

Technology is a human resource issue

2008-03-05

Knowledge quotient

By Sepp Gmeiner

A production manager once told me it is faster to purchase and install a new CNC-router with a six-month delivery time than to find the right operator for such a machine. My experience shows he is not alone with this problem. Our industry is already very thin on knowledge-holders.

In her books *Shifting Gear* and *Accelerate*,

Nuala Beck sorts industries by the ratio between knowledge-holders and the total number of employees. Knowledge-holders, the way she classifies them, are broken down into three groups: people with professional designations, such as engineers, accountants, lawyers and doctors; senior management, or, "the people who run the show;" and technical, engineering and scientific staff, or "the folks wearing the pocket protectors."

In the manufacturing sector, she established the following scores:

aerospace and electronic equipment 60-65 percent; communication equipment 45 percent; aircraft 38 percent; automotive 20 percent; furniture industry 11 percent.

There was not much more listed under 10 percent in the manufacturing sector. The books and these data are now a decade old, but I believe the numbers have not changed much for the better.

Sometimes I count the ratio in companies I visit, and it is difficult to imagine they even reach the 11 percent of knowledge-holders. Considering how technology has changed over time (see graph), we must admit that we need more knowledge-holders.

The focus in technology over the last few years has been on integrated systems. This trend will probably continue in the next few years. In our industry, progress needs to be made in terms of how to get the information from the customer right down to the shop floor and directly to the machines. Machines and systems need to be integrated. There are very few companies that master this technology. Some companies are working on it; many are years away from it. Implementing new software and linking the front end with the shop floor and the machines requires skillful and experienced staff.

Coming back to the 11 percent knowledge-holders mentioned above, we are very thin in this area. Scoring higher, i.e., having more knowledge-holders would allow us to implement more new technology, implement new technology to a higher extent, implement sophisticated systems and increase the speed of implementation.

Our alternative is to stay with stand-alone solutions, not integrate, use only basic and proven technology, slow down the implementation speed, attempt implementation of complex systems with a lack of skilled employees and use only a small portion of the available features on high tech equipment.

Most of the above alternatives will lead to an increased technology gap, productivity gap and, as a result, also an increased cost gap.

I am not advocating that one always has to get the latest technology, but you need to be there as



close as practical.

Technology must not be too complex. The measure of whether something is too complex is how comfortable your core knowledge-holder group is with this technology. Not having the comfort level, or not having the group, respectively, requires you to scale down the complexity of what you can install.

This makes technology implementation a key human resources and management issue, because it demands finding the right people, communicating your strategy and reasoning to all stakeholders, creating a team culture and participation, minimizing the “wall” between office and plant (culture change) and holding the course when difficulties arise.

To begin this journey, you can start at different points, as long as there is an underlying overall strategy behind it: hire staff for manufacturing engineering, hire a forward-thinking human resources professional, implement Lean and process-flow improvements, get outside help for strategy and initiatives, attend seminars and trade shows, visit other plants and get all stakeholders involved.



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