**NSERC
CRSNG**

Chair for Women in
Science and Engineering
BC and Yukon Region

UBC **Engineering**

WWEST

Westcoast Women in
Engineering, Science
& Technology

Lead Sponsors:

BC hydro
FOR GENERATIONS

WorleyParsons
resources & energy

Teck

Stantec

Dr. Ken Spencer   Henry F. Man

The Value of Diversity

November 23, 2013 | NCWiE

Introductions

- Elizabeth Croft, Ph.D., P.Eng., FASME, FEC
  NSERC Chair for Women in Science and Engineering, BC/Yukon
  Professor of Mechanical Engineering, UBC
  Associate Dean, Education and Professional Development

  Mission:
  The mission of the Chair is to advance engineering and science as welcoming careers that serve our world through holistic understanding and creative, appropriate and sustainable solutions.

Important to Know

- Washrooms

- Emergency Exit
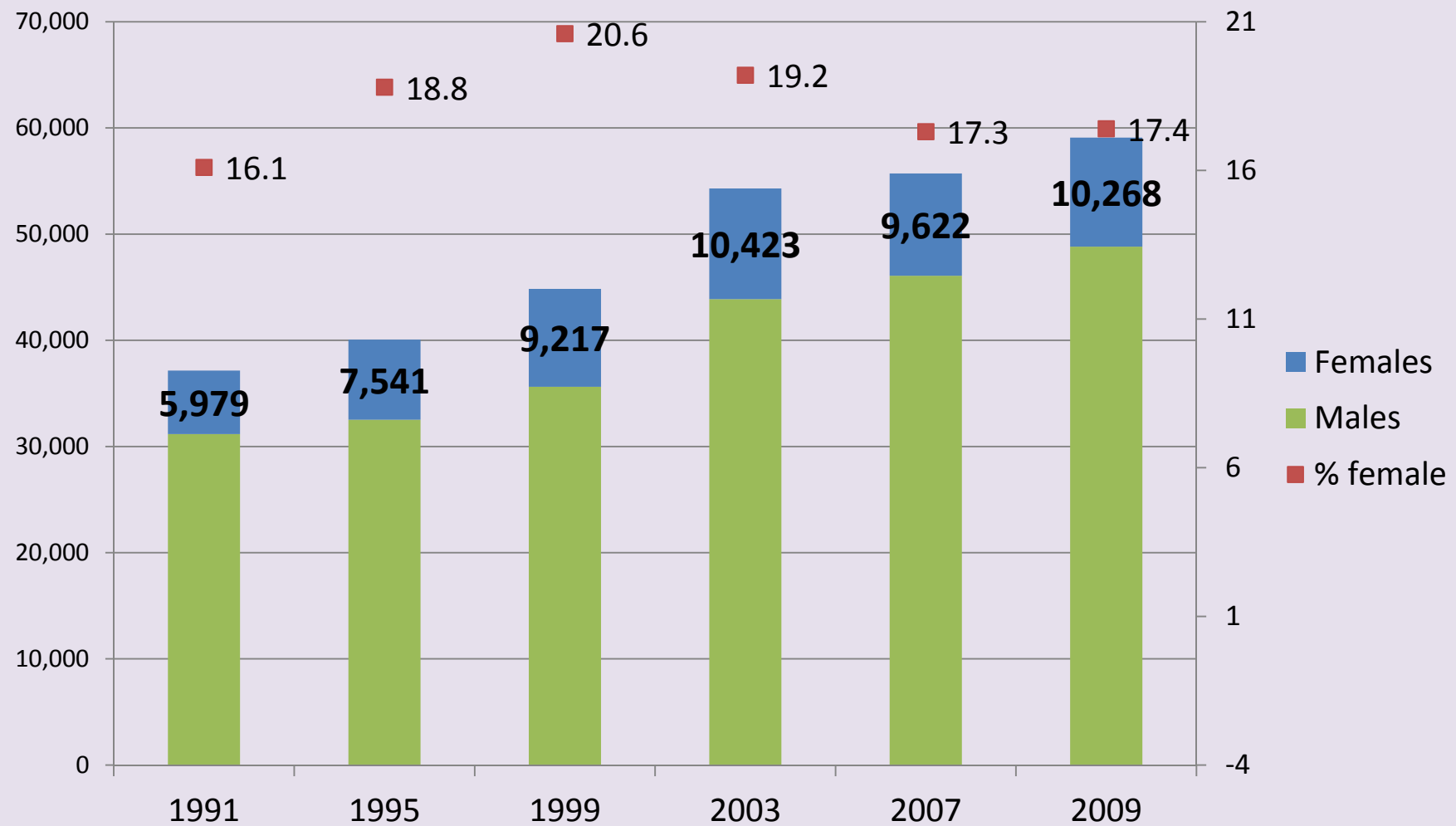
- Fire Procedure

Business Case Summary[1]

