By Adwoa K. BUAHENE AND GISELLE KOVARY

ith each passing year, the iron ring on a young engineering graduate's finger becomes an increasingly valuable employment commodity. As the Baby Boomers follow the Traditionalist generation into retirement, the younger Gen X engineering grad will be in greater demand. The human resource challenge of the next decade will be attracting and retaining younger workers from a much smaller labour pool. Add to this that Gen Xers have different attitudes and expectations of work, and the result is that organizations must seek to understand what makes this cohort tick to successfully recruit and retain the best and brightest.

In a report issued by the Conference Board of Canada, 95 per cent of its survey respondents experienced labour shortages in professional occupations, including engineering (*Performance and Potential 2001.*) Even if an organization is successful in recruiting the right people, keeping them is not always easy. Seventy per cent of the respondents in the Conference Board survey stated that they had difficulty with recruitment and retention; here too, the engineering profession was highlighted.

The first set of organizations to be affected by Canada's shrinking labour pool are Crown corporations, and the manufacturing and construction industries. *Canadian Business* has also reported that companies employing engineers in the oil and gas industry are likely to "feel the squeeze" in the next decade ("Help Wanted: 2014 Edition," March 1-14, 2004).

A report published by the Canadian Council of Professional Engineers (CCPE) indicated that the labour pool is also shrinking in engineering education. The survey of engineering faculty demographics reported: "more than 85 per cent of Canada's engineering faculties were not able to fill all of their teaching positions in the school year 2000-2001." (*Engineering Dimensions*, January/February 2004, p. 38.) Faculty retirement was cited as the main cause for the shortfall.

Draining the labour pool

Will getting and keeping the right engineers soon be as hard as finding a needle in a haystack?

Why are we facing a shrinking labour pool? Canada's demographic breakdown, as taken from Statistics Canada data, provides some answers. During 1946 to 1964, birth rates were at their highest. After 1964, birth rates sharply declined, producing the smaller cohort-Generation X (1965 to1980). As the Baby Boomers began to have children, birth rates started rising again resulting in Generation Y (1981 to 2000). There are approximately 10.7 million Traditionalists and Baby Boomers in Canada, who are under the age of 65. However, there are only 6.8 million Gen Xers. Thus, we have 41 per cent of the workforce that needs to be replaced by the 26 per cent of Gen Xers-the natural successors for these positions. Gen Ys, who range from age four to 23, are not yet active in the workforce.

Stemming the flow

To win the battle for talent, organizations that employ engineers will have to overcome five strategic management challenges:

Challenge #1-Preparing for the future by understanding organizational demographics: Organizations must analyze their organizational demographics at a departmental and business unit level. It is difficult to plan unless an organization has a clear picture of who will be retiring and when. For example, Canadian Business reported that Ontario Power Generation (OPG) discovered that 25 per cent of its workforce will need to be replaced in the next five years. People Performance Inc. (or n-gen), a performance consulting company, has discovered in initial discussions with public sector departments that many are aware that they will be losing anywhere from 40 to 50 per cent of their management staff in the next five to 10 years. To combat this problem, an organization should select an appropriate succession-planning model that fits with its corporate culture.

Succession planning cannot start soon enough. Critically, an organization needs to

identify the people who will be leaving and the competencies that will be required in the future. An existing position that will be vacated might not need to be refilled, because of changes in the business climate. Existing skill sets may no longer be vital for future growth, and positions may require re-defining to better meet forecast skill demands. After selecting the forecast competencies, candidates can be identified and groomed for the position.

Challenge #2–Developing strategies that will "keep'em": Since the employment market will shift from an employer market to an employee market, organizations must understand how to "keep" their younger engineers.

For most organizations, it is not feasible simply to continue to increase salaries as a retention strategy. In fact, Gen X employees are not exclusively motivated by compensation. They also value non-monetary rewards and recognition programs, including time off and non-work-related memberships. Understanding Gen Xers leads to retention strategies that fit this cohort's expectations.

Similarly, retention is not just about rewards. Gen Xers view a variety of organizational factors, such as loyalty and relationships with colleagues and managers, differently than their older counterparts. They possess a different approach to work than the previous generations and have different expectations from their employers. Work environments should be created that recognize the differences. Managers can learn techniques to improve communication, collaboration and teamwork. Implementing non-complex solutions, organizations can increase their ability to retain younger workers by better connecting with them.

