

# FIVE TRENDS CHANGING OUR WORLD --- ARE WE READY?

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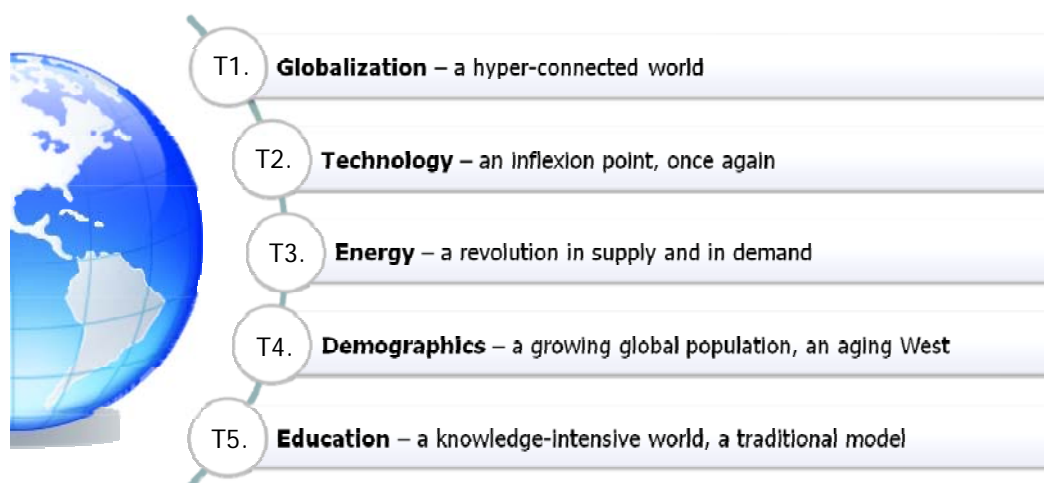
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**Overview:** Five trends changing our world. The reality today is a world that is changing, profoundly. Structural trends are reshaping economies, societies, politics, expectations, and are redefining the “drivers of success”, for everyone. **Change is the new constant.**

## Overview: Five trends changing our world



**THE QUESTION IS: HOW WELL, AND HOW QUICKLY, ARE WE ADAPTING TO IT?**

**Trend 1. The global context is changing, profoundly.** We are entering a new global normal, where emerging economies, led by China, have fundamentally altered the ranking of the world's largest economies, and technology has created a hyper-connected world. The challenge for Canada, to quote the Great One, is diversification: **"to skate to where the puck is going to be, not where it has been."**

## Trend 1. The global context is changing, profoundly

The world's economic centre of gravity is shifting back to Asia --- a 2000-year outward journey; a 75-year return trip



(Locations weighted by GDP in 3D space, projected to nearest point on Earth's surface)

Source McKinsey & Company

### Factoids from a Globalizing World

- World's richest man - Mexican
- World's tallest building - Dubai
- World's largest shopping mall - Beijing
- World's biggest movie industry - Bollywood
- Largest (but not richest) middle class (1+ billion) - in Asia and South America
- Half the world's growth - 440 cities in emerging countries
- China adds a new New York City each year

**Trend 1. A two-speed world has emerged**, with the fast lane dominated by dynamic emerging economies, where growth is driven by globalization, urbanization, demographics and the information revolution. In this two speed world, the advanced economies occupy the slow lane, with declining rates of potential growth, and emerging Asia is the global growth leader. **And, yet, 90% of Canada's trade is still with OECD countries.**

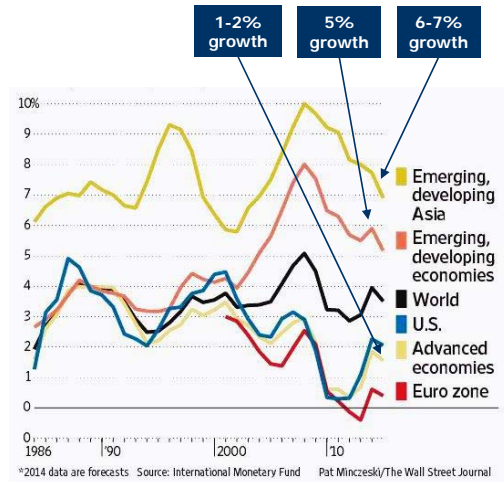
## Trend 1. A two-speed world has emerged

### 2-speed World: By the Numbers

	2012	2013	2014	2015	Avg growth 2012-15
Emerging Economies	5.1	4.7	4.6	5.2	4.9
Emerging Asia	6.7	6.6	6.4	6.7	6.6
China	7.7	7.7	7.4	7.1	7.5
Advanced Economies	1.4	1.3	1.8	2.4	1.7
US	2.8	1.9	1.7	3.0	2.4
EU	-0.7	-0.4	1.1	1.5	0.4
Canada	1.7	2.0	2.2	2.4	2.1