- Access of employers to a broader **talent pool**

- Increased **innovation potential and market development**

- Stronger **financial performance**

- Improved **governance**

- Greater **return on human resource investment**

[1] Emerson, C. (2010), Increasing Women in SETT, The Business Case, Canadian Center for Women in Science Engineering, Trades and Technology, 12 pp., www.ccwestt.org

Past and Present Statistics

Engineers Canada 1991-2009 Enrollment Report – Undergraduate

Table 9
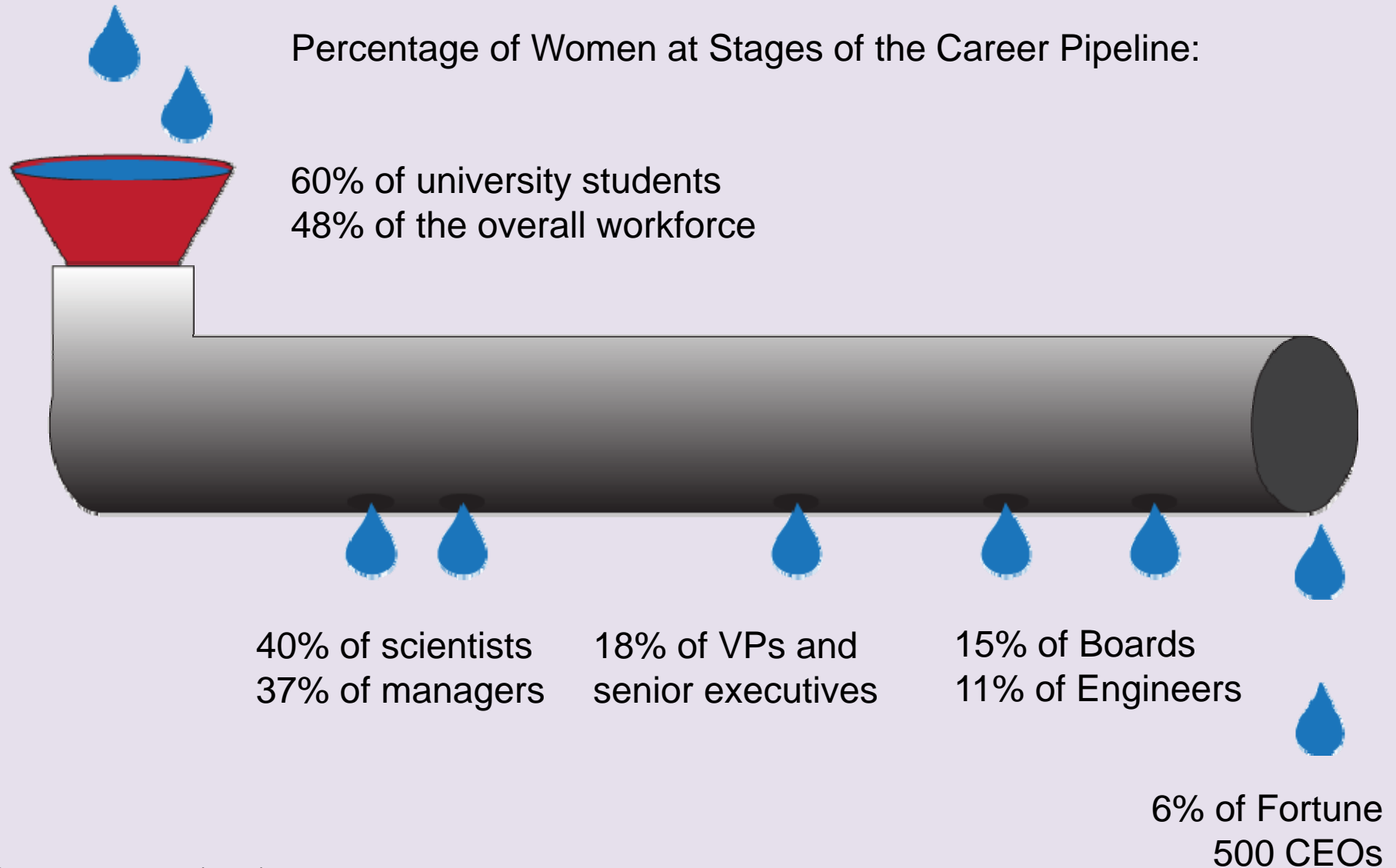## Percentage of women among university graduates, by field of study, Canada, 1992 and 2008

Field of study	1992	2008
	percentage	
Total – Instructional programs	**56.4**	**60.0**
Architecture, engineering and related services	17.5	22.2
Mathematics, computer and information sciences	35.2	30.4
Personal, protective and transportation services	18.2	44.9
Business, management and public administration	51.4	53.0
Agriculture, natural resources and conservation	36.7	55.9
Physical and life sciences, and technologies	45.6	57.3
Humanities	63.7	64.3
Visual and performing arts and communication technology	65.9	66.5
Social and behavioural sciences, law	59.3	67.0
Other instructional programs	73.6	69.4
Education	72.6	76.1
Health, parks, recreation and fitness	68.0	77.0

Sources: Statistics Canada, Postsecondary Student Information System, 1992 and 2008.