Challenge #3–Learning and development programs that build internal bench strength: Designing various types of learning and development opportunities for Gen X employees has a dual purpose. First, these opportunities form part of a retention strategy. Second, in the future, it might not be feasible to go to the labour market to find the skills, so building internal bench strength will be key to human resource planning.

Gen Xers, and even more so Gen Ys, believe professional learning should be continuous and never-ending. Gen Xers are particularly interested in learning new skills, as this will allow them to remain marketable. Contrary to some assertions, providing learning and development opportunities will not cause Gen Xers or Gen Ys to leave their employer. Younger employees leave when they feel they are stagnating and unable to expand their knowledge base. In today's flattened organizations, promotions are not always readily available. Gen Xers realize career growth tends to be more spiral than vertical, so they are open to lateral moves that allow them to learn new skills.

To provide challenging learning experiences to its younger workers, organizations should offer a blend of formal and informal learning and development programs. Action-based learning projects, stretch assignments and "coopetition" programs can be tailored to suit any organization's training budget, while remaining "real world"-based. Building internal bench strengths means focusing inside the organization to develop the employees, and the skills organizations required.

Challenge #4–Transfer the knowledge now before it's too late: Having people retire is more than just losing employees; it also can result in a loss of corporate memory, intellectual property and key project/client knowledge. Mechanisms can be developed to ensure that knowledge remains within the organization. Organizations may implement formal mechanisms like knowledge management databases and mentoring programs. Also, informal mechanisms like peer lunch and learns will ensure that the "next generation" gradually acquires the information and knowledge to become the next leaders of the organization. Job shadowing and communities of practice are tools that help organizations capture knowledge before it walks out the door.

Challenge #5–Building the next supply of engineers now: As most Gen Ys are under the age of 18, now is the perfect time for engineering organizations to encourage students in the elementary and secondary school system to consider engineering as a profession. Involvement at the elementary school level will begin to open children's minds to the options and possibilities of working in the engineering field. Efforts like National Engineering Week (News pp. 16) turn students on to science and engineering at a young age.

As children learn that most structures, machines and processes are manufactured, designed and /or operated by engineers, engineering will become a popular career option. Engineering firms should consider sponsoring school projects, participating in career fairs and giving talks to students about the field of engineering.

At the post-secondary level, the profession's participation in the school system will help profile engineering and increase organizational brand awareness.



By the time many Gen Ys enter university, the competition to attract top talent will be fierce, so the earlier an organization can create an identification with its "brand," the more successful it will be in attracting new recruits.

Filling in future leaders

As Baby Boomers retire over the next five years, Gen Xers will be taking on greater responsibilities earlier in their professional engineering careers.

Since this generation of engineers holds the future leaders, they should be supported and groomed. By responding to how Gen X and Y employees view relationships with their employer, organizations will be better able to create "winwin" employment contracts. Since most Gen Xers and Gen Ys do not believe their employer can (or should) guarantee job security, an organization that builds winwin relationships will be more successful in getting and keeping top talent. Since Gen Ys are often considered as Gen Xers on "fast-forward," this younger cohort will even sooner be demanding flexibility, individuality and rewarding career opportunities. The organization that responds most quickly to changed employee expectations will win the talent battle.

Given our shrinking labour pool, it is important also to examine mechanisms that retain more experienced workers (Traditionalists and Baby Boomers). Many want to continue working in either parttime, on contract assignments or in a mentorship capacity. The benefits of retaining older workers will be a greater flow of information between generations, and a valuable resource for coaching and mentoring. The engineering firm of the future will grow its competitive advantage by harnessing the power of each generation. ***

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The four generations

Traditionalists (born 1922-1945) Loyal, respectful of authority, dedicated, hard-working, stable, compliant

Baby Boomers (born 1946-1964) Optimistic, relationship focused, personal growth, driven to succeed

Gen Xers (born 1965-1980) Independent, pragmatic, informal, techoliterate, results-driven

Gen Ys (born 1981-2000) Confident, diversity tolerant, innovative, technology savvy