Source: IMF World Economic Outlook Update, July 2014

### 2-Speed World: The Visual



\*2014 data are forecasts Source: International Monetary Fund Pat Minczeski/The Wall Street Journal

**Trend 1. Diversification is good business.** Canada's exposure to emerging market economies is relatively small, 10% of our trade, compared to over 40% for the U.S. --- With simply the same exposure to emerging markets as the U.S., Canadian exports would be \$60 billion higher annually. And with a new Asian middle class of nearly 1 billion, and likely to double again within a decade, **Canada has huge potential serving this new Asian middle class market.**

**AGRICULTURE & FOOD** – new middle class consumers want higher protein, higher value added, different foods.

**TOURISM** – 110 M in 2015 in China alone; spending more per capita than U.S.

**HEALTH CARE** – new middle class want better health care, and more health options.

**FINANCIAL SERVICES** – Rmb clearing, trade finance, wealth management, asset management, advice --- the Canadian brand is valuable; Asian demands huge.

**EDUCATION** – estimates of a 1 B Asian youth to educate at any given time.

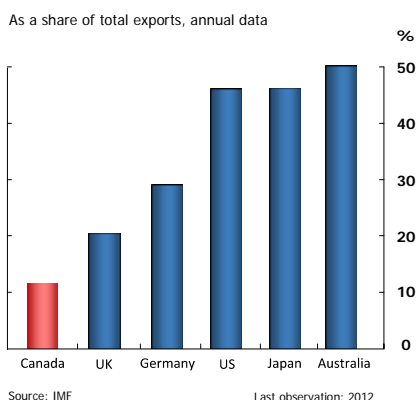
**WATER** – emerging economies need water technologies for production and for living.

**INFRASTRUCTURE** – \$27 T expected infrastructure spend in emerging Asia in next 15 years.

**ENERGY AND NATURAL RESOURCES** – most of incremental global energy demand is from Asia.

## Trend 1. Diversification is good business

**Chart 10: Canada's exposure to emerging-market economies is relatively small**



### Opportunities Created by New Asian Middle Class



**Trend 2. Technology is at an inflexion point, again** --- driven by big data, big computing power, big analytics and adaptive learning. It will drive competitiveness, affect comparative advantage, transform the nature of work, alter who does the work --- in many sectors, in many unexpected ways. The “Second Machine Age”, according to Eric Schmidt of Google, will be **a humans versus machine competition**.

## Trend 2. Technology is at an inflexion point, again

### THE COMING “DISRUPTORS”



Mobile Internet



Automation of knowledge work



The Internet of things



Cloud technology



Advanced robotics



Autonomous and near-autonomous vehicles



Next-generation genomics



Energy storage



3D printing



Advanced oil and gas exploration and recovery

### THE LOOMING “BIG QUESTIONS”



Do we want to be the disruptors or the disrupted?

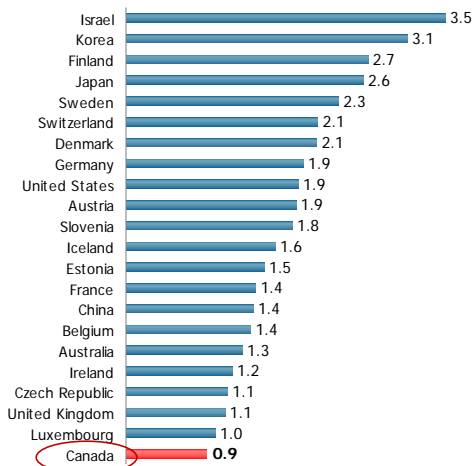
Do we want to be the early adaptors or the late followers?

Do we want to be the ambitious or the complacent?

