EE Times:
How to keep engineers happy

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It's harder than it's been in years for electronics companies to hold onto engineers as market dynamics have pushed unemployment rates below 2 percent. How does a company keep its engineers from seeking greener pastures? What makes an organization the kind of place an engineer wants to work?

Companies said they retain employees by setting the stage for them to find professional opportunity, satisfaction, reward and growth. They keep engineers close to the excitement of solving problems and creating products, and try to minimize everything else. They reduce attrition by controlling for factors that would give engineers cause to look elsewhere for work.

"It's pretty basic," said John Challenger, chief executive of Challenger, Gray & Christmas Inc., an outplacement consulting firm headquartered in Chicago. "It comes down to making people feel valued and recognized, and creating a place they enjoy working, where they get meaning out of their work."

Forging such a workplace is a project, however, and some companies are better than others at retaining engineering staff. A recent EE Times survey of semiconductor suppliers found varying engineer turnover rates, from a high of 12 percent a year at Actel Corp. to less than 1 percent at Renesas Technology Corp. Analog Devices Inc.'s rate was close to the survey's 7 percent average, reported as 7.5 percent the past few years when the market was growing, up from 3 or 4 percent the previous few years.

Interviews with a dozen engineers and managers in the United States--conducted by phone, via e-mail or in person--show that most companies control for as many workplace variables as they can to minimize turnover. They also show that engineers change jobs in many cases because they want more excitement, better recognition or greater opportunity than they believe they can get from their current employer. Sometimes they are simply turned off by factors their employer cannot control.

The flip side of companies' desire for low turnover is engineers' desire to accommodate them. "Most workers would rather not change jobs," said Andrew Iserson, director of information technology at Telvent Farradyne Inc. and an adjunct professor at Johns Hopkins University's Carey Business School. Workers change jobs when pushed by some outside or internal force, such as a call from an employment agency, the concerns of family or a change in the company's stability.

"Engineers are no different than other employees in these regards. If an organization pays a fair salary and constantly shows the engineer that they are valued, the chance of their leaving is small," Iserson said.

Yet the very company that one engineer flees may be another's prized destination. The style and ability of individual managers may partly explain such differences in perception--and companies know they must groom engineers to be effective managers.

"Engineers do not lean in the direction of being competent managers," said Joe Javorski, director of worldwide staffing for Analog Devices. "That's something you need to work on closely with them. They consider their primary role to be engineers. They design products, and managerial requirements take a backseat."

Micron Technology Inc. tries to instill management skills in supervisors and encourages engineers to pursue opportunities within the company. "I do it, my peers do it and my managers have done it for me," said Ed Jenkins, an engineering group manager for CMOS imaging products who oversees 20 workers at Micron. "It's good to have someone guiding the way."

As a manager, Jenkins said, "it's challenging to keep everyone challenged. They're all very driven, like myself. Some parts of the work are not always the most exciting stuff. The key is to keep people interested, because if they get bored they start looking for other things to do."

Engineers and managers repeatedly stressed the need to keep irritating chores in perspective (generating documentation, for example, is necessary, tedious and temporary work). But problems with work, co-workers, supervisors or expectations that can't be managed or eliminated can create a mismatch that sends an EE packing.

"[My] previous employer had me taking too many trips to Japan, impacting family life when the children were small," said John Seitters, senior design manager with Intersil Corp. After two years working for that previous employer in Washington state, he accepted a position with Intersil in Ohio that was closer to relatives. Seitters has since moved to Research Triangle Park, N.C.

Another common refrain among the engineers who reported satisfaction on the job was that their employers stay out of their way and let them work. "It's a laid-back workplace, where people aren't counting time on the clock in seconds. They're more focused on results," applications engineer Joseph Tarkoff said about Analog Devices.

Corporate structures and policies, which can grow more complicated as a company expands, are enough to send some engineers out the door. "There are no organizational obstacles that really make it hard to focus on my work," Sungjin Kim said approvingly of Spansion Inc., which he joined 10 months ago as process development engineer after spending seven years in a similar role at Samsung Electronics in South Korea and then earning a PhD at the University of California, Berkeley. "At my previous employer, there were some organizational inefficiencies that slowed down the engineering decisions sometimes."

