



The Engineering Labor Shortage: Maximizing Employee Retention in a Changing Workforce Climate

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Introduction

The face of engineering is changing. Despite the recent recession, engineering remains one of the most in-demand professions; so, finding the best person for a required skill set can be challenging. Multiple factors affect this challenge, including:

- Highly specialized positions are hard to fill.
- Certain U.S. geographic areas are short of engineering staff.
- Approximately 17 percent of all engineers pursue secondary degrees that make them highly marketable in other fields.
- Universities continue to produce fewer engineering graduates.

This complex mix of circumstances underscores the need to protect your company's greatest asset: your employees. That's why a proactive plan for retaining and developing your employees is paramount to your company's long-term success.



01

Keys to retention

Many engineers consider job satisfaction just as important as salary.



01 Keys to retention



Although the recession curtailed many salary increases for engineers, take-home pay was not the most important reason why engineers chose or remained in their profession.

Many engineers consider job satisfaction just as important as salary. Job satisfaction is perceived as:

- | Challenging, fulfilling work
- | Exposure to new technology
- | A good work environment
- | Ongoing education and advancement opportunities
- | Job security
- | Work-life balance

Today's engineers place a high premium on work-life balance. Non-monetary perks, family-friendly benefits, and flexible scheduling are attractive to potential employees. Employees appreciate a company that invests in them personally. Provision for education and career advancement makes employees feel valued and also ensures that your workforce stays current with new technologies—a "must" for all engineering professions.

Benefits that include flexibility and education can help meet corporate goals and increase employee retention. Much more can be done, to everyone's mutual benefit.

02

Retention strategy: flexibility

“Hybridizing” your workforce can help ensure that you respond quickly to peak production demands without overtaxing any portion of your workforce.



02 Retention strategy: flexibility



Flexibility through cross-training and stretch projects

Despite today's need for highly specialized workers, tomorrow's engineering staff will need to be able to fill more than one niche in your company. This fluidity is a requirement for meeting the shifting demands of manufacturing. "Hybridizing" your workforce can help ensure that you respond quickly to peak production demands without overtaxing any portion of your workforce.

This may require cross-training employees. Good candidates for cross-training possess the ability, aptitude, and willingness to learn additional skills, both within and outside of their departments or areas of expertise. When cross-training is presented as an opportunity, it can fill corporate needs and provide employees with new, challenging work.

Examples where cross-training may be highly successful include:

- | Work processes that typically have backlogs – If employees are cross-trained to work in these areas as needed, processes could be streamlined, workflow would become more efficient, and output would be more productive. (Quantify results, including employee satisfaction, before moving from a pilot program to full-scale implementation.)
- | Niche positions that take the longest to fill if openings occur – Consider cross-training people for these jobs so that staff will be available to fill openings temporarily or permanently, if needed.
- | Training across engineering disciplines

This third example is almost unheard of, but it may benefit your company, fiscally and otherwise. The National Science Foundation's latest report states that an interdisciplinary approach to education and research is increasingly necessary for tomorrow's workforce and the innovation needed to solve complex problems. For example, a chemical engineer's knowledge of plastics may enable that person to assume some tasks of a biomedical engineer in developing a new micro-catheter.

Stretch projects can challenge workers beyond their comfort level. However, selective use of stretching can make your workforce more fluid and your company more agile. Examples include:

- | Technology development versus technology application – If engineers felt comfortable and competent working in both areas, how much faster could the company move ideas from drawing board to prototype or product?
- | Utilizing staff besides engineers to perform select engineering tasks – Example: an engineering technology graduate with strong drafting and design skills may be just as productive in drafting as an engineer would be.

Stretch projects can help workflow and the company's bottom line.

AN INTERDISCIPLINARY approach to education and research is increasingly necessary for tomorrow's workforce and the innovation needed to solve complex problems.

02 Retention strategy: flexibility



Flexibility through an optimized workforce

Another way to increase workforce flexibility is to analyze your mix of full-time, part-time, and contract employees, and adjust the mix according to production needs.

Including more part-time engineers or those who are hired on a project basis can smooth production ebbs and flows, while supporting employees' desires for work-life balance (an increasingly important element of job satisfaction). Consider:

- | Projects and work areas that would benefit most from part-time or contract staffing
- | Employees who might prefer part-time, flex-time, or fixed-duration work
- | Employees who are nearing retirement and would like to phase into it by working part-time or by-the-project

Retired engineers represent one of the most flexible untapped labor pools available today, and they are well-suited for project work, particularly when specialized skills are needed. Many of them perform consulting work as free agents or contractors. Others return to work part-time; but, more notably, many others are choosing to return to work full-time, which is an emerging trend among older workers in general.

In the early 1990s, part-time work among older workers began trending upward, as full-time employment for that age group started to decline. That was not unexpected. However, after 1995, that trend reversed sharply. Between 1995 and 2007, the number of older full-time workers nearly doubled, while those working part-time rose only 19 percent. As a result, the latest U.S. Bureau of Labor Statistics (BLS) figures available, from 2007, indicate that full-timers accounted for a majority among older workers: 56 percent.

With all these options and a shifting labor pool, consulting a staffing company can help you determine the best ways to ensure the right mix of employees.

INCLUDING MORE PART-TIME ENGINEERS

and/or those who are hired on a project basis can smooth production ebbs and flows.

02 Retention strategy: flexibility



Flexibility through skills development

A third way to increase your engineering workforce's flexibility is through education, both formally and informally. Apprenticeships are highly structured experiences that help college students develop hands-on engineering skills. Commonly known as a co-op, this type of program also introduces students to your organization's culture. If you don't already offer a co-op program, consider starting one. It can become a source of ready-made employees. When calculating recruitment and retention costs, it ultimately may cost less to hire and orient a recent graduate who has participated in your co-op program, rather than another person with work experience but no exposure to your company.

