entry level Machine Operator Training Program. Courses included machine shop math, mechanical plan reading, safety, SPC, mechanical machining and intro to CNC. In 2013, Richards Industries enrolled 10 incumbent workers who completed the Machine Operator 1 curriculum designed to lead to the National Institute for Metal Working Skills (NIMS) Certification. The total investment in the project was $28,000.00 with PCW funding 50% and Richards Industries funding 50%, or $2,800 per employee.

The Manufacturing Institute developed a return on investment calculator that could be used to quantify the business impact of partnering with an educational institution on manufacturers when used opposed to traditional sourcing options. The calculator identifies current costs incurred by manufacturers in hiring and training new job seekers and compares the current process to costs associated with the implementation of an alternative method.

To measure the return on investment for this initiative, interviews were conducted with Cheryl Neiheisel, Vice President of Human Resources; Bill Metz, Vice President of Operations; and Bob Linville, Machining Manager.



The Cost of an Open Position

The first section of the toolkit was designed to determine the cost of an open position and to confirm expenses incurred during the current hiring process. The metrics are based on assumptions of the costs related to hiring machine operators.

Richards Industries predetermined that manufacturing productivity equals $45,000.00 in revenue per employee per month or $1,500.00 daily which is their cost of an open position. Richards Industries has an 11% companywide turnover rate and it takes approximately 30 days to fill a vacant position. Richards Industries also experiences an increase in overtime of 8.32% per vacant position. Production employees earn a fully loaded salary of approximately 27.00 per hour while working overtime. In 2014, the total cost of open machine operator positions at Richards Industries was $360,000.00 (8 x $45,000.00 = $360,000.00).

Recruiting and Hiring Costs

Recruiting and hiring costs consisted of advertising costs, candidate interviews, internal meetings, screening, testing, and background checks. Richards Industries employed a unique process in which they would typically conduct hiring events at their facility using up to 10 managers to interview approximately 50 candidates for 5 vacant positions. Qualified applicants receive second and third interviews with successful candidates eventually tested and hired to fill vacancies. Although this is a time consuming cumbersome process, the actual business costs of staff time including loaded salaries and testing equals $1,889.00 per new hire.

On the Job Training Costs

A new hire generally begins with low productivity and costs the company more than they bring in value and becomes more

productive through on the job training and a successful onboarding process. On the job training costs consists of employee and supervisor fully loaded wages and equipment and supplies utilized during time spent in training. Richards Industries has three levels of machine operator classifications, machine operator 1, 2, and 3 and it typically takes a new hire 4,000 hours of on the job training to reach 100% productivity of a machine operator 3 position. During this period, supervisors usually spend 25% or their time managing and training employees, validating and confirming competencies until the employee becomes 100% productive. With its current processes, Richards Industries incurs an on the job training cost of $91,000.00 per new machine operator hired.

Business Impact

When a company lacks key skilled roles on a production line, it impacts productivity, efficiency and eventually, profitability. Having skilled manufacturing roles go unfilled influences several different operational metrics including, quality, scrap, and customer satisfaction. Manufacturers routinely experience an increase in overtime cost, production cycle time and production downtime due to an unskilled workforce. Although Richards Industries reported an increase in overtime of 8.32% per open position and agrees that cycle time and production downtime are both impacted by a lack of a quality workforce, they did not want to include these metrics into the final return on investment calculation.

