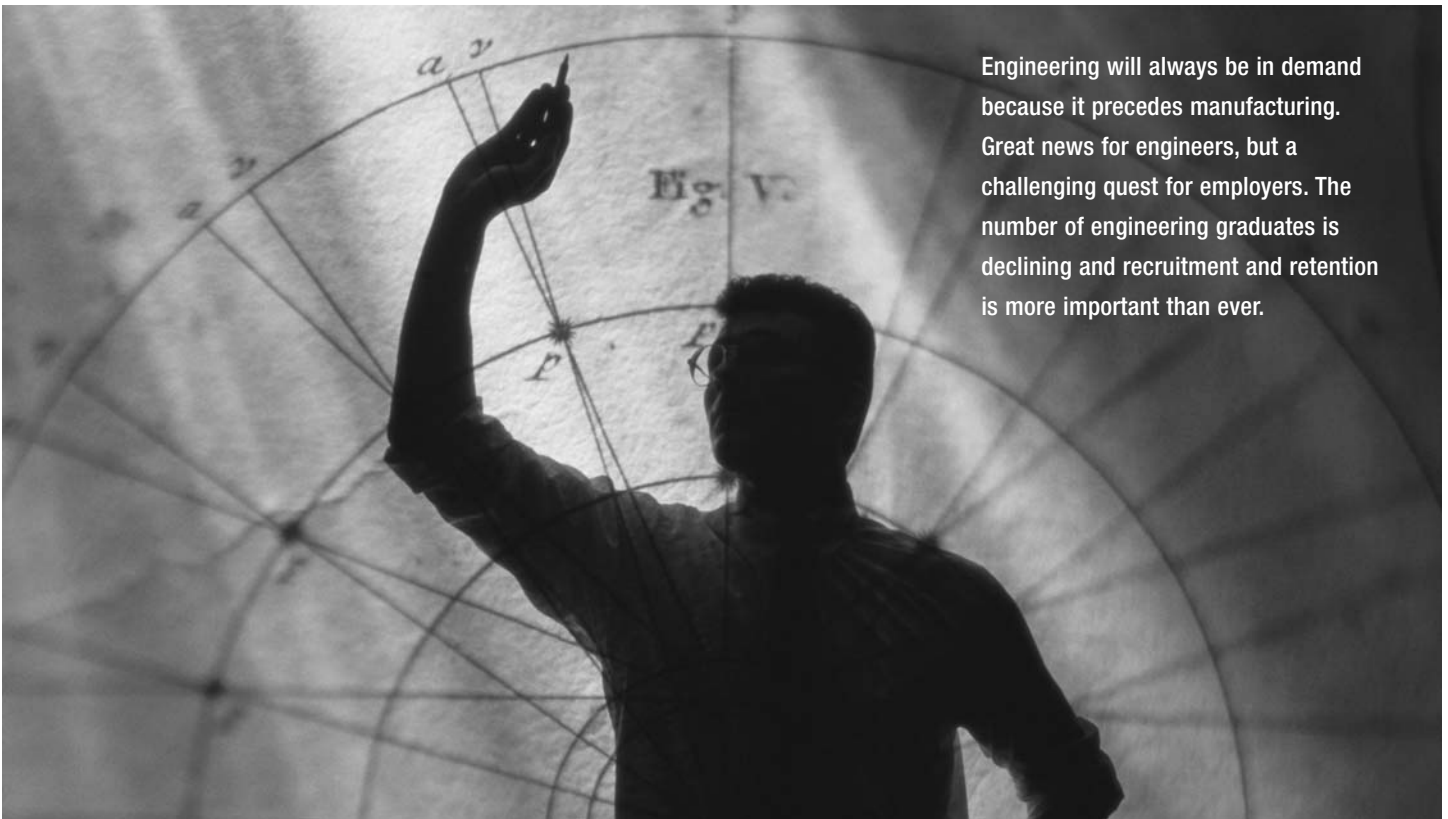


issues&trends

A KELLY ENGINEERING RESOURCES® REPORT



Engineering will always be in demand because it precedes manufacturing. Great news for engineers, but a challenging quest for employers. The number of engineering graduates is declining and recruitment and retention is more important than ever.