Coaching bridges skill gaps that may exist in current employees. Although coaching may be used in many ways at all staff levels, consider also how it can enhance staff utilization. What additional tasks could someone with an associate engineering degree do, if given the right coaching? For example, a person with an AAS in computer electronics could successfully set up or calibrate testing equipment. Coaching may also become a stepping stone for employees to earn advanced degrees.

IT ULTIMATELY MAY COST LESS TO HIRE

and orient a recent graduate who has participated in your co-op program, rather than another person with work experience but no exposure to your company.

02 Retention strategy: flexibility



Flexibility through mentoring

Mentoring may be today's most under-utilized career development and retention strategy. Whether done formally or informally, mentoring can identify employees who show promise for advancement, help employees chart a career path in your company, provide shortcuts to learning organizational processes and corporate culture, and equip employees to take advantage of those opportunities. A recent international survey of more than 4,500 leaders shows that 91 percent of those who had a mentor said that the experience provided moderate or great benefit to their careers.

While mentoring increases employee satisfaction, it also increases the corporate ledger.

Companies with stronger leadership development systems enjoy significantly higher success rates in implementing business strategies, as well as higher returns on equity and profit, as compared to their competitors.

Mentoring is particularly important to engineering. The average age of today's engineer is in the mid- to late-40s. Most people who are tapped for succession planning or leadership development are age 25 to 44—the fastest shrinking portion of today's labor pool in terms of sheer numbers, according to the BLS.

The oldest baby-boomer engineers started retiring in 2007, and they will do so in droves during the next two decades. It's important to retain that brain trust—the repository of knowledge, experience, and problem-solving skills that academic learning can't convey. Mentoring can pair seasoned engineers with younger ones, to pass on both skills and knowledge. Mentoring is also highly successful in acclimating international hires to American industrial culture.

COMPANIES WITH STRONGER LEADERSHIP DEVELOPMENT SYSTEMS

enjoy significantly higher success rates in implementing business strategies, as well as higher returns on equity and profit, as compared to their competitors.

03

Retention strategy: research and advanced education

One would expect an engineer to become more heavily involved in research as his or her tenure increases, but the opposite is actually true today in America.



03 Retention strategy: research and advanced education



Perhaps engineering's biggest challenge is to continue producing relevant research and innovative manufacturing solutions. One would expect an engineer to become more heavily involved in research as his or her tenure increases, but the opposite is actually true today in America. Companies can reverse this trend by incorporating research and development responsibilities as career-enrichment opportunities.

Historically, only engineers with advanced degrees have been involved in research and development (R&D) work. Although fewer people are earning those degrees today, that should not deter you from encouraging innovation and R&D in your company:

- | Seek out people with forward-thinking abilities and a "no-limits" approach to problem solving. R&D requires out-of-the-box thinkers.
- | Engage engineers who are passionate about technology development.
- | Assess whether an engineer truly requires an advanced degree to perform some of your R&D.
- | Empower your employees to think creatively and act on those ideas.
- | If an advanced degree is needed, subsidize the cost in part or in whole.
- | Greater financial contributions can be tied to tenure or in-demand positions for which employees desire to train.
- | Actively seek grants, partnerships, government funding, and other opportunities to underwrite the cost of research and development. Consider how new incentives in federal funding might help company costs in this area.

04

Retention strategy: an engineering staffing supplier

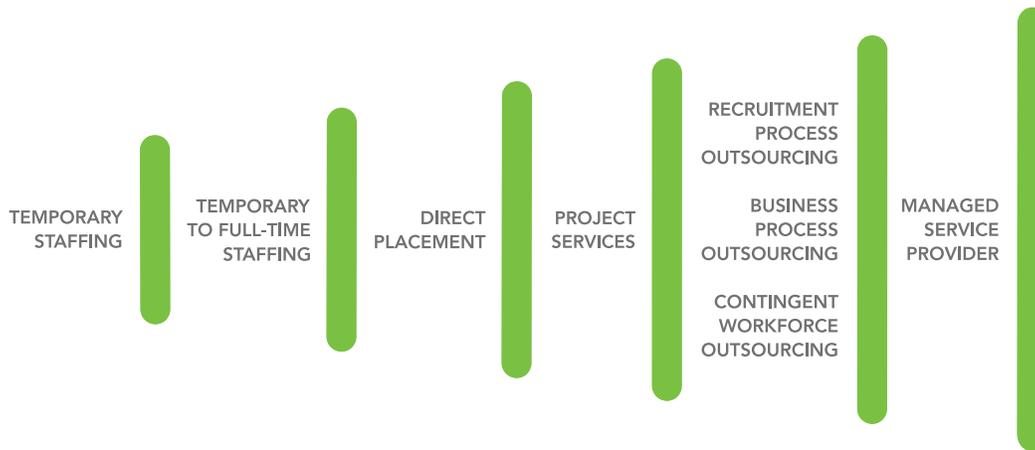
Much like a general contractor, a master vendor staffing supplier can handle administrative and recruiting work, among other workforce solutions.



04 Retention strategy: an engineering staffing supplier



A staffing supplier can serve as your master vendor to help with all of your staffing needs, whether they are for permanent or contract employees, specialty staff, or management. Much like a general contractor, a master vendor staffing supplier can handle administrative and recruiting work, offer consultation on retention programs, and recommend the best selection of subcontractors as needed.



Conclusion: A Rewarding Partnership

Opting to use a contingent workforce has advantages, including ready access to specialty skills and talent for short- or long-term projects, as well as increased productivity. Ultimately, effective communication with both the contingent staffing agency and your contract engineering workforce will go a long way and should result in a truly rewarding partnership for years to come.

Resources

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