Manufacturing Institute's Return on Investment Calculator

Case Study: **Northeast Ohio**

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Northeast Ohio manufacturing companies are faced with the same challenges experienced by companies throughout the state and the region. These include an aging workforce, increasing skill demands due to automation and new technologies, pressures to reduce costs and improve quality. As the economy has rebounded, these challenges have become critical to the companies' success.

Manufacturing companies have begun to explore ways to proactively become involved in developing solutions to these challenges. Through partnerships with community colleges and Manufacturing Extension Partnership (MEP) organizations, programs have been implemented and the potential impacts are currently being assessed. Northeast Ohio through the MEP Affiliate has been implementing a national training model to address the workforce skill shortages in CNC machining. This program is less than a year old and is being rolled out in partnership with three regional community colleges.

The Manufacturing Institute's Return on Investment Calculator was used in order to begin to determine the value of the model to participating companies. The following information represents a study of experiences from two privately held companies one in the oil and gas and the other in the aerospace supply chains who agreed to participate in a study using the calculator to assess the value of their involvement in the Right Skills Now (RSN) program. The RSN is a national training model designed to quickly prepare individuals for CNC machining positions. It is characterized by employer input and support, delivery of training that includes college credit and is part of a career pathway and leads to National Institute for Metal Working Skills (NIMS) Certifications. This model is being implemented with a number of companies and community college partners. The two companies included in this study participated in RSN programs delivered by different education partners. Both RSN programs followed a similar process that begins with employer engagement and commitment to assisting the education partner in developing the program content, delivering the fast track training and providing paid internships for the completers. Sin

One RSN program has just completed and one is just getting started. In both cases, the companies' leadership recognized the importance of being proactive in the development of regional workforce

solutions and having a seat at the table to inform the process and ensure their participation in the outcome. Each of the companies is facing workforce challenges and both agreed that the partnership with a community college and the RSN model provides one strategy to address their current and projected future CNC Machining shortages. They committed staff time to involvement from the beginning of the process.

The companies provided subject matter experts to participate in an occupational job task analysis process to identify curricular components common across the participating companies. HR or training associates participated in follow up meetings and applicant interviews to ensure the content and candidates had the potential for a good fit with the individual companies. Throughout the training process, associates from all of the participating companies are available to assist with delivery and to offer plant tours to participants. This model does not require the company to provide any upfront funding for the project. The training costs are covered by grants, student loans, or publicly funded Individual Training Accounts. However, the company must commit to paying the student for an 8-week, 40 hour-per-week internship.

Both companies participated in the use of The Manufacturing Institute's ROI Calculator and the following information reflects their perceptions and successes to date. Prior to this exercise, neither company had considered the metrics that could be impacted by participation in this process. Nor had they considered an ROI assessment taking into account the value and cost of involvement in the process compared to the value and impact of hiring skilled workers.

Since this is a new process for the companies, they were assured of anonymity at this time. They have expressed interest in continuing to gather data on the metrics and to participate in further studies as they track the outcomes for a longer period of time.

Recruiting and Hiring Costs

This section provides the basis for the company to look at current costs and practices that could be affected by changes in recruitment and selection processes. Human Resource and Training personnel provided input into the responses. Company A has 198 technical employees and has hired 14 new employees in the past year. The fully loaded hourly rate is $22.00. Company B has 85 technical employees and has hired 10 in the past year. The fully loaded hourly rate is $20.00. The companies will interview between three and seven candidates for each vacant position. The costs for this process including advertising, screening, interviewing, and testing range from $1,800 for Company B to $6,000 for Company A.

On the Job Training Costs

On the Job (OJT) Training is critical to an individual's success in the position. New hires are required to go through extensive OJT to learn how to do the job and the processes that are unique to each individual company. OJT costs are significant since not only is the new hire unproductive but the supervisor/trainer is limited in productivity while training the new worker. Initial OJT costs at Company A to prepare a new hire to work independently at the beginning level are about $2,400. Company B has an extensive OJT process that includes cross-training individuals to work on a number of machines and leads into an apprenticeship. The costs are approximately $30,000 per new machinist from hiring to full productivity.

Business Impact

The metrics included in this section deal with overtime costs, downtime, and cycle time. Neither of the companies felt that they could adequately respond to these projections. Both companies indicated that they try to control work flow so that overtime is limited. Although there are times when it is required, it was difficult for either to identify an average overtime per week to be included in the calculations. Even an average of 1 hour per week of overtime in Company A could cost the company as much as $30,000. Company B indicated that the average could be 2 hours per week and, using the research suggesting a 10% increase due to the skills gap, the cost could be as high as $26,000 if the skilled positions are not filled. Both agreed that although difficult to arrive at a specific amount, a shortage of skilled workers impacts the company's ability to meet their customers' demands.

Cost Savings Resulting from partnering with an Educational Provider

The need to have access to a better pool of candidates was the motivating factor for these two companies to become involved with the RSN model. As with many companies in the region, they were seeing fewer candidates with even minimal skills that were indicative of an ability to be trained as a machinist. These individuals were requiring more OJT and were less likely to be retained in the positions. The RSN model offered the companies an excellent opportunity to access better candidates with minimal initial investment. The recruitment, initial screening (including drug testing, background checks, and skill assessments) were included as part of the RSN model at no cost to the company. Additionally, the cost for initial industry certifications is included in the cost of the program and paid by the individual. There was little risk and the investment, although significant in terms of staff time involved in the process, was minimal when compared to the typical recruiting and hiring costs.