Part I

THE ENGINEERING LABOR SHORTAGE: FACING THE CHALLENGE

A strong economy, manufacturing expansion, and a shrinking labor pool have caused many industry analysts to forecast an impending engineering shortage. Despite some skeptics' opinions that this will not occur, statistics speak otherwise. Overall employment in all sectors is expected to increase by 13 percent (18.9 million jobs) over the next decade—but *engineering* jobs are projected to increase more than three times that fast—at a rate of 44 percent.

Today the United States employs 1.45 million engineers. In 2005, U.S. universities graduated 76,000 engineering students. In the simplest analysis, if no engineers retired, the number of graduates stayed constant over the next 10 years, and all of them were hired into engineering jobs, engineering firms would

still face a significant labor shortage. So what can you do to meet that challenge?

The short answer is to expect a shortage and prepare for it. Preparation, timing, and fine-tuning your human resources strategies can help you locate and maintain the best-qualified engineers without compromising staffing levels or productivity.

Preparation: Understand the Market

Today's engineering market is very different from the one of just 10 years ago, and current market trends allude to more changes to come.

A robust economy coupled with low unemployment rates creates an atmosphere of wage inflation, where wages rise to attract new workers.



Increasing Demand

Engineering will always be in demand because it precedes manufacturing. Manufacturing production has grown 9.2% from November 2004 to December 2006. The double-edged sword to this upswing is that a robust economy, coupled with low unemployment rates, creates an atmosphere of “wage inflation,” where wages rise to attract new workers. Since engineers already command some of the highest starting wages of all professions, wage inflation results in even higher salaries. Hiring bonuses push the price tag still higher.

Although engineering comprises only one percent of all jobs in the United States, in certain demographics, engineering positions can represent up to 1.54 percent of all jobs in that area. Technology-heavy and manufacturing-intensive areas, including the Pacific Southwest, South Central states (Gulf Coast, LA, AR), and New England have the highest demand for engineers in all specialties. These areas are already feeling the effects of more demand than supply and are chronically short of engineers.

Decreasing Number of Graduates

Despite the rapidly rising need for engineers, the number of engineering graduates in 2005 was 11 percent less than in 1985. On top of that, today’s engineers don’t always stay in their original career of choice. Approximately 17 percent of all engineers get advanced or secondary degrees in fields other than engineering, making them highly marketable in business and other sectors. The latest yearly review of Standard & Poor 500 companies shows that more CEOs hold bachelor’s degrees in engineering or business administration than any other field. About 25 percent of all engineers who remain in engineering move into management positions. Fewer graduates, greater career mobility, and management opportunities leave approximately 60 percent of the shrinking engineering talent pool to shoulder the daily tasks of product design, development, application, and testing.

Skills Gaps Contribute to the Problem

Engineering is also suffering from a skills gap. Three elements contribute to this gap. First, the aging baby boomer generation, with its collective experience and “brain trust,” is nearing retirement. Second, engineering positions often require specialized experience that is difficult to replace when openings occur. (Rapidly changing technology contributes to that problem.) Third, although newly-minted engineering graduates frequently train in co-op positions throughout their college education, this hands-on experience is not considered sufficient when companies seek seasoned workers for particular niches.

Timing: Prepare for Future Market Conditions

When you understand market trends, then you can anticipate the best ways to take advantage of this mobile, in-demand labor market.

Companies must begin to confront the challenges of a labor shortage head-on by assessing their current engineering resources. Baby boomers—the generation of people born between 1946 and 1964—are preparing for retirement. The National Science Foundation’s 2006 *Science and Engineering Indicators* show that by age 61, about half the engineers holding bachelor’s degrees will no longer work full time. Those holding master’s or doctorate degrees will work only one to three years longer. This means that some engineering boomers will begin to consider retirement as early as 2007, with a steady stream following suit over the next two decades. What percentage of your staff falls into that category?

Many boomers will phase into retirement or will return to work in other capacities, such as contract workers or consultants. The Bureau of Labor Statistics notes that people over age 55 will comprise 21.2 percent of the entire labor workforce in the next decade. Employees who partially retire or return as “free agents” will comprise a larger part of tomorrow’s labor pool. Consider tweaking your staffing mix to benefit from utilizing such workers.

Recruitment: A Corporation’s Constant Companion

The concept of “recruitment” can no longer be perceived as a discrete activity relegated to specific times of need. Approach recruitment as a continual process. Know where to look for the best talent and know how to “court” talent so that engineers want to work for your company. A staffing supplier can provide the extra resources to do that for you.

