Nader Imani, of Festo Didactic High-tech German employer

Combat worker shortage with business-labor-educator-government partnerships

A Civic Caucus Focus on Human Capital Interview

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Present

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Summary

A high school diploma no longer is sufficient for the skills required for most jobs in manufacturing. Moreover, Minnesota and the rest of the nation face a major shortage in workers qualified for such jobs. Employers themselves need to play a significant role, but not in isolation.

Perhaps taking a cue from countries such as Germany, employers, labor, educators, trainers, and government should develop and implement workforce strategies in partnerships with each other.

Such partnerships would help to calm some employers' fear that investments in training will only encourage workers to seek greener pasture. Many individuals would be more likely to obtain well paying technical jobs if, instead of aiming for four-year liberal arts degrees, they sought two-year, post-secondary certificates attesting to their qualifications.

Background

Today's meeting is another in the Civic Caucus follow-up to its statement several weeks ago on human capital. A recurring question during our interviews on this topic has been how to sort out the role of employers, as distinguished from that of educational institutions and other training organizations, in providing education and training for the specific job and skill categories that employers need to fill.

Shortly after we issued our statement on human capital, we learned of a German robotics firm, Festo AG, that is heavily involved in helping both experienced and new employees keep their skills up-to-date with changing workplace technologies. A Wall Street Journal article recently described Festo's approach. Interested to determine whether the company's efforts have applicability to Minnesota's human capital shortage, Civic Caucus has invited Nader Imani, chief executive of Festo Didactic, the company's stand-alone education division, to visit with us today.

Biography

Nader Imani is head of global education, Festo Didactic, SE, Denkendorf, Germany. Imani has a Ph. D. in mechanical engineering from the University of Nantes, France, where he also spent three years as an assistant professor in mechanical engineering and organization and production management. He has 24 years of business experience in Germany, first in sales and later in regional management of international activities covering education and didactical concepts in industrial automation, production and manufacturing.

Discussion

Festo is a leading global supplier of automation technology and technical education. As an independent family-controlled company headquartered in Esslingen, Germany, it has become a leader in its industry over the last 50 years. The company's innovative problem-solving in all aspects of automation and its unique range of industrial training and education programs has led to its success. It currently has 17,000 employees serving some 300,000 customers worldwide.

Festo Didactic offers high-tech education and training for workers worldwide. Imani explained that Festo has two divisions, Festo Automation and Festo Didactic. The automation division provides services and products that help manufacturing firms increase productivity through a wide range of automation solutions. The other division, Festo Didactic, headed by Imani, offers training services and educational consultancy for manufacturing companies and also equips educational institutions for technical training. This division provides training through both open seminars for employees of many different businesses and custom in-house training courses and workshops. Festo's focus is on practical learning with real products and industry-oriented learning systems. A key focus is on the value of increased productivity.

Every year, Festo Didactic's 820 employees provide training in more than 30 languages to 42,000 participants in more than 2,900 seminars. Festo Didactic consults with governments, academic and technical training institutions and employers. The company will serve as consultant to any employer or other organization worldwide that is working on strengthening its skilled workforce. Its learning systems are primarily geared toward companies with about 1,000 employees or fewer. Larger employers have enough critical mass to prepare and run their own training programs, Imani said. These larger employers may also engage Festo to carry out the ongoing operations of an in-house education program.

Festo has a New York office where seminars are offered but the company is open to opportunities across North America. It recently purchased another education company that gives it a base in New Jersey and Quebec. The company's varied learning opportunities allow global access for businesses

operating widespread facilities. Festo provides an educational video channel called LearningTube that offers convenient access and "bite-sized" learning for all employees worldwide.

Responding to a question, Imani said that Festo frequently contracts with teachers in technical colleges to lead its seminars and other classes. Fees charged by Festo for its seminars will vary considerably by country. For example, the price in Brazil might be $80 to $100 a day, while up to $600 to $800 a day in Germany or the United States.

Manufacturing is important but facing a shortage of skilled workers. To illustrate the importance of manufacturing, Imani cited a November 2012 report by the McKinsey Global Institute . That report noted that manufacturing in 2010 accounted for 16 percent of global GDP, 70 percent of global trade and 45 million advanced economy jobs. A participant also noted that skill-based manufacturing devises the technology that drives innovations which in turn create more jobs.

"Manufacturing is increasingly high-tech, from the factory floor to the back offices where big data experts will be analyzing trillions of bytes of data from machinery, products in the field and consumers," the McKinsey report said. The global supply of high-skill workers trained initially and continually re-trained in advanced technology manufacturing equipment and process is not keeping up with demand. McKinsey projects a potential shortage of more than 40 million high-skill workers by 2020.

Manufacturing is also changing rapidly from mass production (producing same product for all) to mass customization (producing unique products for each customer), which requires considerable skills training, he said. Examples of mass customization include 3-D printing, robotics, computer aided machining, advanced material handling and sorting robotics.

