

POLICY *of the* AGES

*Labor shortage
requires a business ergonomics paradigm*

BY CYNTHIA L. ROTH

IN THE COMING YEARS, DUE TO THE FINANCIAL CRISIS worldwide, as well as the aging of the U.S. work force, industries will suffer from labor shortages. In a 2004 edition of the *Graziadio Business Report*, Donald Atwater and Aisha Jones explained: "A systemic labor shortage occurs when the overall number of new job openings exceeds the number of qualified new entrants in a national economy for a sustained period of years."

In the year 2011, the oldest of the 76 million baby boomer





policy of the ages



generation are set to reach the age of 65 — the traditional retirement age.

According to the Employment Policy Foundation (EPF), a systemic labor shortage is expected to transform the workplace over the next 25 to 30 years as the gap between baby boomers and entrants of college-educated workers widens due to the boomers' mass retirements. This is particularly true in work environments such as nursing, teaching and information technology. For nursing, both acute and long-term, this is a result of substantial increases in demand for nurses due to the aging of the population, the requirement for higher nurse-patient ratios and increased time required to obtain nursing degrees.

Other professions impacted by a labor shortage will be secretarial; heavy truck driving; elementary and secondary school teaching; janitorial; energy use; bookkeeping, accounting and auditing; college and university staff; and engineering and farming.

The Bureau of Labor Statistics (BLS) has reported that the percentage of older workers in the work force is increasing at the same time younger worker percentages are decreas-

ing. BLS states that "as the age of the labor force increases, a greater number of people will leave the labor force due to death, disability, or retirement." And it is this "greater number of people leaving the labor force" that has caused pandemonium and panic in the street. As another example, the average age for an aerospace engineer is 59 years old and their replacement is not even in an engineering program yet.

So what does this mean from an ergonomics and human factors viewpoint? Frankly, fewer employees doing more work and fewer employees who are skilled or adequately trained in the particular workplace environment can be the serious end result. There are physiological changes that occur with aging that can make performing job tasks more stressful and demanding. After the age of 40, changes in joint range of motion, vision, hearing, strength and fine motor dexterity, along with postural unsteadiness, become more likely. Because of these changes, the aging employees may not be able to perform tasks that were designed without applied ergonomics and human factors. As aging employees retire, their positions might not be filled, forcing less people to do more work.

Based on the economy, companies may have layoffs, close facilities and lose the skilled work force. Shortages in the Federal Aviation Administration are dangerous, and new people without proper training or who become injured because of the workplace are prone to errors that can cause safety issues in the workplace as well as danger to passengers.

Fortunately for many corporations, a majority of the aging are delaying retirement for personal, financial, medical and social reasons. According to the AARP, 69 percent of baby boomers plan to continue working past the age of 65. The allure of an older work force is great: employers get experience, stability, dedication and employees with a desire to work.

"If you think of the costs of employment, turnover is a big cost. And we find that although our normal turnover for all our employees is 9 percent, ...for our senior employees, age 50 and over, it's only 6 percent," Carl Gustafson, head of human resources at Baptist Health South Florida, told MSNBC.

If retaining older employees is the case, it is imperative that jobs, tasks, tools, the physical workplace layout and equipment be designed with ergonomics in mind. Whether it is an office environment, health care, truck cab or foundry, in order to keep the employees working efficiently and productively, the ergonomic risk factors have to be designed out of the tasks and accessories employees need for their job requirements.

In our current financial crisis and always, customer and cost problems usually cross both functional and organizational boundaries. Today, we are even more challenged, and employers must identify and solve such problems faster and more effectively. A good quality management plan describes how a company must achieve full customer satisfaction while producing at the most economical cost with fewer employees who are also aging. The employees have to be integrated into the system for it to be effective.

For example, Ergonomic Technologies Corp. took on the challenge of assisting the United States Postal Service (USPS) nationwide in its ergonomics efforts. ETC developed a process with the USPS titled Ergonomic Risk Reduction Process (ERRP) and has trained 300,000 employees in recognition of ergonomic risk factors through ergonomics teams. The Occupational Safety and Health Administration, the American Postal Workers Union, the National Postal Mail Handlers Union and the U.S. Postal Service entered into an ergonomics strategic partnership in 2003.

The goal of the partnership was the reduction of musculoskeletal disorders (MSD) through an ERRP. ERRP creates self-sustaining teams and imparts ergonomic identification and resolution skills to the employees of USPS. The ERRP site core team combines the talents of management, labor unions

WHO ARE THE BABY BOOMERS?



In his book, *The Age Curve*, Kenneth Gronbach discusses shifting demographics in markets and products and how manufacturers, young entrepreneurs and advertising agencies should pay close attention to "boomer consumers." Gronbach characterizes the generation as:

- Born 1945 to 1964 and 78 million strong
- Including those that helped accomplish great social change through the civil rights movement, the women's fight for equality and anti-war protests
- Including those who are masters of conspicuous consumption with their Rolexes, SUVs and starter castles
- Currently retiring at the rate of one every eight seconds
- Currently cresting at 50 years old
- The most powerful defined market in the world
- Most likely to buy natural remedies for what ails them, travel packages and home entertainment centers

"Entrepreneurship starts with recognizing opportunities and developing products and services that capitalize on a specific market," wrote Benjamin Lichtenstein, professor of entrepreneurship and management at the University of Massachusetts, in the book's foreword. "What the volumes of research on opportunity recognition and market definition leave out is [the author's] basic insight: Neither an amazing product, nor a perfect business plan, nor an unlimited marketing budget will compensate for the fundamental ebbs and flows of population. Markets are always growing or decreasing, not because of changes in preference, but because the literal number of people within any given cohort is vastly different than even five years before."

