

“The rate at which individuals and organizations learn may become the only sustainable competitive advantage.” – Ray Stata

## **1 EXECUTIVE SUMMARY**

This report describes the research sponsored by the New Horizons Foundation (NHF) (an HVAC and Sheet Metal Industry Initiative) and conducted by Penn State University into creating and fostering a learning environment in the heating, ventilation, and air conditioning (HVAC) and sheet metal industry. The report has two primary objectives: (1) to define a learning culture for HVAC and sheet metal contractors, and (2) to explain how HVAC and sheet metal contractor organizations can create the environment to cultivate a learning culture.

Companies that possess a healthy learning culture are defined as those that are “skilled at creating, acquiring, sharing, and applying knowledge. This culture embraces change and innovation at all levels for optimum performance and maximum competitive advantage.”

The reasons for HVAC and sheet metal contractors to invest in a learning culture include (1) helping to nourish the company’s largest asset – its people; (2) regaining and maintaining the international leadership of the United States HVAC and sheet metal industry; and (3) enhancing company performance at delivering high standards of products and labor, consequently increasing profitability and repeat business. Research has shown employees who actively enhance their competencies throughout their careers feel more fulfilled at work, perform better, and retain employment with the same company longer.

Despite the benefits, learning cultures are not easy to establish and maintain. They require savvy management committed to creating the desired culture. With the busy requirements of project management and other demands, project managers and supervisors often have little time to invest in the level of management required for a healthy learning culture. Nevertheless, this report tries to help jumpstart such a culture. The first step is to define the standards that managers and supervisors of HVAC and sheet metal contractors must achieve. This can then allow evaluation of performance capabilities against this set of competencies. Finally, employees can then pursue targeted learning and improvement opportunities aimed at enhancing their competencies.

Market leaders Turner Construction and Siemens Corporation provide insightful knowledge about the benefits and impacts of creating a learning culture to the contracting organization. Even the National Aeronautics and Space Administration’s (NASA’s) system for a learning culture can show what HVAC and sheet metal contractors can do to be successful. These organizations invested heavily and over a sustained period of time in technology infrastructure and content development to enable an accessible learning environment for their employees. In the HVAC and sheet metal industry, Southland Industries is adopting a similar web-based infrastructure for their learning environment.

What does it mean to HVAC and sheet metal contractors to develop a learning culture? In essence, it means to shift your personnel development focus on developing discrete skills to bigger capabilities in employees such as how best to use skills, be proactive, solve problems, and exhibit leadership. These capabilities are known as competencies, which are different from skills. A competency means that the individual has a number of specific skills in a particular area and the ability to learn new skills and modify older ones in the same area in order to produce the desired outcomes. An example of a skill is conducting an interview, while an example of a competency is using this skill and others to be a good judge of talent.

Key competencies needed by HVAC and sheet metal project managers and supervisors are included in this report. These are categorized into industry-specific and leadership (which extend beyond the HVAC and sheet metal contractors) competencies. The importance of these competencies to HVAC and sheet metal contractors is evaluated by an industry survey.

An assessment tool has been developed to allow individuals to identify their competency strengths and weaknesses. This tool is included in this report (as Appendix B) for your use. This tool is to be used in a two-step process: first, individually reflecting on oneself; then second, with the individual's supervisor to gain perspective.

To create an organizational culture of learning it is important to identify the mission of the organization; identify the competencies needed to gain a competitive edge and to deliver the desired results; assess the competencies currently possessed and

those lacked; and last, to identify how the organization will cope with the necessary changes.

## Recommendations

To realize the benefits of a robust learning culture across the HVAC and sheet metal contracting industry, the following recommendations should be adopted by the HVAC and sheet metal industry:

1. Actively promote and invest in a learning culture in its contractor organizations. Companies that make this investment and commit over the longer term to creating a learning culture become leaders in their industries.
2. Recognize leading companies and individuals that pursue a learning culture by providing a national award similar to the **Malcolm Baldrige Quality Award** for quality management (<http://www.quality.nist.gov/>).
3. Promote competency-based descriptions of employment positions and ranks for use by HVAC and sheet metal contractors. Current position statements tend to be skills-based, not competency-based.
4. Use an industry standard set of competency-based descriptions of employment positions and ranks for use by HVAC and sheet metal contractors. Those identified in this report have been evaluated by the HVAC and sheet metal industry through an industry survey and thus have a relatively high degree of acceptance by many HVAC and sheet metal companies.

5. As a practical step towards promoting the development of learning culture, and as a way to improve the HVAC and sheet metal industry's language about lifelong learning, competency descriptors should be adopted in training programs offered to the HVAC and sheet metal industry.
6. Expand the NHF online knowledge structure to address competencies. This will further promote an industry-wide transition to learning cultures.

### Who Should Read This Report?

The target audience for this report is executive and human resources managers – those people in the HVAC or sheet metal company responsible for managing project managers and supervisors. Given this audience, a report is the most accessible means of conveying the results of this project.

The project itself is targeted at project managers and supervisors in HVAC and sheet metal companies. Senior executives and HVAC and sheet metal workers are not the focus of the competency sets developed and the learning culture methods proposed. However, the competencies and methods outlined in this report may well be relevant to these other audiences.

Consequently, this report should be read by HVAC and sheet metal executives and senior managers interested in developing a learning culture in their organizations. Others with an interest in cultivating a learning culture will also find this report useful.

## 2 WHY INVEST IN A LEARNING CULTURE?

Investing in a learning culture is the only sustaining way to assure your company's competitiveness. A learning culture helps a company nourish its most important asset – its people. It promotes improvement and betterment in individuals so that employees do more with less and provide better quality service to your customers. It enables technological changes to be implemented faster and with greater success. It promotes the generation of ideas to enhance your business. It provides employees with opportunities to extend themselves. It is a vital component to high-performance contracting. It allows your people to be more fulfilled and increase their satisfaction at work, and thus improves employee retention. The “bottom line” is that it affects your bottom line.

Recent changes to the global marketplace reveal how important it is for companies in the United States (U.S.) to adapt the skills and competencies of their employees. The heating, ventilation, and air conditioning (HVAC) and sheet metal industry might not be as technologically dependent as advanced information technology (IT) industries, biomedical industries, or aerospace industries, but nevertheless it is subject to international market competition that affects business activities and profitability. If U.S. companies are not going to be overtaken by developing countries, they need to keep advancing to the next level of market leadership. A major part of the strategy to do this must be to develop environments where learning is a common and vibrant part of the company culture.