Time is of the essence when hiring. This may seem implausible because many companies say it takes twice as long to fill engineering positions as it did several years ago. Hiring managers usually want to wait for the candidate who has the exact combination of attributes they seek. But, in today’s fluid labor pool, positions need to be filled before qualified candidates have a chance to move on to another opportunity. In most engineering specialties, 97.5 to 99.8 percent of all engineers are already gainfully employed.

Tap Non-traditional Labor Pools

With all engineering companies vying for a decreased labor pool of experienced workers as well as newly-minted graduates, companies need to court talent beyond the “traditional” engineering labor pool.

Non-traditional recruiting can help ease your workload during peak times such as hiring free agents, contract or part-time employees, co-op students, or retirees for special projects.



Look to the following candidate sources to help expand your potential labor pool:

- Retirees. Many retired engineers do consulting work or contract with firms that provide staffing solutions.
- Minorities, including women, African-Americans, and Latinos.
- “Boomerang” employees (people who previously worked for your company).
- Associate degree engineering and technology graduates. Almost one-third of all employers planned to hire associate degree graduates in 2006. Two of the top three highest-demand associate degrees are technology- and engineering-related degrees.
- International talent. International students who are hired most frequently include those with electrical engineering, computer science, and chemical engineering degrees.
- Staffing firms that offer contract employees.

New Hiring Paradigms

Where recruiting requires vigilance, hiring requires agility. From writing job descriptions to extending job offers, the process needs to become more nimble:

- Scrutinize and overhaul the recruiting process to optimize the time spent on hiring activities.
- Evaluate and reword job postings, if needed, to ensure that only qualified candidates respond.
- Rethink what constitutes “qualified.” Although very specific technical skills may be needed for a position, consider expanding the scope of required experience so you can consider those with *aptitude*, as well as those with skills.
- Establish hiring priorities.
- Allocate blocks of interview time prior to responding to candidates.
- Consider pre-scheduling interviews, especially if the position is a high priority to fill.
- Establish goals to shorten the time between interviews and job offers. This includes streamlining the approval process.

Savvy Recruitment Makes Dollars and Sense

Employee recruitment is part of fiscal stewardship. The U.S. Department of Labor estimates that the base cost of replacing one employee costs 30 percent of that person’s salary. The ante is much higher for engineering positions. Knowing what attracts and keeps employees in their jobs is key to containing recruitment and retention costs.

But selecting the *right* hire is as important as filling someone’s seat. Recruiting, hiring, and bringing highly specialized professionals up to speed can cost the equivalent of 6 to 18 months of a person’s salary. Although it is highly desirable to find that perfect match for a highly specialized open position, doing so may be counterproductive in terms of both time and cost. The United States is heading into a period of much lower unemployment and much more drastic skills shortage. Strategic shifts in your recruitment paradigm—while staying true to corporate standards—will help ensure that you attract the right person who can fill your needs today and several years from now.

Advantages of Adding an Engineering Staffing Supplier to the Mix

In today’s increasingly complex and rapidly changing engineering market, engineering suppliers can help companies establish priorities and optimize efforts. As a recruitment and retention partner, they can serve many purposes: acting as a subject expert on market trends and best hiring practices, providing an impartial voice at the table in strategic planning, tapping into candidate sourcing networks that companies may not otherwise have access to, and supplying extra resources for screening activities to allow companies to spend time reviewing only the best qualified applicants. Working with an engineering staffing supplier can free up your HR staff to focus on strategy and planning.

An engineering staffing supplier tracks trends and constantly conducts real-time research from a broad base of clients to know why engineers change employment and what draws them to certain companies. Armed with this knowledge, an engineering staffing supplier is uniquely positioned to find the best workforce solutions for your company.

Conclusion

Two-thirds of all employers say they will hire more college graduates this year than they did last year. And the profession that tops the “most wanted” lists for every education level is engineering. Therefore, companies need to act now to meet the challenges posed by this increased competition for top-quality engineers.

Navigating the waters of the changing engineering labor market requires business acumen beyond matching a resumé with a job description. Finding the right person, at the right time, for the right job requires knowledge of the labor market, its trends, and what makes corporations desirable employers. Astute engineering staffing specialists consider all of these elements, analyze how to make them work for your company, and deploy them to your greatest advantage.

