Tools to move your company forward

Fortunately, many tools exist to allow us to implement ergonomics and maximize safety improvements, cost savings and employee retention goals. Knowledge can be gained from our peers, professional organizations, reliable sources on the Web (including government publications) and private consulting.

There are several tools that are freely available to help you with training and managing an age-diverse work force. Depending on your role and your background in ergonomics, the first step might be to get some refresher training on ergonomics and your industry. Two great sites to start with would be the Occupational Safety & Health Administration’s (OSHA) ergonomics page (www.osha.gov/SLTC/ergonomics) and the National Institute for Occupational Safety and Health (NIOSH) ergonomics page (www.cdc.gov/niOSH/topics/ergonomics). Both sites have information on ergonomics in general, the development of ergonomics programs, and the application of ergonomics for a specific group of industries. In addition, professional organizations, such as the Human Factors and Ergonomics Society and the Institute of Industrial Engineers, provide valuable data as well as networking opportunities. Especially useful to practitioners is IIE’s GOErgo community, which provides technical information and a way to keep in touch with practitioners across the organization (www.go-ergo.org).

Once you’ve got your feet wet, you’re ready to delve into the training world. There are many excellent sources for developing such programs, but this article concentrates on tools available to help you with your training involving an age-diverse work force. One thing to keep in mind is that effective training leads to actual changes. If you’ve felt that previous training experiences could have been better, take time now to process those evaluations and incorporate improvements into this opportunity. For instance, did you have the best champion? Was your team age-diverse (just like the employee base that you want to have)? Have you included different types of professionals in your leadership team?

Training opportunities might include all-inclusive, age-awareness training or specific modules on age-related changes. Be careful and do your task analyses homework first. Employees do not want to be lectured about topics that have no relevance for them. Tailor your training to your company, customize your training to your customers and link training to project changes and results.

Several excellent age awareness training programs are available online. NIOSH has published its Age Awareness Training for Miners at www.cdc.gov/niOSH/mining/products/product157.htm. Although this training program was created for the mining industry, it easily could be customized to your company. It provides information for the champions of the program as well as modules for employee training. The Health and Safety Executive in Britain also has an informative page on older workers at www.hse.gov.uk/diversity/age.htm. Training tools for specific types of normative aging changes are also available. One effective training tool is the hearing loss simulator that allows you to hear the difference between normative and noise-induced hearing loss for men or women. It can be found at www.cdc.gov/niosh/mining/products/product47.htm.

While part of managing the aging work force focuses on the individual level, the other aspect focuses on the more global picture. Even allowing for delayed retirements, eventually those prized employees will leave, and new hires or transfers will move in. Are you prepared? Have you coordinated the human resource plans with corporate plans for expansion? An excellent tool by AARP, called the Workforce Assessment Tool, allows you to do this. This free and confidential tool allows you to assess your work force needs and can be found at www.aarworkforceassessment.org/ae/index.cfm. You can use the tool to predict needs in various sectors of your company.

Finally, although the cost benefits may be clear to you, they may not be so obvious to your supervisor. Good quantitative tools to show cost savings for interventions have been developed. Check out the Puget Sound Chapter of the Human Factors and Ergonomics Society for a good list of cost benefit analysis tools (www.psfs.org/cba.htm).

With the right tools on hand, you can analyze your work force needs, assess workplaces for safety and productivity risks, develop programs for ongoing process improvement to maintain your age-diverse work force, and make necessary changes. You soon will be on your way to maintaining your human resources so that your employees, and your stockholders, will be happy.

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influence the locations and numbers of jobs. If your sector has jobs that are moving abroad or maybe you have downsized, then perhaps the crisis won’t be as severe. If, however, you are managing a group such as skilled trades or nursing that cannot be moved and has fewer younger people starting, you definitely may have projected shortages.

One question that often gets raised in this area is why there is so much emphasis on older worker retention in today’s economy. Here’s your reply: You want to keep those aging workers. They’re going to keep working, so if they’re not working for you, they’ll be working for your competitor. Additionally, the hidden cost of turnover is often very high. It easily can cost well more than half of a year’s salary to hire a new employee, and younger workers have been shown to have higher turnover rates. This could mean that you spend a lot of money to hire new workers only to have them leave within a few years, requiring you to repeat the entire process. Be cautious about over-generalized statements that warn about the costs of older workers because they do not take into account turnover costs.

