

# Where are the engineers?

Current technical shortage has long-term implications

**W**hat happens when baby boomers begin to retire? In some cases, there are plenty of Gen Xers to take over. But in specialized fields like engineering, the domestic labor market could see an immediate and potentially long-term shortage.

“As seasoned baby boomers in engineering and other professional occupations begin to retire, this brain drain will generate a big void of labor to meet the challenging projects of today and tomorrow,” says Ronald Stein, vice president of business development for Principal Technical Services. “There is a growing demand for a variety of professional workers, a shrinking supply of seasoned veterans, and a limited supply of new entrants.”

*Smart Business* spoke with Stein about how this shortage of talent in specialized fields came about and the opportunities that exist for new talent, both now and in the next decade.

## Why is there a shortage of engineers and other professionals?

You have to understand some of the history of labor in the United States over the past 40 or 50 years. Back in the '60s and '70s, the country was building up its infrastructure to accommodate the baby boomers' population growth. Urban development required new transportation systems, power plants, water treatment facilities, refineries, commercial buildings, airports and the like. In response, universities began to turn out engineering graduates. At that time, there were major career opportunities for technical people in many fields of engineering.

But in the early '80s, investment in new infrastructure slowed. There were layoffs, and the same industries that had played a crucial role in growing our industrial economy became plagued by sluggish growth. The outlook for career opportunities and advancement for engineers and other professionals was not attractive. Most schools



**Ronald Stein**  
Vice president of business development  
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began funneling technically minded students into information technology. Consequently, the number of college students graduating with bachelor's degrees in all fields of engineering has been falling steadily since peaking in 1986.

## Are there career opportunities for people to enter into engineering?

Definitely yes. The population of the United States was 235 million in the mid-'80s, is 298 million today, and is projected to grow to 363 million by 2030. California alone has 35 million residents and is projected to grow to 48 million by 2030. So there is fast coming a time when many elements of our infrastructure — now 30 to 40 years old — will have to be retrofitted and updated. In addition, many new infrastructure projects will be needed to meet the demands of all this population growth. The truth is that there may not be enough technical expertise available to design and build these complex projects.

Also, over the next few years baby boomers are beginning to retire, taking with them decades of experience, while too few young, well-educated people will

be available to fill an increasing demand of high-skilled jobs.

## Besides engineers, what specific professional job titles are most in need today, and what job titles will be most in need in the near future?

In addition to many fields of engineering, such as civil, electrical, mechanical, process and structural, other professionals needed would be schedulers, planners and cost-control personnel who are familiar with Primavera and/or Microsoft Project software. Also control systems; electrical, mechanical, and piping designers — most of whom are not degreed — familiar with AutoCAD and/or Microstation software are needed to prepare construction drawings.

## How will these projected shortages affect corporations and their management teams?

Recruiting and retaining qualified workers needs to remain a top priority for companies, and those that are not planning ahead may be left behind in the ongoing war for talent. In the short term, companies may need to be prepared to pay more to attract and retain quality employees. Companies should utilize flexible schedules, job sharing and telecommuting to entice their seasoned employees to work a few more years before retiring.

In the long-term, it is going to take the collective actions of business leaders, policymakers, educators and anyone with a stake in our economic future to ensure an abundant and well-educated workforce. Also, such factors as Wall Street's obsession with short-term results (that favor cost-cutting over long-term training) and the neglect of math and science skills at school are contributing to a fundamental mismatch between labor supply and demand.

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