Opportunity is the main reason engineers change jobs. David Schie recently left Maxim Integrated Products Inc. to become vice president of analog design engineering and R&D at Micrel Inc. "It was an opportunity to take a leading role at a company that is poised for growth, that has the ability to become one of the analog leaders," Schie said. Micrel's co-founder, president, CEO and chairman, Raymond Zinn, made a big impression when he and his wife, DeLona, entertained Schie and his wife at Zinn's home. "Ray is a very good salesman," Schie said. "There was good synergy. Micrel had a need, and I had an opportunity."

Companies that aren't as big, don't have multiple offices or aren't in a prime location put extra effort into making a positive impression. Analog Devices finds it hard to attract engineers to its headquarters location outside Boston, when it must compete against employers in Silicon Valley, Austin, Phoenix, Europe and mainland China. So it participates in a cooperative education program with Northeastern University that brings undergraduates into ADI for what staffing director Javorski called "a seven-month interview." Each co-op student is considered a potentially strategic hire. "When we can attract people, we are able to hold onto them," Javorski said. "Getting them here is another matter."

Location is a card that companies play with care. Single-location operations can provide stability; multiple offices may mean more opportunities. But while mobility opens doors, it's a double-edged sword. Intersil's Seitters moved to Washington from Florida and didn't like it. "The great Northwest was too rainy," he said.

When borders aren't barriers, however, opportunities multiply. Giuseppe D'Onofrio worked with Texas Instruments Inc. in Avezzano, Italy, then with Dialog Semiconductor GmbH in Kirchheim, Germany, and now is with Micron Technology in Boise, Idaho, where he is a senior engineer in the CMOS imaging product engineering group. "I am starting again, and my idea is to spend most of the remaining part of my career here at Micron," D'Onofrio said. "There is a chance to apply for a PhD" and to move into management.

In contrast, Micron's Jenkins has held three positions at the company over the past 10 years--all in Boise Valley. "I can't imagine another place where I'd want to live," said Jenkins, who pumped gas and started a family while earning an engineering degree before joining Micron. "There's great culture, a low crime rate. It's a great place to raise your kids. It does play into my decision to stay at Micron."

Effective leadership is another factor in keeping employees motivated and engaged. It comes down to communicating goals and conferring respect, both personally and professionally. "There is no reason that this cannot be accomplished," Johns Hopkins' Iserson said. "And respect for professionals costs the company little to no extra money."

David Boisvert, design director in the data conversion division of National Semiconductor Corp., said he sees his work contributing to corporate objectives in a "broader sense" than when he joined National 13 years ago. "I consider the long-term economic and application-specific aspects of a given project, not just the technical solution, such as how to meet a specification," Boisvert said. Taking on added responsibilities and having a good mentor have also helped his career, he said.

Mutual respect is key. Minh Van Ngo said he has "stayed and stayed" with the same company--having joined Advanced Micro Devices Inc. 21 years ago and stuck with its spin-off, Spansion--because of "the people and the company culture."

A Spansion fellow and manager of the Thin Films Technology Group, Minh Van described his colleagues as "technically talented, but also cooperative and friendly" and added that "upper management has always listened to ideas from technical people." Spansion's development facility, he said, is "filled with state-of-the-art process, metrology and analytical tools," and "breakthroughs and innovations in advanced technology are well recognized and rewarded."

People vary, however, in their definition of what constitutes recognitions and rewards. For one employee, it might mean greater compensation. For another, it's public recognition. A manager has to know which button to push.

"Some engineers really like the fanfare [of approbation] and consider that a reward; others do not," said ADI's Javorski. "It would be an error to recognize someone when that's the last thing they want."

One difference companies recognize today is the need to make the workplace a community that speaks to employees on

both a social and a professional level, said consultant Challenger. "There's more focus on creating an environment where someone wants to stay--a physical environment, and one that is involved in civic or charitable programs as a group. It might be responsive to what employees are interested in," be it golf outings, parties or some other event that brings people together, he said.

And "survey after survey" shows that "having a friend or friends at work" is central to an employee's desire to stay put, he said. "So having an environment that's collegial is an important way of helping retain people."

If an employer does right by an engineer through the first two or three years of employment, the chances of long-term retention increase, said ADI's Javorski. "This includes all of those things that contribute to workers' wanting to stay," he said: good communication, good compensation, good leadership, good products and good strategic vision.

"I call it 'managing the transition,' " Javorski said. "If you take care of that, other things take over. All of these are plans, not just happenstance."

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