Date Modified: 2012-02-24

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Important Notices

Female Talent Pool

Percentage of Women at Stages of the Career Pipeline:

60% of university students
48% of the overall workforce

40% of scientists
37% of managers

18% of VPs and
senior executives

15% of Boards
11% of Engineers

6% of Fortune
500 CEOs

Catalyst Research (2012)

WOMEN IN CANADIAN PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES

CEOs/Heads — 0.0%
Board Directors — 16.6%
Senior Officers — 14.7%
Industry Labour Force — 42.1%
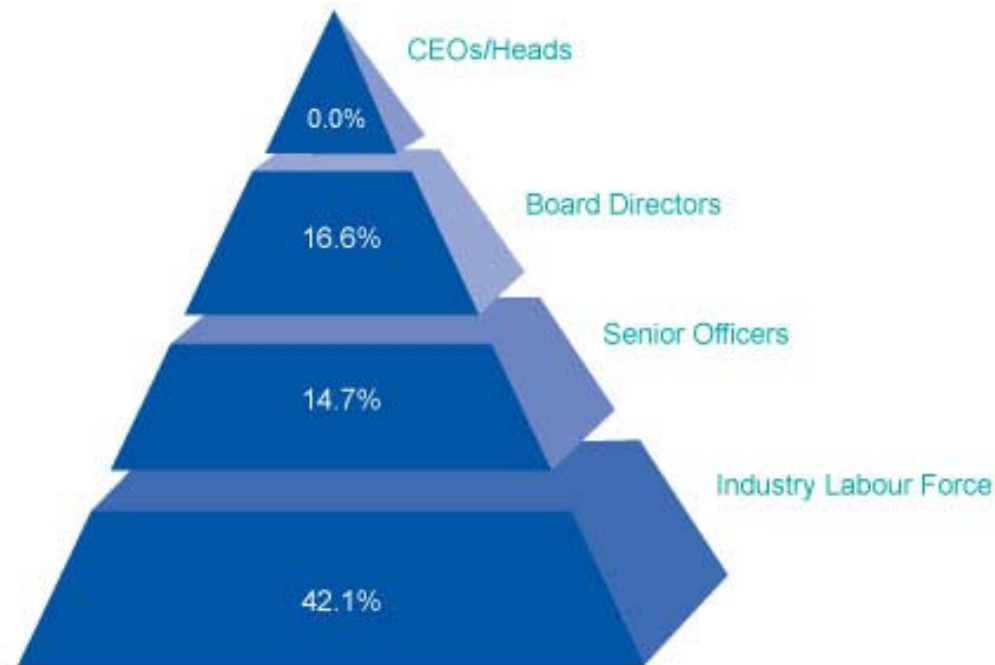
Sources:
Catalyst Research (2012).
Catalyst, 2011 Catalyst Census: Financial Post 500 Women Board Directors (2012).
Catalyst, 2010 Catalyst Census of Women Senior Officers and Top Earners of the FP500 (2011).
Statistics Canada, "282-0008," CANSIM (2012).

July 16, 2012

Catalyst Research (2012)

Engineering Labour
Market Conditions
2011-2020

95,000

professional engineers
will retire by 2020

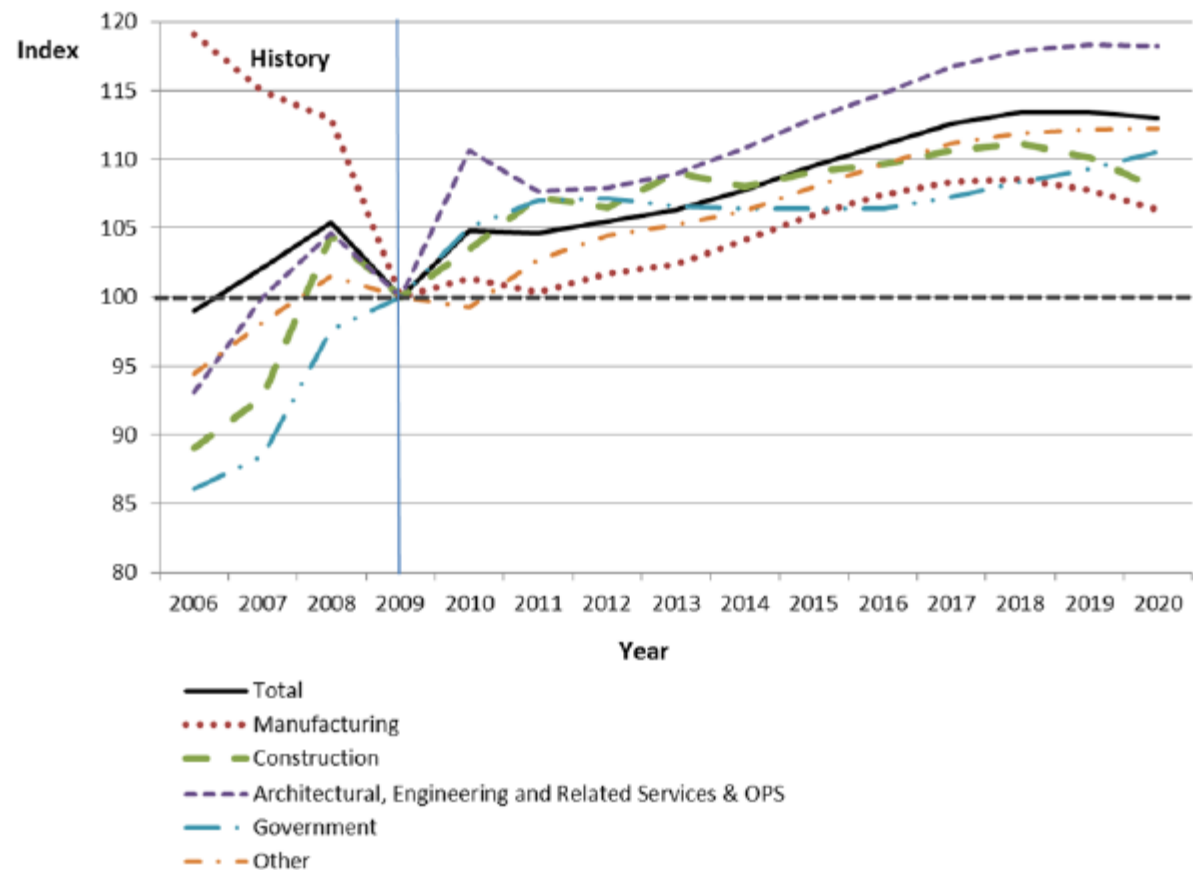"Canada will face a skills
shortage because the
workforce cannot be
replaced fast enough."