Cost Savings Resulting from partnering with an Educational Provider

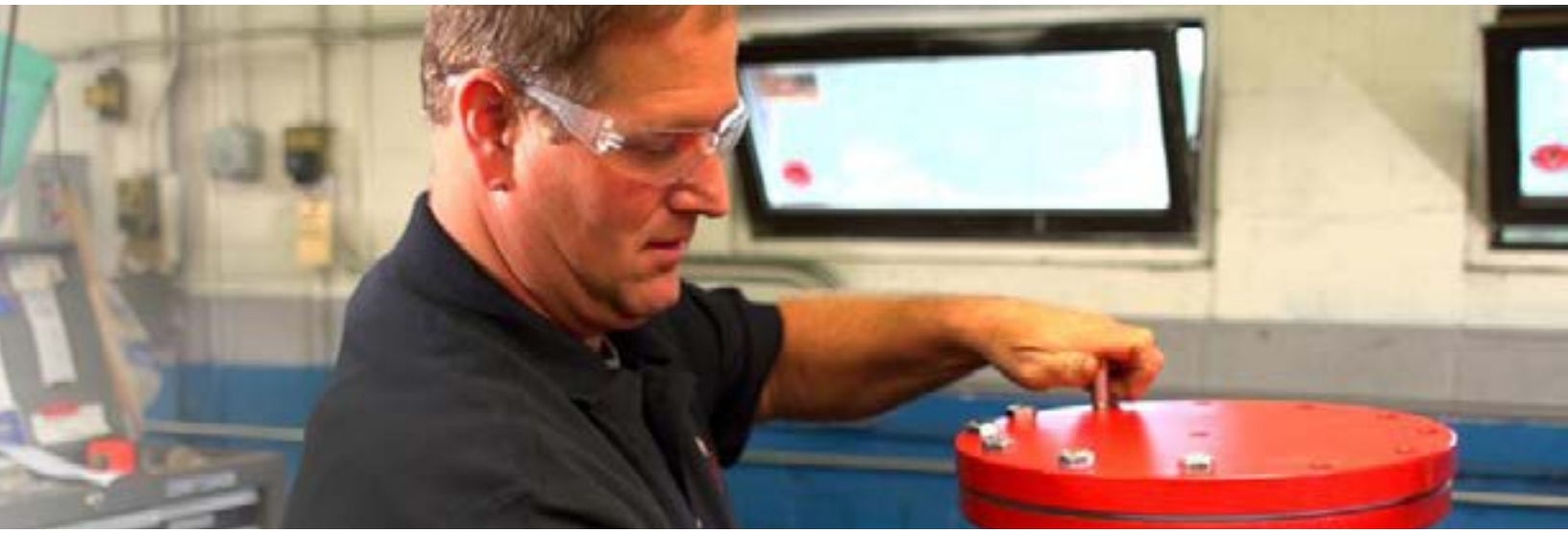
There are many cost savings that can potentially be impacted when employers partner with an educational provider to develop and train a qualified workforce including reductions in hiring, turnover and overtime costs. Richards Industries reported a reduction of time spent in on the job training for all ten of their incumbent workers who participated in the training by approximately 30% when compared to employees who did not participate in this project. This reduction in on the job training saved the company $27,300.00 per employee or $273,000.00 for this project. Although all 10 incumbent workers are still employed with Richards Industries at this time, Richards Industries did not want to attribute a cost savings resulting from a reduction in turnover in this calculation.

Cost to Implement and Return on Investment

The total cost per participant for this project was $2,800.00 and generated a total cost savings of $27,300.00 per employee through reducing the time spent in on the job training and time necessary for employees to become 100% productive. The return of investment for this project is 875%. ROI = (Gain – Investment/ Investment) $27,300.00 - $2,800.00 = $24,500.00/$2,800.00 = 8.75 x 100 = 875%.

Conclusion

In order to remain competitive in today's economy, manufacturers must develop and implement strategies to attract and retain a qualified workforce. Partnering with an educational provider can be a critical first step in ensuring businesses has the talent they need now and in the future. "As a company recognized as a best place to work for several years, I was well aware of many the benefits of investing in employee training such as increased job satisfaction, commitment and loyalty," said Cheryl Neiheisel, Vice President of Human Resources. "However, I was pleasantly surprised at the cost savings and the verified return on investment of this training initiative by significantly reducing our on the job training costs and time spent to become 100% productive for our middle skill employees."



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