

# GOOD FOR BUSINESS

Diversity in the  
**ENGINEERING\***  
Profession



**engineers**canada

**Diversity in the workplace means participation and leadership from all segments of society and a workforce that reflects the makeup of our society. Economic indicators reveal that organizations that support diversity in their workforce enjoy significant benefits which include stronger financial performance, increased access to a broader base of talent, increased innovative capacity, increased return on investment in human resources, and the ability to respond more effectively to new market opportunities. A strong business case developed by the WinSETT Centre lends further support to this concept and suggests that increasing the diversity of Canada's licensed engineers will generate even greater positive impacts in our knowledge-based, technological and highly competitive global economy (Emerson, 2012).**

## **Meeting Skilled Labour Needs**

Across the industrialized world, the upcoming retirement of the baby boomers will mean that companies are going to lose large numbers of senior-level employees in a short period of time. A strong and technically skilled workforce is key to a successful twenty-first century economy and strengthening diversity will address national skilled labour needs.

For instance, between 2011 and 2016, Canadian employers will need to hire around 106,000 information and communications technology workers – approximately 17,700 per year – in a field that is currently about 75 percent male. This gender imbalance compounds the skills shortage problem by limiting the qualified pool from which employers can recruit. This is not a future prospect. It is already happening. (Information and Communications Technology Council, 2011). Skilled labour shortages in coming years are similarly documented in recent reports by the Construction Sector Council, the Mining Industry Human Resources Council, and Engineers Canada, to name a few. It is time to implement an integrated approach to attract and retain underrepresented groups in engineering and technology. Schools, universities, professional bodies and industries need to work together to address the barriers at the individual, organizational and societal levels (Cukier, 2010).

## **Enhanced Business Capacity**

There are business advantages to enhancing diversity in the engineering profession – above and beyond the branding benefit resulting for companies viewed as socially progressive. Research confirms that the time and money invested in implementing the changes to make diversity a corporate goal is well worth the return on investment.

Organizations with a diverse employee population and a supportive corporate culture are able to attract and retain the best talent in a diverse labour market. In this era of global competitiveness, people of various cultures and nationalities are customers, competitors and employees. There is very strong evidence that an organization whose employees reflect the diversity of its customer base responds more effectively in understanding and serving their needs and in identifying new opportunities and markets.

Diversity – The key to a sustainable

**ENGINEERING\*** profession

## Improved Management and Financial Performance

Women in senior management positions make sound business sense. The 2010 study, *Women Matter*, found that companies with the highest share of women on executive committees outperformed those with all-male executive committees by 41 percent in terms of return on equity and 56 percent in operating results (Desvaux, Devillard & Sultin-Sancier, 2010). Prior to this, a 2004 study found that the group of companies with the highest representation of women on their top management teams experienced better financial performance than the group of companies with the lowest women's representation – including a 35 percent higher return on equity (Catalyst, 2004). Additional research by Catalyst also indicates that companies with three or more women on their boards significantly outperformed those with no female board members.

## Increased Return on Investment in Human Resources

As WinSETT's business case asserts, one of the greatest economic advantages of a diverse workforce lies in capitalizing on the major investments in human resources by minimizing loss of talent (Emerson, 2012). Australia's Commonwealth Scientific and Industrial Research Organization found that it cost roughly four times as much to continually hunt for and train replacement staff than it did to provide optimal conditions for job satisfaction and motivation of existing personnel (as cited in Council of Science and Technology Advisors, 2002). Women tend to leave organizations at higher rates than men, particularly at mid-career levels. A *Harvard Business Review* report found that 41 percent of highly qualified scientists, engineers and technologists on the lower rungs of corporate career ladders are female, but more than half (52 percent) drop out of the workforce (Hewlett, Luce, Servon, Sherbin, Shiller, Sosnovich & Sumberg, 2008).

Creating workplaces that support, offer development opportunities for, and provide methods of returning valuable employees to work, provides a return on the organization's investment in valuable human resources and saves on the high costs of this differential turnover. The 2003 Conference Board of Canada report illustrates that workplace cultures that encourage greater participation by women, share many of the same characteristics as those that maximize employee satisfaction and engagement, and lessen the costs related to illness, injury and turnover (McLean, 2003).

## Why This is Important to the Engineering Profession

Engineering is a profession of innovators. Engineers draw on their knowledge and skills to solve many problems in our everyday lives. The diversity of these problems is reflected in the large variety of careers available in engineering. Studies show that diverse groups are more likely to generate creative ideas and solutions. Researchers also found that female employees can enrich an organization's capacity for innovation by bringing different life experiences, perspectives, values and communication, management and leadership styles. Only when its workplace reflects the diversity of the population can an organization reach its maximum innovation potential (Emerson, 2012).