Exhibit 2.2
National Engineering Employment Growth by Industry (Expansion Demand)
Index 2009 = 100
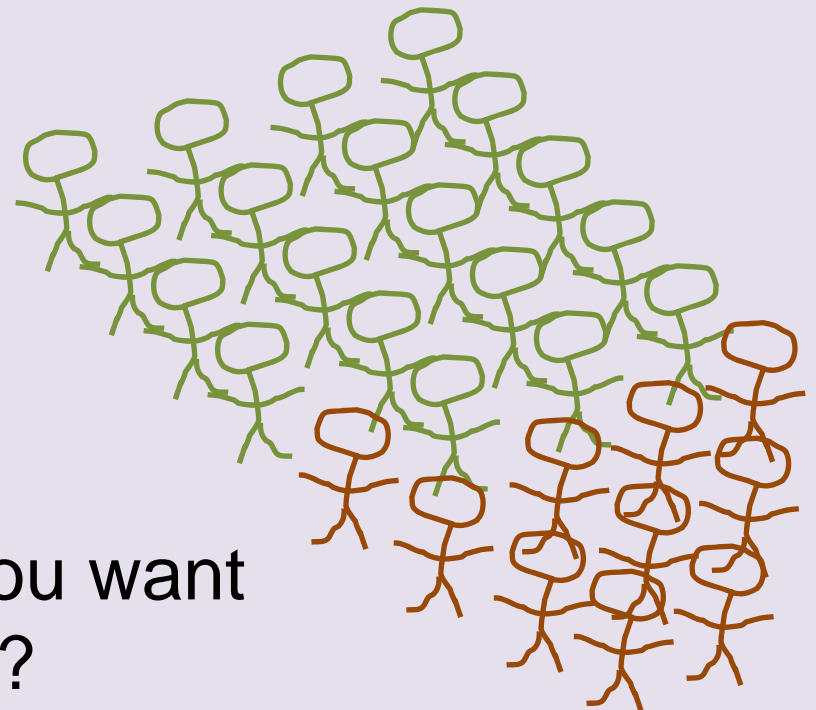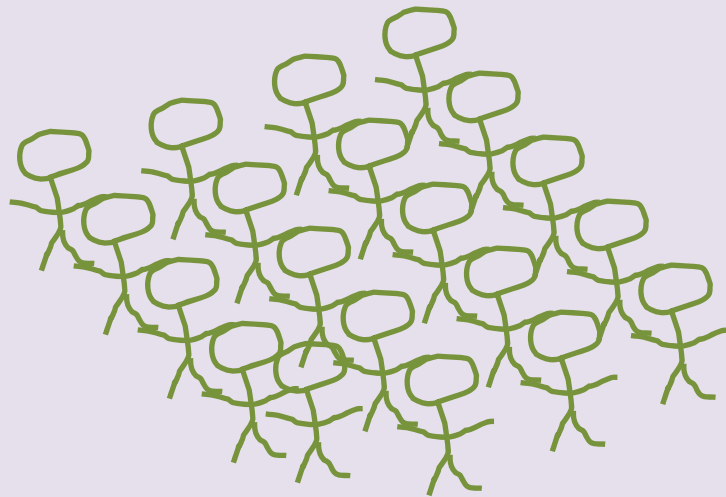
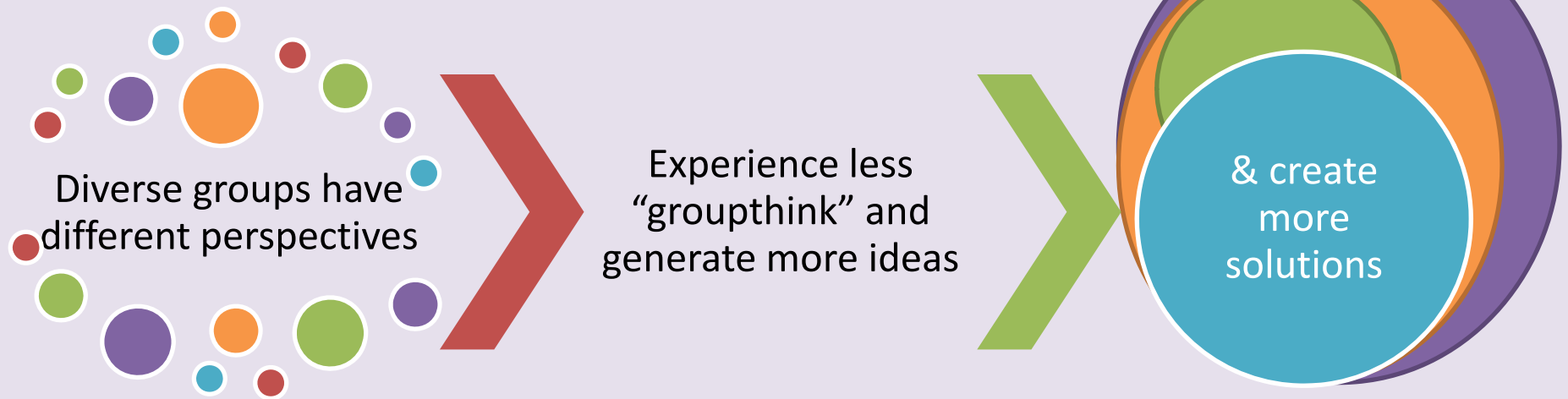A diversity-friendly organization is attractive to everyone, regardless of gender identity. Therefore, diverse companies can pick the best from a bigger pool of candidates.