..... CHANGING WITH THE AGES



According to Working Well, an ergonomics information portal, common changes occur with age, but there are ergonomics solutions. The company makes the following recommendations:

- For visual (decreased ability to read, altered depth perception): Use brighter lighting, special-purpose lighting and high-contrast materials.
- For hearing (decreased high-frequency hearing, decreased ability to hear specific sounds): Reduce background noise and use equipment with adjustable noise levels.
- For skin (decreased skin elasticity, more difficulty in regulating body temperature): Stay hydrated and avoid work in extremely hot or cold temperatures.
- For muscles (decreased muscle mass, increased muscle response time and fatigue): Increase use of mechanical lifts and eliminate twisting.
- For endocrine (decreased thyroid function, decreased tolerance to hot or cold): Take breaks each hour to stand up and stretch upper body.
- For immune (decreased inflammatory response, increased risk of infections): Avoid repetitive-motion work and take precautions to avoid infection.

and individual craft employees to ensure that all employees have a safe and productive workplace.

The teams conduct ergonomic assessments and develop “quick fixes” for the identified risk factors. The process has published results on the OSHA Web site.

By bringing management, unions and employees together to identify potential hazards and ergonomic health risks cooperatively, USPS, through this partnership, is transforming its workplace safety and health ergonomics program into a model for the public and private sector.

ERRP sites in the process for three years have experienced the most dramatic results: a 38 percent reduction in the MSD recordable rate and a 40 percent reduction in handling and lifting rate. ERRP sites are experiencing greater success than non-ERRP sites:

- MSD rates are 35 percent less in ERRP sites.
- Handling and lifting rates are 18 percent less in ERRP sites.
- There was a \$1.8 million savings in workers’ compensation medical costs (a 39 percent reduction).
- More than 77,000 employees have been trained.
- Nearly 7,000 ergonomic task analyses have been conducted and 3,600 fixes have been implemented.

This process has been responsible for saving millions of dollars for the USPS through the reduction in workers’ compensation claims, lost work time claims, increased productivity gains and reduced labor issues, and is one of the most successful processes ever introduced by the USPS. The ERRP process had another benefit for the USPS by creating leaders in the ergonomics team — members who went on to perform in other capacities. Their leadership training skills for the most part were forged by the involvement in the ERRP process.

Managers and supervisors must offer employees an interdisciplinary blend of interpersonal communication skills, procedural strategies and theories of best performance practices. Employees should participate and talk through the workplace change and strategies in meetings and implement what they have learned at a particular process. The affected employees will change through training. They also learn about the practical dilemmas that organizations face as they address such issues as changing employee values, reasonable accommodations for specific limitations of employees, leadership development, and competition for qualified employees. Since these are issues every company faces, the integrated ergonomics process can work for any company and employee base no matter how large or small.

Appropriate and adequate management and employee training are necessary to identify and reduce the ergonomic risk factors so employees can work at the productivity levels and the efficiency to keep companies profitable. Reduction in workers' compensation claims and lost work time is essential as part of the overall process. Engineers have to be more responsible to get the knowledge they need to design for employees who are aging as well as reduce the numbers of employees.

What are the major factors that will shape the future of work in the current century and how are those factors likely to evolve over the next 10 to 15 years?

What are the implications of these future trends for key aspects of the future work force and workplace, including the size, composition and skills of the work force; the nature of work and workplace arrangements; and worker compensation?

Ergonomics and safety must be considered at every step in the value chain, and designing ergonomics into a process is cheaper than retrofitting later while experiencing workers' compensation claims. Leadership and employee empowerment are keys to creating a proactive ergonomics culture. To be able to improve ergonomics, it is important to measure leading indicators in addition to traditional lagging indicators.

Businesses spend \$170 billion a year on costs associated with occupational injuries and illnesses — expenditures that come straight out of company profits. However, workplaces that establish ergonomics, safety and health management systems can reduce their injury and illness costs by 20 percent to 40 percent.

In today's business environment, these costs can be the difference between operating in the black and running a company in the red. Injuries and illnesses increase workers' compensation and retraining costs and absenteeism, and they decrease the quality of products and processes. They also decrease productivity, morale and profits. Businesses operate more efficiently when they implement effective safety and health management systems. For example, a plant with 50 employees decreased production of faulty product and saved more than \$265,000 with a strong ergonomics, safety and health program. Approximately 95 percent of business executives in one survey reported that investment in workplace safety has a positive impact on a company's financial performance. Of these executives, 61 percent believe that their companies receive a return on investment of \$3 or more for every \$1 they invest in workplace safety. There is a direct positive correlation between investment in safety, health and environmental performance and its subsequent return

on investment. Workplace injuries cost society \$128 billion in losses in 2002, which equals 25 percent of each dollar of pre-tax corporate profits.

Indirect costs of injuries may be 20 times the direct costs. Indirect costs include training and compensating replacement workers; repairing damaged property; accident investigation and implementation of corrective action; scheduling delays and lost productivity; administrative expense; low employee morale and increased absenteeism; and poor customer and community relations.

To cover the cost of a \$500 accident, an employer would have to bottle and sell 61,000 cans of soda, bake and sell 235,000 donuts or deliver 20 truckloads of concrete.

Ergonomics has a clear potential to contribute to business and engineering strategies and goals. In order to use this potential, considerable changes must take place within the engineering community by moving from a purely engineering paradigm to a business ergonomics paradigm.

We want to keep our employees working smart and keep them working injury- and error-free. ❖

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Web exclusive

THAILAND'S AGING WORK FORCE CONSIDERATIONS

A report by the International Labour Organization has proposed special recruitment incentives for older persons in Thailand to enter the work force. Some of the steps may help to reduce taxes and eradicate poverty.

www.iienet.org/magazine/nov09/aging