Reduction in OJT was also a factor in this model. The companies had input into the training content, so they knew what was being taught in the program and knew the knowledge and basic skills being mastered in the training program. Although OJT is still needed to prepare a new hire to work in each individual company, it is being done as part of the internship experience. The companies are

finding that the OJT can be reduced as much as 50% from initial placement in the internship position to working independently. Company A suggested that the annual cost savings could be as much as $527,282. Company B suggested the savings could be approximately $64,540. These metrics will be tracked in the coming months as the impact of the program on these practices is monitored. Ideally, the companies expect long term impact to include improved retention due to better selection practices, reduced overtime, improved productivity, and increased opportunity for promotion and individual and company growth.

Cost to Implement and Return on Investment

The figures in this section guide the company in the identification of time and costs incurred from initial planning through implementation and full employment. As noted, this model is unique in that there is not an expectation for individual company financial contributions. So, the primary company investment is the cost of staff time allocated to the process. The calculator compares the value of the staff time committed to the process to the potential company cost savings and benefit.

Company A has a long history of involvement with educational partners. They have committed staff time at the middle and high school level to introduce manufacturing careers and the potential in their company. A result of these efforts has been identification of career technical high school graduates as new hires. They have also worked with the community college partner to ensure that there are pathways for their employees to pursue higher education and increase their work related knowledge and skills. The RSN model offers the opportunity to hire better prepared individuals into career positions in the company. Company A estimated that it spent about 200 hours in the planning process, 100 hours in project management, and another 100 hours in supervision for a total of 400 hours allocated to this project at a cost of $20,200.

The RSN experience is the first time that Company B has engaged with an education partner in the design and delivery of a training program. It estimated about 20 hours in planning, 9 hours in project management and 60 hours in supervision, for a total 89 hours allocated to the project at a cost of $2,950. Since the wages paid to the students during the internship experience are what would be paid to a new hire as part of initial training, these costs were not included in the computations of either company's costs.

Following is a summary of the ROI using the formula from the ROI Calculator:

Company A: The total company investment for this project was $20,200 and generated a total cost savings of $527,282 through reducing the time spent in recruitment, hiring, and on the job training and time necessary for employees to become 100% productive. The return on investment for this project was calculated at 2,510%. ROI = (Gain – Investment/Investment) $527,282 - $20,200 = $507,082/$20,200 = 25.10 x 100 = 2,510%.

Company B: The total company investment for this project was $2,950 and generated a total cost savings of $64,540 through reducing the time spent in recruitment, hiring, and on the job training and time necessary for employees to become 100% productive. The return on investment for this project was calculated at 2,088%. ROI = (Gain – Investment/Investment) $64,540 - $2,950 = $64,540/$2,950 = 20.88 x 100 = 2,088%.

The unusually large ROI number is due to the fact that the RSN model does not require a financial commitment from the company. By participating in this model with other employers with similar needs, each company is able to benefit from the process and not only access a pool of individuals with skills needed by the company but also select from the pool

individuals who are most likely to fit into the company's culture.

Conclusion

The ROI Calculator is an excellent tool for companies as well as educators and workforce intermediaries. It provides each partner a way to carefully analyze the activities and investments required to prepare individuals for middle skill jobs in advanced manufacturing. The companies participating in this case study were guided in taking a closer look at the costs incurred using their current hiring practices. This was the first time for each company that they had looked at each aspect of the hiring process and the corresponding costs. They commented on the various metrics and how each impacts the bottom line of the hiring and selection costs. It reinforced their commitment to the RSN project and their interest in similar projects that will result in skilled candidates for other positions. It also increased their awareness of the value of their involvement in the planning and implementation compared to the potential cost savings.

Both companies agreed that a greater impact and ROI will be measured in the coming months. Now that Company B has hired the interns as regular employees, they will be comparing their productivity, retention, and promotion to others hired through the typical process. Company A is preparing to accept its first interns. Their success in the internship and transition into full employment will be monitored and compared to other new hires. The ROI Calculator will be used in follow up meetings with the companies to determine if the projections for reduced OJT, improved retention, and increased productivity are greater than anticipated.

This case study demonstrates the value of a model such as the Right Skills Now. Company involvement in planning and implementation ensures content to prepare skilled workers. Education partners can build the delivery model to meet employer needs and can work with the public workforce system and other organizations to recruit potential participants who would otherwise not be prepared to compete for the middle skill career positions. Training that leads to industry certifications offers value to both the individual as well as the company and validates the quality of the instruction delivered by the education partners.

As companies continue to face workforce challenges, they will need to explore new ways to develop and access the required skilled workforce. Clearly understanding the value of their investment not only in time but also exploring the potential for funding these activities can strengthen this approach. It can incent education partners to proactively engage employers. It can increase the value of workforce intermediary's efforts to facilitate meaningful dialogue among all stakeholders. Recognizing the value of investing in the development of quality workforce training programs will lead more companies to work with partners to develop cost effective models leading to qualified candidates and demonstrating the ROI to the participating companies.

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