→ Which group would you want to look at when hiring?

Increase Innovation

Diverse groups have different perspectives

Experience less "groupthink" and generate more ideas

& create more solutions

Diverse groups breed innovation

The Female Factor

The chart plots the collective intelligence scores of the 192 teams in the study against the percentage of women those teams contained. The red bars indicate the range of scores in the group of teams at each level, and the blue circles, the average. Teams with more women tended to fall above the average; teams with more men tended to fall below it.

COLLECTIVE INTELLIGENCE

HIGH

AVERAGE

LOW

% OF WOMEN   0   50   100
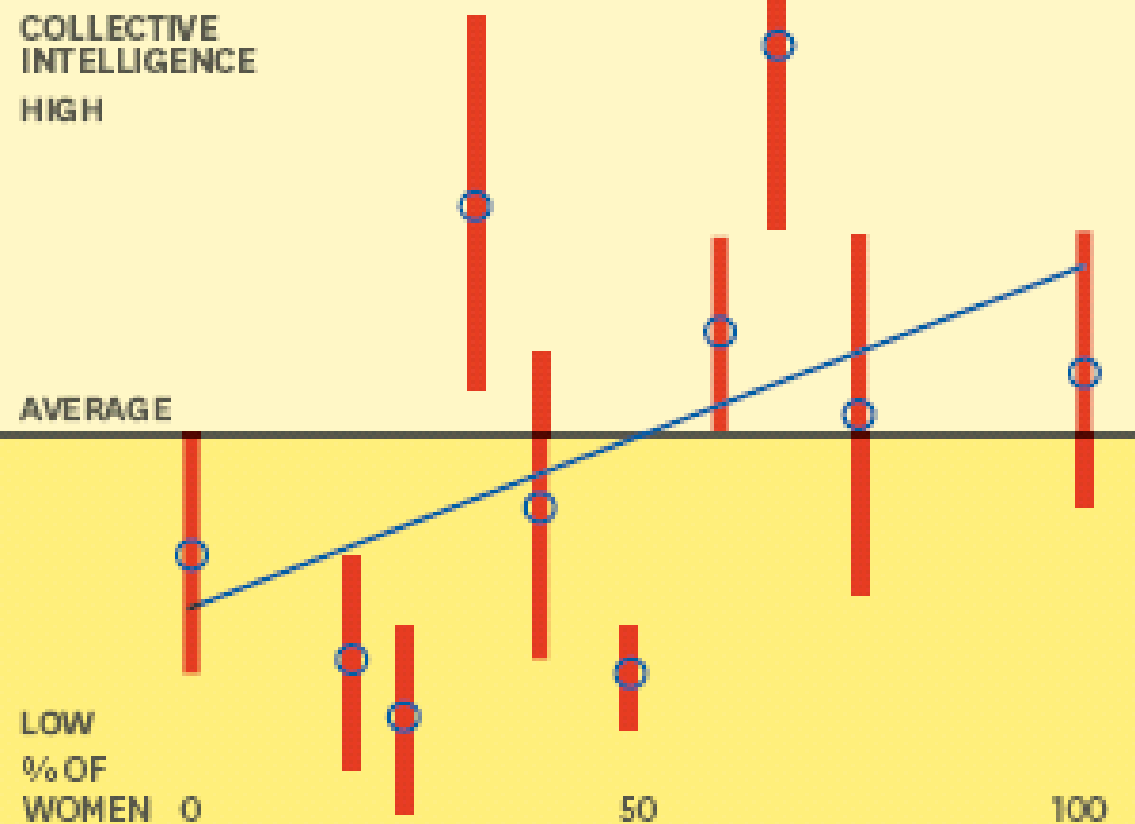
Woolley, A. & Malone, R. 2011. What Makes a Team Smarter? More Women. *Harvard Business Review,* 89(6): *32-33.*