Aging and ergonomics in different industries
The application of ergonomics to maintain a healthy and productive aging work force may be different across industries. An easy way to think about ergonomics is compatibility: We aim to optimize compatibility between the user and the product/system in order to improve safety, productivity and user satisfaction. In promoting an age-diverse work force through an ergonomics approach, sectors need to consider normative aging changes, relevance to work, the work environment and occupational health. The reality is, however, that elements emphasized between different sectors may be drastically different, and intangibles may contribute to unseen productivity losses. This is an area that is only beginning to receive enough attention.

As a start, let’s examine several scenarios. Scenario one is that you work in a service industry that relies heavily on customer service and involves mainly office-type work. Your program will involve office ergonomics, and you may find that you do not have the same sorts of physical demands characteristic of another sector such as construction, but you will have job demands characteristic of office work. Even so, your employees may be exposed to higher levels of psychosocial risk factors and may suffer burnout. An age awareness program may focus more on streamlining processes and mentoring younger employees.

In contrast, let’s say scenario two involves a company that does contract custodial work. Your employees will not be sitting in front of a computer, but they will be exposed to physical risk factors, and they may perform infrequent tasks that could present more safety challenges. Your approach will be much more focused on the physical aspect of the job and methods for tasks that are nonroutine.

Promoting a paradigm shift with products and processes
So you want to shift your paradigm, take your company to the next step in managing an age-diverse work force, and keep productivity up and cost down. What comes first, the product or the process? Arguably, the process, but in the case of applying ergonomics to an age-diverse work force, the product cannot be denied.

Process means considering the holistic way in which a company’s success is seen to be dependent on the contributions of many employees across all levels of the hierarchy of the company. People are valuable innately, but they are also valuable because they contribute directly to the success of the company. In this way, a process improvement initiative that would involve production would also include ergonomics. Ergonomics should be a central part of it and not an add-in, since people are central to the company and not just an afterthought.

Products, such as better interfaces or lifting devices, are necessary because processes alone cannot always provide the changes necessary to streamline tasks, improve safety and reduce costs. For instance, you may have a lifting task that you cannot engineer out, and the best solution might be a lifting device. Or, as a contrast, let’s take an infrequent administrative task. Perhaps the task has had a history of errors because of a few fields in a database. Task analyses suggest that mistakes are occurring from memory lapses in the user because the field requires employee recall instead of relying on recognition. User fault? Yes and no. Design issue? Yes. Is this a product issue? Yes, because the interface could be designed better. Is it an ergonomics issue? Absolutely, because it involves cognitive ergonomics (information processing). Cost issue? Yes. It will involve cost because the program will need to be changed, but will it save you money? How much does it cost your company every time a mistake is made? How many of these types of mistakes are made throughout your company?

Perhaps a single example might not indicate huge costs, but taken as an aggregate the costs could add up. Anticipate productivity and safety challenges (keeping in mind that any changes made for an older worker also will benefit a younger worker), cost-justify the interventions, make the changes and monitor your savings. Products that promote and improve the process will not cost you. Instead, they’ll save you money.
A proper ergonomics solution can benefit workers of all ages. And sometimes, all a situation needs is a little boost.

The Support Equipment Engineering Department at Fleet Readiness Center-East in Cherry Point, N.C., was given the task of redesigning and manufacturing a work stand for assembling and disassembling nose landing gear for the AV-8 Harrier jet. The project aimed to prevent non-neutral positions and reduce work-related musculoskeletal disorders according to the U.S. Department of Defense.

The shop's work stands were set too low for tall artisans. The ergonomicist for Fleet Readiness Center-East identified the need for a taller stand while reducing injury for workers at Marine Corps Air Station Cherry Point. After investigating the problem and receiving input from local artisans, an improved stand was designed. It had an integrated hydraulic ram to lift the stand and its work piece. The redesign improved the workers' body posture to help meet the job demands while causing minimum stress on the muscles, ligaments, bones and joints.

Using the new lift, the stands allow for a neutral posture and reduce pressure on the points labeled by yellow X.

Workers at Fleet Readiness Center-East in Cherry Point, N.C., examine the new work stand.