About Kelly Engineering Resources

Kelly Engineering Resources is a highly specialized and rapidly expanding business unit of global staffing provider, Kelly Services, Inc. Launched in 1998, Kelly Engineering currently employs more than 4,000 professionals on an average workday and maintains more than 40 company-owned and -operated offices throughout North America, Europe, and the Pacific Rim. Visit kellyengineering.com.

Kelly Services, Inc. (NASDAQ: KELYA, KELYB) is a Fortune 500® company headquartered in Troy, Mich., offering staffing solutions that include temporary staffing services, outsourcing, vendor on-site and full-time placement. Kelly® operates in 30 countries and territories. Kelly provides employment to more than 700,000 employees annually, with skills including office services, accounting, engineering, information technology, law, science, marketing, light industrial, education, health care and home care. Revenue in 2006 was \$5.6 billion.

For customer inquiries, contact Teresa Carroll, vice president and general manager, Kelly Engineering Resources at **248.244.5358** or e-mail carrote@kellyservices.com.

For media inquiries, or to receive this article electronically, please contact the Public Relations department at **248.244.4305** or e-mail publicrelations@kellyservices.com.

RESOURCES

- "Engineers." *Occupational Outlook Handbook*. 2006 – 2007. U.S. Bureau of Labor Statistics.
- The Aspen Institute - Domestic Strategy Group. *Grow Faster Together. Or Grow Slowly Apart*. How Will America Work in the 21st Century? 2003.
- Paul, Lauren G. "Too few techies?" *Electronic Business*. February 1, 2006. Business Trends; Labor; p. 18.
- *Manufacturing ISM Report On Business*® July 3, 2006. Institute for Supply Management.
- "Trends and Issues: A source of insight for human resource and staffing professionals." *The Kelly Intelligence Report*. August 2006. Kelly Services.
- *Science and Engineering Indicators* 2006. (February 2006). National Science Foundation, Division of Science Resources Statistics. Chapter 8: State Indicators; Topic: Workforce.
- Shaughnessy, Andy. "The 2005 designer and design engineer salary survey." *Printed Circuit Design & Manufacture*. November 1, 2005. No. 11, Vol. 22; p. 18.
- Regets, Mark. "What do people do after earning a science and engineering bachelor's degree?" *InfoBrief*. July 2006. National Science Foundation.
- Winters, Rosemary. "Engineer shortage more perception than reality?" *The Salt Lake Tribune*. December 5, 2005. Business; p. B8.
- Guyer, Lillie. "Cutbacks aside, industry still needs engineers." *Automotive News*. March 27, 2006. News, p. 24J. NACE.
- "Where have all the engineers gone?" 2006. Kelly Services.
- Hutchison, Liese. "The bottom line: losing employees adds up to big bucks." *Stlcommercemagazine*.
- Drizin, Marc. "Employees: recruitment, retention, and loyalty." *Crmguru.com*. February 28, 2002.
- Ober, Stacy. "Engineer Salaries Remain High Despite Concern Over Shortages." November 3, 2005. *National Society of Professional Engineers*.
- Reitz, Victoria. "Is engineering worth it?" *Medical Design*. October 1, 2005. Vol. 5, No. 7; p. 46(2).
- Shaughnessy, Andy. "The 2005 designer and design engineer salary survey." *Printed Circuit Design and Manufacture*. November 2005. No. 11, Vol. 22; p. 18.
- Marasco, Corinne. "Work-Life policies are no longer perks, but strategic retention tools." *Chemical and Engineering News*. September/October 2005.
- Bokorney, Judy. "Engineers optimistic about industry comeback." *Evaluation Engineering*. April 2006.
- Storke, Diana, and Wilson, Fiona. *The New Workforce Reality: Insights for Today, Implications for Tomorrow*. Bright Horizons Family Solutions and Simmons School of Management. January 2005.
- Doak, Richard. "Still? Made in America." Part 5 of 6. *Des Moines Register*. September 29, 2005. Main News; p. 14A.
- "Employers predict a 14.5 percent increase in new college grad hiring for 2006." JobWeb.com. <http://www.jobweb.com/joboutlook/2006/2.htm>.
- National Association of Manufacturers. January 17, 2007.