Thomas, D.A. & Ely, R.J. 1996. Making Differences Matter: A New Paradigm for Managing Diversity. *Harvard Business Review*, 74(5): 79-91.

Anacona, D.G. & Caldwell, D.F. 1992. Demography and Design: Predictors of New Product Team Performance. *Organization Science*, 3(3): 321-341.

WWEST

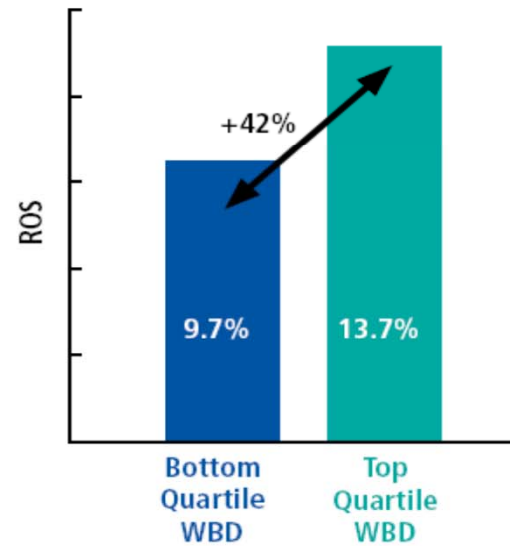### Return on Equity[3] by Women's Representation on the Board

Companies with more WBD outperform those with the least by 53%

+53%

ROE

9.1% | 13.9%

Bottom Quartile WBD | Top Quartile WBD
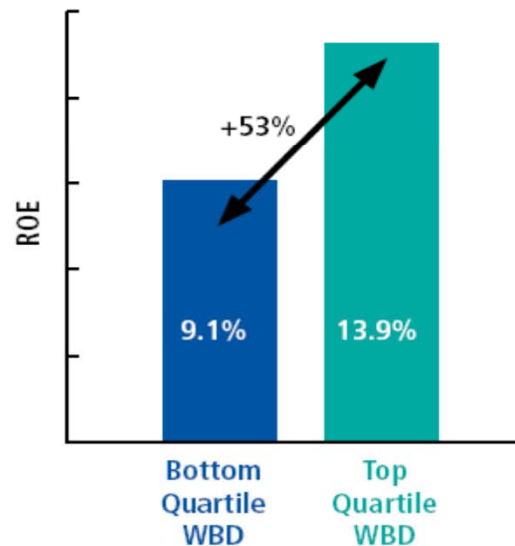
Return on Sales[4] by Women's Representation on the Board

Companies with more WBD outperform those with the least by 42%

+42%

ROS

9.7% | 13.7%

Bottom Quartile WBD | Top Quartile WBD

Return on Invested Capital[5] by Women's Representation on the Board

Companies with more WBD outperform those with the least by 66%

+66%

ROIC

4.7% | 7.7%

Bottom Quartile WBD | Top Quartile WBD
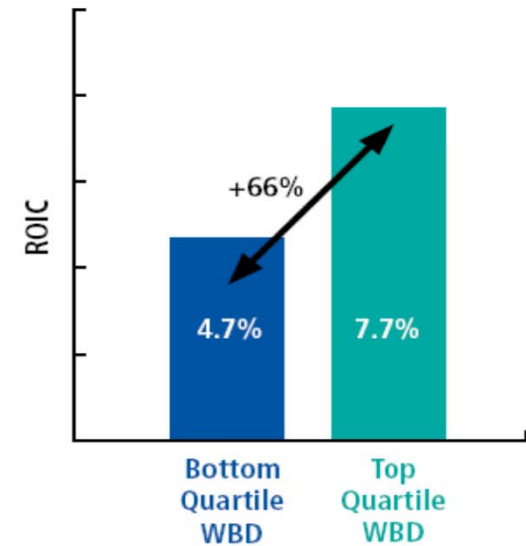
Catalyst. 2007. *The Bottom Line: Corporate Performance and Women's Representation on Boards.*
Catalyst. 2004. *The Bottom Line: Connecting Corporate Performance and Gender Diversity.*
http://www.catalystwomen.org/bookstore/files/full/financialperformancereport.pdf

- "Diversity of thought" through diversity of workforce.