This data comes from the U.S. Bureau of Labor Statistics. Although participation rates of older workers are increasing globally, there may be job shortages in specific areas, such as skilled trades. First, will people retire at age 65? Data indicate a no. AARP in 2009 of adults age 45 years and older found that 64 percent of those surveyed who ranged in age from 55 to 64 were postponing retirement. Second, global trends can vary. Several things play into whether these numerical summaries apply to you.
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Unless you’ve been living in a bubble, you’ve no doubt heard about the coming crisis with older workers in the work force. Yes, some consider the baby boomers a sort of tsunami that is going to reach shore in 2011 when the oldest of the boomers start to turn 65 years old. Others recently have toned down the rhetoric as the economic situation has created gaps in people’s readiness for retirement. In any case, it’s on people’s minds. A recent search on Google for “older workers” listed more than a million entries. Entire conferences have been held on the subject, and each year conferences from a variety of disciplines hold sessions devoted to the topic.

Many excellent articles have been written during the last 10 years on normative aging and how those changes affect a person’s ability to perform work. Information on vision, hearing, strength and endurance, balance and cognitive processing changes, among others, combined with ways to mediate them have been put forth in the academic and professional literature. These articles have been published for a general audience as well as specific industries. Few, however, have really pushed the paradigm shifts that are necessary in order to gain the most from our experienced, as well as our less experienced, work force. As opposed to 10 years ago, older workers are not the minority, and they should not be treated as such. Instead, companies should embrace the gains that can be made for everyone when the needs of the older work force are met.

So what does this mean for you (perhaps personally), your company and your role at work? Industrial engineers find themselves in a variety of roles. You may be in charge of process improvement, safety, ergonomics, inventory, databases or quality control. Most industrial engineers want to know how they can keep their entire work force productive and safe while capitalizing on everyone’s expertise and keeping costs in control. They want to retain their best employees and attract new talent. This article suggests ways in which you can introduce methods to reach your productivity, safety and work force development goals. It will outline what aging and ergonomics mean in different industries, how you can adopt “product and process” improvements, and tools that are available to help you accomplish your goals.

The skinny on older worker demographics
What does the term “baby boomers” mean to you: (A) A commercial on TV, (B) several well-known politicians, (C) the generation that pushed all limits or (D) a large cohort of people moving through the work force?

Here’s what we know. The “baby boomers” are a cohort of about 76 million individuals who were born between the years 1946 and 1964 (This means that the boomers turn 65 between 2011 and 2029). Boomers are sandwiched between the veterans and Generation X and Y. More applicable to work, the baby boomers are quite diverse, and demographers have noted that there is much cultural difference between older, middle and younger members of the group.

The aging of the baby boomer generation is the reason behind the increase in older workers. Older workers can be defined in different ways. The Age Discrimination in Employment Act defines an older worker as one who is 40 years or older. Many research studies use the age of 50 as a target. The Bureau of Labor Statistics uses 55-plus. Still others define an older worker as one who might retire but has continued to work, such as people in their 60s.

In addition, differences in terminology exist. People tend to use either “older worker” or “aging worker,” with the latter being preferred by many because it includes the notion that regardless of age, all workers are aging. Thus “aging worker” is seen as more inclusive.

An aging worker is also different between industries. For example, professional hockey players may never play beyond their 40s, while college professors or surgeons might be at their prime in their 50s or 60s. A job’s demands affect how one ages across the lifespan, so that people of similar ages might have drastically different health characteristics (for example, compare an underground coal miner with an insurance professional). Interestingly, conclusive data is not yet in on how newer norms of frequently changing jobs compared with older norms of staying with the same company affect a person’s health across the working lifespan.

During the next several decades, increases in the percentage of older workers in the work force will result from two phenomena: more individuals within the baby boomer generation and greater participation rates for older generations. For instance, the U.S. civilian noninstitutional population age 55 and older is projected to increase to 35.4 percent in 2018 from 30.2 percent in 2008. Not only is the size of the age group increasing, but labor participation rates are increasing as well as the percentage of older people in the work force. The percentage of the civilian labor force age 55-plus is projected to increase by 43 percent from 2008 to 2018, and this group will comprise nearly one-fourth of the work force. During this same time period, labor force participation rates for the 55 and older group will increase 4.1 percent to 43.5 percent.

Projections also indicate that nearly 12 million of the 12.6 million additional workers projected to be in the labor force over a 10-year period (2008-2018) will be in the 55-and-older age group. As a contrast, the percentage of youths age 16 to 24 in the overall labor force is estimated to be 12.7 percent in
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By Dia V. A. Schwerm

Workforce demographic changes mean organizations must pay more attention to older employees.