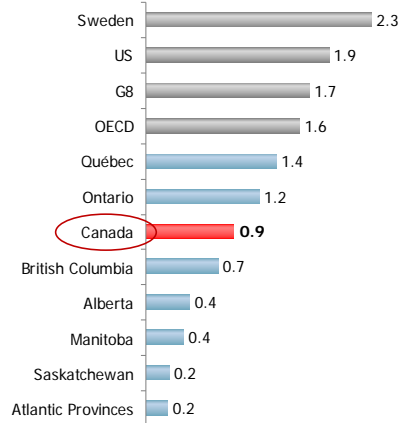
**Trend 2. The new competitiveness imperative is innovation.** Higher wage, low scale countries, and firms cannot compete on standardized products and generic processes. But, they can compete and win with innovative products and services, using leading edge processes, and tapping value-added markets. **The problem: Canadian businesses are lagging badly in innovation, and Canada lacks an innovation strategy.**

## Trend 2. The new competitiveness imperative is innovation

**Canadian business spending on R&D ranks 22<sup>nd</sup> among OECD countries (% of GDP)**



**Business spending on R&D is only half the U.S., one third of Sweden --- and no Canadian province approaches the OECD average**  
(business expenditure on R&D as a percentage of provincial GDP)



Source: OECD, Main Science and Technology Indicators Database, [www.oecd.org/sti/msti.htm](http://www.oecd.org/sti/msti.htm), June 2013.

Source: Institut de la statistique du Québec, [http://www.stat.gouv.qc.ca/statistiques/science-technologie-innovation/recherche-developpement/secteur-entreprises/dirde\\_pib.htm](http://www.stat.gouv.qc.ca/statistiques/science-technologie-innovation/recherche-developpement/secteur-entreprises/dirde_pib.htm)

**Trend 2. Ecosystems matter for innovation success, both for start ups and established firms.** Start ups are complex, requiring entrepreneurship, mentors, incubators, angel investors, and VCs. Corporate innovation requires combining customer/employee insights, creative/technical capacity, and corporate leadership. **The objective is a virtuous circle: “if research is turning money into knowledge; and innovation is turning knowledge into money, then we need to be excellent at both.”**

**1. MARKET** - are there opportunities, based on consumer needs (existing or prospective customers)?

**2. COMPETITIVE INTENSITY** - is there competition so that innovation helps firms survive and prosper?

**3. CLUSTER** - is there cutting edge knowledge, skilled professional, experience around the firm?

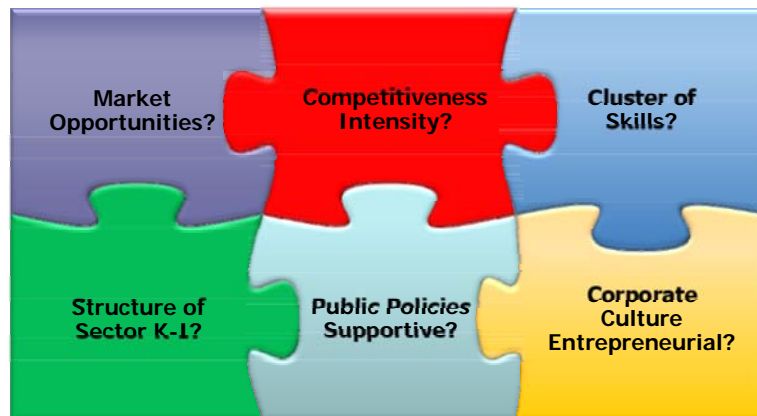
**4. STRUCTURE** - is the firm in a sector that is knowledge-intensive?

**5. PUBLIC POLICIES** - are legal and regulatory policies conducive to innovation?

**6. CORPORATE CULTURE** - is it risk averse? is it ambitious? does it play defence or offence?

Trend 2. Ecosystems matter for innovation success, both for start ups and established firms, and Canada's is a work in progress

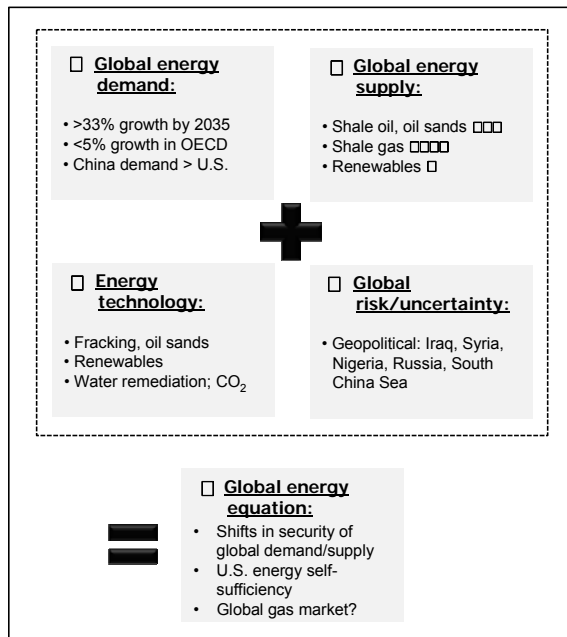
### Core Elements for Successful and Sustained Innovation