Imani discussed what he called a "magic circle of education for employability". Strong economic development provides the need for a skilled workforce. To meet this challenge the education system must provide the right type of education, address the emerging technology and ensure quality and quantity of skilled, employable graduates. Those skilled employees then make possible continued economic growth, and the cycle repeats.

Manufacturing job demand is concentrated in a few occupations. I mani cited U.S. Bureau of Labor Statistics and Boston Consulting Group estimates that the biggest shortage in manufacturing jobs by 2020 will be for machinists, welders, industrial machinery mechanics, industrial engineers, and machine tool operators. He noted that these are not traditional manufacturing factory-floor workers. These modern manufacturing employees are using computers, robotics and other advanced equipment. Festo is "well positioned", he said, to address most of these training needs, working with its educational and industrial partners.

Businesses and educators partner to provide necessary skills training. The Festo Education Fund is a network of innovative, successful companies and committed university professors. Its goals are to

- allow students to concentrate on successfully completing their courses, shortening the time required for study or research,
- provide students with important vocational skills during their period of study

- improve the employability of participants, facilitating their integration into a company.

Courses are also offered, especially for engineers and technicians, but also for all technically oriented scientists, that go beyond pure technical content. Such courses include those needed for business administration studies or an MBA.

Partnerships with technical colleges provide a dual-track approach for employability and productivity training. Festo partners with technical colleges and other public educational institutions in what it calls "FACT" centers, Festo Authorized and Certified Training Centers, which emphasize "learning by doing". Festo develops training schedules which concurrently address both employability training for students and productivity training for employees from industry. Adding productivity training for industry employees allows a school to enrich a curriculum initially designed to address the employability of inexperienced students.

Regarding this distinction between training for employability and training for productivity, a participant commented that in the United State employability training has traditionally been considered more appropriate for public education systems and productivity training, for employers.

Festo works with competency and credentialing institutes that issue certificates to students completing specific requirements in education institutions. To provide a way for people to obtain credentials for particular skills in demand by industry, Festo will also help design curriculum, qualify lecturers, and supply equipment to education institutions and to original equipment manufacturers for in-house training.

Cultural attitudes seem to inhibit interest in vocational-technical education the United States. Responding to a question, Imani cited an unfortunate negative image about the relative importance of a two-year, job-oriented, technical degree versus a four-year, liberal arts degree. It's puzzling, he said, because better job opportunities are available in many cases for the technically-trained individuals. Early in high school, students need to know more about technical job opportunities and about opportunities to take more vocationally-oriented classes. More awareness of what local employers are seeking is important, he said.

In later discussion a participant noted that Minnesota is fortunate to have a large immigrant population interested mainly in taking advantage of economic opportunities and less likely to have any negative attitudes toward one type of education over another. This lack of cultural bias against the technical job educational track, may suggest that immigrants could play a significant role in helping maintain Minnesota reputation for a high quality labor force.

Do United States companies have a different attitude about return on investment? A questioner noted that when earnings are under pressure it seems that one of the first items removed from the budget of a United States-based employer is its investment in the training and education of its employees. Imani replied that he sees a difference between Germany and the United States in the importance of long-term investment in personnel. For example, in the world-wide recession of 2007-09, Festo hardly laid off any of its employees in its world-wide operations.

Does fear of losing employees prevent employers from investing in training? A participant noted that some US employers are reluctant to invest in employee training out of fear that the employees

will take jobs elsewhere soon after receiving the training. One possible response to that concern, a questioner suggested, might be that employers enter into a close relationship with a technical college, by offering scholarships and preferred hiring, to technical college graduates.

Another participant noted that higher skills in higher demand would be expected to result in higher wages. If employers train workers for jobs requiring higher skills it follows that they would also have to meet the market in wages for those jobs.

Another questioner wondered whether some method might be devised to make investments in employee training portable and not necessarily fully paid for by the initial employer Retirement benefits are increasingly portable as workers move from one employer to another. What if subsequent employers were partly responsible for training expenses paid by the earlier employer?

Employers, employee organizations, educators, and government must work together. A questioner noted that Festo offers its training and consulting services to employers, employee organizations, educational institutions, and government. Imani was asked which among those groups is most important in helping build stronger workforces. He replied that designing a good strategy for a trained work force requires the involvement of all parties.

Employee training has evolved as a viable business segment linking industry and education. A participant noted that Festo represents a model of how an established company can leverage its resources for training of its own employees to develop a business meeting the needs of others. Being part of an industrial group with ties to almost all industrial sectors, Imani pointed out, Festo is closely attuned to current labor market demand. Traditional education suppliers such as colleges and universities often are purely focusing on available curriculum with little interaction with industry, he said. As a result, college and university programs many times are not aligned to what the industry is looking for. Because of this, Imani contends, Festo becomes unique as an industry-based educator. Due to its firm industrial credentials, Festo is perceived as a reliable partner to bridge the educational sector with the industry sector, helping to close a gap that has contributed to the shortage of skilled manufacturing employees.