The culture surrounding traditionally male-dominated professions, like engineering, was developed in a different era and no longer reflects the needs, expectations or composition of today's labour force. With an increase in the number of dual-income families and an equal number of men and women participating in the labour market, today's licensed engineers are expected to contribute both at home and at work. Given this change in the labour market, organizations that do not find a way to attract and retain a diverse workforce will be at a business disadvantage.

The benefits to supporting a diverse workforce are many and the evidence is clear and compelling. Engineering organizations looking to create a diverse engineering workplace can consult Engineers Canada's publication, *Welcoming Workplaces: Diversity in the Engineering Profession*.



## References

Catalyst. (2004). *The Bottom Line: Connecting Corporate Performance and Gender Diversity*. Retrieved from <http://www.catalyst.org/knowledge/bottom-line-connecting-corporate-performance-and-gender-diversity>

Construction Sector Council. (2012, March). *Construction Looking Forward, National Summary, An Assessment of Construction Labour Markets from 2012 to 2020*. Retrieved from [http://www.buildforce.ca/en/system/files/products/national\\_summary\\_2012\\_cif\\_0.pdf](http://www.buildforce.ca/en/system/files/products/national_summary_2012_cif_0.pdf)

Council of Science and Technology Advisors. (2002, November). *EDGE – Employees Driving Government Excellence: Renewing S&T Human Resources in the Federal Public Service*. Government of Canada Report. Retrieved from <http://publications.gc.ca/collections/Collection/IU4-20-2002E.pdf>

Cukier, W. (2010, April). Women in engineering: twenty years after the Montréal massacre. *The Journal of Policy Engagement*, 2(2). Retrieved from [http://members.peo.on.ca/index.cfm/document/1/ci\\_id/40271/la\\_id/1](http://members.peo.on.ca/index.cfm/document/1/ci_id/40271/la_id/1)

Desvaux, G., Devillard, S. and Sultin-Sancier, S. (2010, October). *Women Matter 2010. Women at the top of corporations: Making it happen*. McKinsey & Company, Retrieved from [http://www.mckinsey.com/locations/paris/home/womenmatter/pdfs/Women\\_matter\\_oct2010\\_english.pdf](http://www.mckinsey.com/locations/paris/home/womenmatter/pdfs/Women_matter_oct2010_english.pdf)

Emerson, C.J. (2012, July). *Increasing Women in SETT: The Business Case*. Canadian Centre for Women in Science, Engineering, Trades and Technology. Retrieved from <http://www.ccwest.org/LinkClick.aspx?fileticket=1kfyh1Nalk%3d&tabid=82>

Engineers Canada. (2012, October). *The Engineering Labour Market in Canada: Projections to 2020*. Retrieved from [http://www.engineerscanada.ca/files/w\\_Engineering\\_Labour\\_Market\\_in\\_Canada\\_oct\\_2012.pdf](http://www.engineerscanada.ca/files/w_Engineering_Labour_Market_in_Canada_oct_2012.pdf)

Hewlett, S.A., Luce, C.B., Servon, L.J., Sherbin, L., Shiller, P., Sosnovich, E., and Sumberg, K. (2008, June). *The Athena Factor: Reversing the Brain Drain in Science, Engineering and Technology*. Harvard Business Review Research Report.

Information and Communications Technology Council. (2011, March). *Outlook for Human Resources in the ICT Labour Market, 2011–2016*. Retrieved from [http://www.ictc-ctic.ca/wp-content/uploads/2012/06/ICTC\\_Outlook2011\\_EN\\_11-11.pdf](http://www.ictc-ctic.ca/wp-content/uploads/2012/06/ICTC_Outlook2011_EN_11-11.pdf)

McLean, D. (2003). *Workplaces that Work - Creating a Workplace Culture that Attracts, Retains and Promotes Women*. The Centre of Excellence for Women's Advancement – The Conference Board of Canada, Retrieved from <http://www.gnb.ca/0037/report/workplacethatwork-e.pdf>

Mining Industry Human Resources Council. (2011, August). *Canadian Mining Industry Employment and Hiring Forecasts 2011*. Retrieved from [http://www.mihrc.ca/en/publications/resources/employment\\_hiringforecasts2011\\_FINALAug4\\_ENG.pdf](http://www.mihrc.ca/en/publications/resources/employment_hiringforecasts2011_FINALAug4_ENG.pdf)