**Trend 3. There is a global energy revolution underway.** Globalization is shifting **energy demand** from the OECD to the “unconventionals”: the rapidly growing emerging economies, particularly in Asia. Technology is shifting **energy supply** to “unconventional” sources: oil sands, shale oil, shale gas, etc. With a single market for our energy exports (U.S.) , and the U.S. moving rapidly to net energy self-sufficiency, **this is all creating an “energy security conundrum” for Canada.**

## Trend 3. A global energy revolution is underway --- and it is creating an “energy security conundrum” for Canada



### CANADA'S ENERGY SECURITY CONUNDRUM

US Hydrocarbon Supply □

US Hydrocarbon Demand □

+

100% reliance on US market for gas, oil and electricity exports

+

Increasing Canadian unconventional supply capacity: oil sands + shale gas

=

Declining Canadian security of energy demand



**Trend 3. Canada can be a global energy player, provided we diversify our markets and change our approaches:** energy export market diversification is pivotal, the new infrastructure to reach these markets is essential, and understanding the “multiple licensing imperative” to realize all this is key. We must demonstrate it is in the public interest not just private interest. **In short, we need to create a shared sense of energy purpose to be a global player.**

#### Commercial Licence

Must make economic sense to markets on a risk-adjusted basis, including labour and other costs, financing, revenues, risks and price uncertainty.

**Global market diversification improves the economics.**

#### Policy Licence

Must make policy and regulatory sense to governments, including production facilities, pipelines, port infrastructure, and foreign investment. **Jobs, incomes, growth and the public interest matter.**

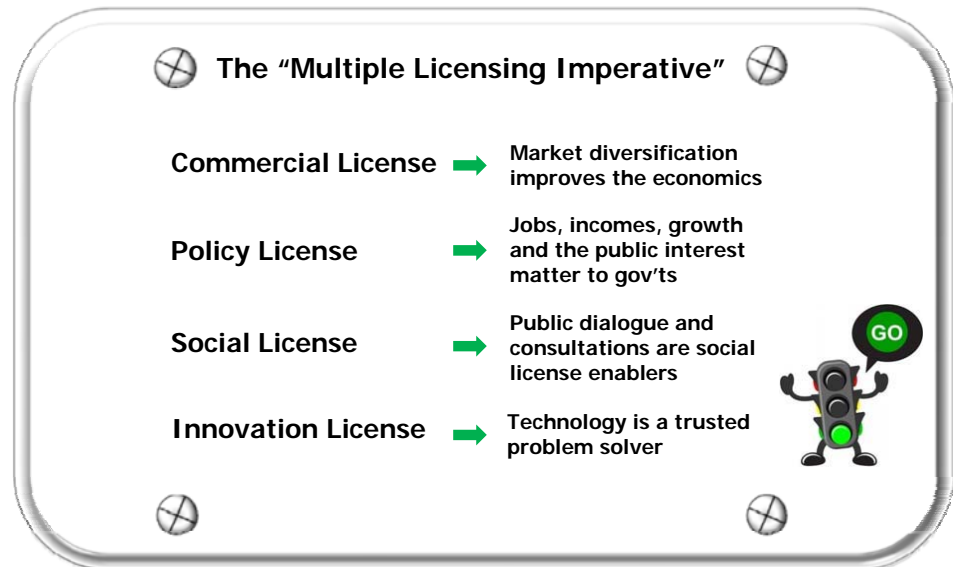
#### Social Licence

Must make community and public sense, when complex projects raise environmental issues, affect communities directly, or impact indigenous lands or rights. **Public dialogue and consultations are social license enablers.**

#### Innovation Licence

Must use technology to improve the environmental impacts of unconventional oil and gas production and distribution. **Technology is a trusted problem solver.**

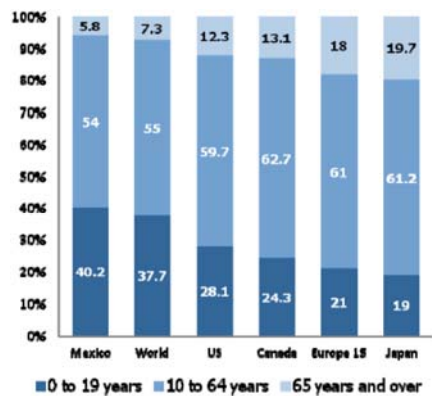
Trend 3. Canada can be a global energy player, provided we diversify our market and change our approaches