- Women promote differences in **communication and leadership style** leading to **consensus building**, **strong relationships** and focus on **TBL deliverables**.

- 2000 study of US companies found **7.8% increase in market value** associated with **collegial, flexible work environments**.[2]

- Numerous recent Canadian and US studies link **higher representation of women** in **senior management** to **increased ROE, ROS and ROIC**

[2] Orser, B. (2000). Creating High - Performance Organizations: Leveraging Women's Leadership. The Conference Board of Canada. 31 pp. http://www.conferenceboard.ca/

Better Management

Conference Board of Canada:

Boards with more than two or three women have stronger practices in:

- Regular reviews of non-financial performance
- Measurement and implementation of corporate strategies
- Attention to audit and risk oversight and control
- Presence of conflict of interest guidelines and codes of conduct
- Effective two-way communication with stakeholders
- Consideration of measures of innovation and of social and community responsibility

Better Management
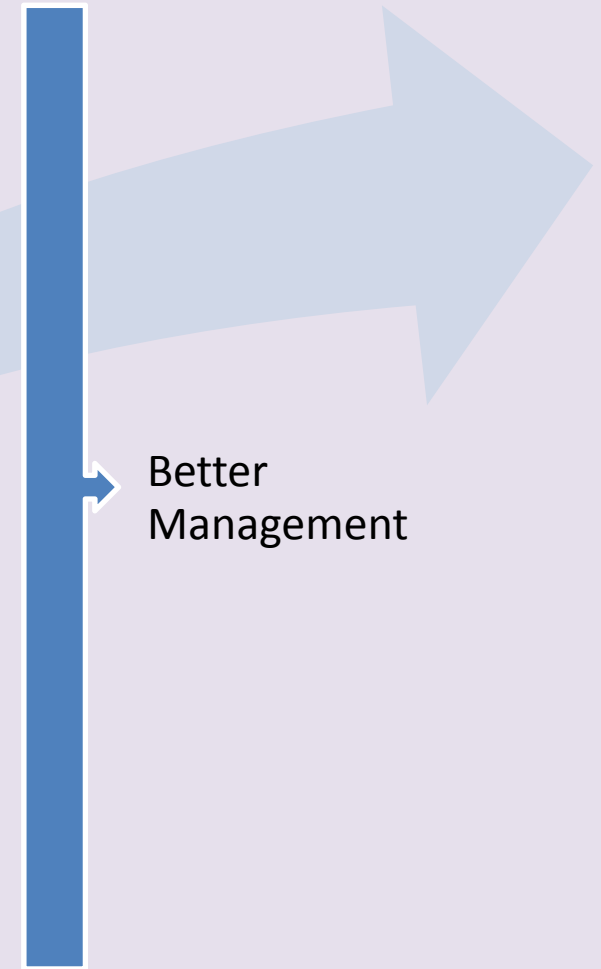
Investment in People

- Excellent employers for women are excellent employers
- The incoming talent pool (millennial generation) has similar values and interests characteristics as women in the current pool:
  - Social and environmental awareness
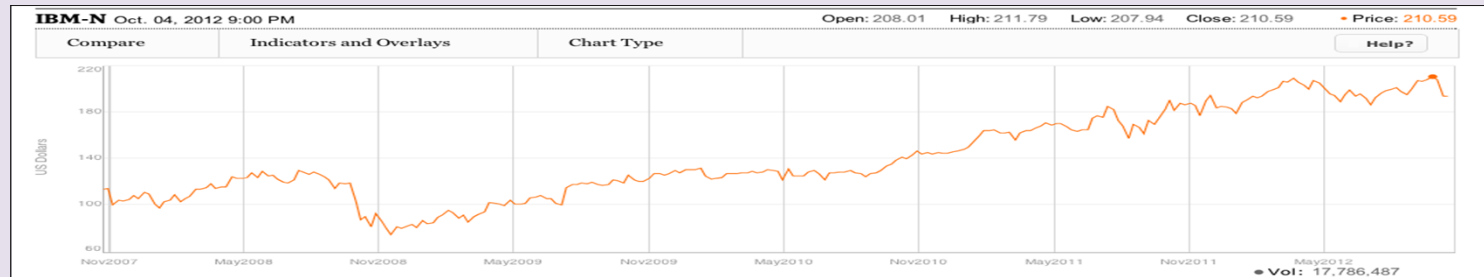 - Team-oriented outlook
  - Expectation of work/life balance

A female-friendly workplace culture has a number of benefits:

Lower turnover

Higher engagement

Improved client relationships

Improved client satisfaction

IBM

IBM-N Oct. 04, 2012 9:00 PM | Open: 208.01 | High: 211.79 | Low: 207.94 | Close: 210.59 | Price: 210.59

- Strong fiscal performance over past 5 years

- Significant female leadership (CEO and 3 BoD members) and support for diversity.

- Management level gender representation just slightly below pool level (24% managers, 28% workforce)

- Comprehensive diversity program, formal mentoring and leadership programs, women's network, fostering gender empowerment in patenting process

- Global Diversity and Inclusion Summit

Price Waterhouse Coopers (privately held)

- Leadership – CEO is vocal proponent and on diversity committee

- Chief Diversity Officer

- Fortune magazine "Best Places to Work for 2012"

- Ranked among the "Top 10 Companies for Working Mothers" by **Working Mother** magazine, 2004-2012

- Commitment to diversity, work/life balance, career coaching, and training

- CEO holds executives responsible for specific diversity-management goals, including being a cross-cultural mentor, diversity recruitment, retention, engagement and promotions in the person's area of responsibility.

Microsoft

- Developed a cohesive Global Diversity & Inclusion strategy linked to the company's business and vision

- Strengthened global perspective and integration of this diversity strategy across the company

- Enhanced leadership engagement with the chief executive officer (CEO) and executive diversity sponsors

- Improved overall quality and accuracy of diversity data in the U.S. and globally

- Increased portfolio of diversity and inclusion training tools and courses

"A strategic objective for Engineers Canada is to have 30 percent of licensed engineers be women by the year 2030 (30 by 2030). Compared to the current rate of 10 percent, this may seem like a lofty goal, but **considering that the overall Canadian workforce is composed of nearly 50 percent women, why are we not seeing or expecting similar numbers in engineering?**"

30x30 Strategy

STRATEGY	GOAL
1. Continue efforts to ensure that the supply of licensed engineers in Canada meets the needs of the Canadian market.	Achieve a national engineering licensure rate of thirty percent women by the year 2030.
2. **Raise the profile and improve the image of the profession.**	Increase the visibility of the engineering profession; highlight career opportunities; emphasize the social and environmental components of engineering.
3. Demonstrate the value of diversity in engineering education and in the workplace.	Promote the business value of gender diversity; build awareness and identify common hurdles that need to be overcome.
4. Help better prepare engineers for a diverse workforce.	Develop, publicize, and improve access to training programs for engineers.
5. **Work with industry on methods to help improve the retention of female engineers in the workforce and diversity in general.**	Build awareness of effective methods; promote organizations that support a diverse workforce.
6. Explore how the engineering curriculum and its delivery could become more attractive to a greater diversity of students and women in particular.	Foster greater flexibility in the delivery of the engineering curriculum; attract a greater diversity of students in engineering programs.
7. Promote information-sharing on mentorship programs and the importance that mentors have in the attraction and retention of women in engineering.	Provide assistance and encourage the use of mentorship programs; encourage public recognition of engineering role models and accomplishments.

The Problem

- There is substantial evidence that increasing diversity results in significant corporate benefits.

- To achieve those benefits, organizations must be willing to *invest* and *change*.

- Engineering faces challenges in terms of the available pool of women. The profession will need to invest in remarketing our brand in order to attract tomorrow's high potential employees.

WIVEST Essentials for Success

Commitment

- Corporate commitment at the highest level – and **every** level – to diversity as a strategy to improve overall performance.

Openness

- Openness in corporate culture to making systemic changes.

Why

- Realization that change will require rethinking of work – "who" and "how" – but it must be grounded in a clearly communicated "why."

What won't work

- Short term approaches – "hire some women"
- Unrealistic goals without metrics and recurring measurements
- Programs without:
  - Sustained leadership from the top
  - Significant investment in recruitment and training
  - Values driven approach
  - Demonstrated outcomes
  - Willingness to rethink work processes and policies
  - Openness to flexibility
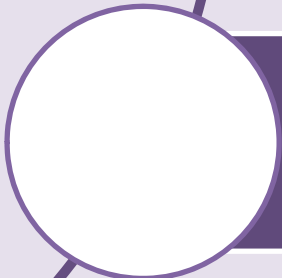 - Corporate culture change as significant outcome

Challenges
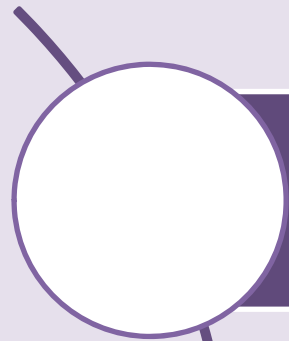
- Hiring Pool
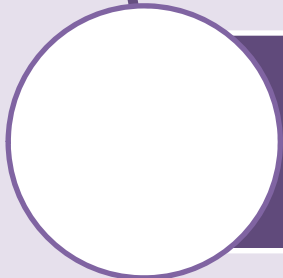
- Corporate Image (female friendly)

- Workplace Climate

Do you remember the first thing I spoke about today (after my name?)

For those who have been in the mining or oil & gas sector, you probably didn't notice.

I'll show you again.

Important to Know

- Washrooms
- Emergency Exit
- Fire Procedure

Culture Change

- If we want a true change in our profession, we need to change the culture.

- 20 years ago, safety wasn't a cultural value. Now it is everywhere. We made it everywhere.

My Challenge to You

Transform our culture.

One word.

One sentence.

One decision at a time.

www.wwest.ca