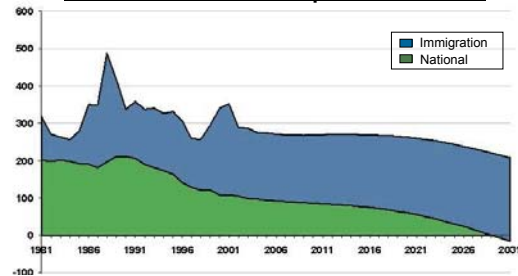
**Trend 4. Exactly how old are we?** Canada has proportionally fewer seniors and more young people in its population than the Europe 15 and Japan --- that's the good news, but more seniors and fewer young people compared to the US, Mexico, Asia and the rest of the emerging economies. Across Canada, **Nova Scotia and New Brunswick stand out with the oldest populations.**

## Trend 4. Exactly how old are we?

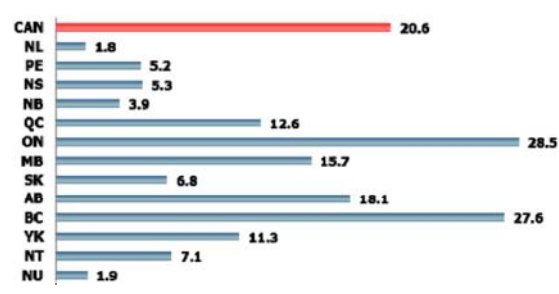
**Distribution by three main age cohorts: of the selected countries, 2005**



**Canadian Sources of Population Growth**



**Foreign-Born Population, by Region, 2011**



Data sources:  
Statistics Canada,  
Demography  
Division; US Census  
Bureau; and United  
Nations, World  
Population Prospects  
(The 2006 Revision).  
Figure source:  
Statistics Canada,  
2007, Canadian  
Demographics at a  
Glance, Catalogue  
number 91-003-  
XWE: Stats Canada  
The Daily, Monday  
Nov 25, 2013

**Trend 4. Demographics affect simply everything.** The consequences of aging demographics are pervasive: Canadian potential growth is slowing from 3% to 2% annually due equally to slowing labour force growth and slowing productivity growth, with huge cumulative impacts. Public finances will be strained from fewer revenues and more age-related expenditures; less demand for education seats and more demand for hospital beds; housing needs shift; pensions become a greater income source; savings need increase; and political priorities change. **Everything rebalances.**

## Trend 4. Demographics affect simply everything

### Aging demographics

- Proportion of population working age □
- Labour force growth □

### Consequences of aging

- Potential growth □
- Fiscal balance □
- Education needs □
- Health, pension costs □
- Savings □?
- Housing □□

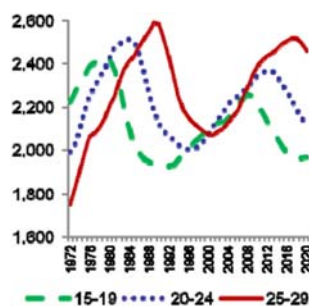


**Trend 5. Education is so much at the epicentre of demographics, technology and globalization**, as well as how economies and societies make the shift to knowledge intensive work, that it becomes a quasi-trend on its own. Education is confronted by the vortexes of changing supply (declining enrollments), changing demand (different skill sets) and changing processes (technology led my MOOCs).

## Trend 5. Education is so much at the epicentre of demographics, technology and globalization

Enrolment growth slowing-a need to attract an older demographic and international students

Canadian population aged 15 to 29  
1972-2020 (000)



Globalization of education  
--- and Canada is lagging

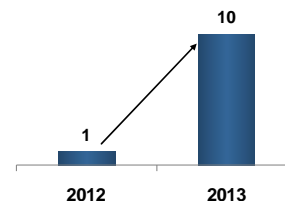
Intl student  
market share  
(est.) Percent

Intl  
students  
Number

	United States	18	723,000
	Australia	13	557,000
	United Kingdom	10	428,000
	Canada	5	240,000

A changing delivery model  
--- MOOCs and hybrids

Student enrolment in MOOCs  
(millions)



200+ universities. 1200+ courses.  
1300+ instructors. 10 million students.

Source: Statistics Canada (historical) and HRSDC 2011 COPS Reference Scenario (projections).

SOURCE: "International Education: A Key Driver of Canada's Future Prosperity," Advisory Panel on Canada's International Education Strategy, August 2012; Government of Quebec

Source: MOOC News and Reviews, November 25, 2013. <http://moochnewsandreviews.com/what-do-we-know-about-mooc-students-so-far/>

**Trend 5. Tsunami of forces reshaping higher education.** The status quo is not a viable proposition for higher education today, and even less so tomorrow. Society wants inclusivity, excellence, differentiation and improved outcomes; education systems too often want more of the same. **Advantage: change!**

1. **Revenues from traditional sources falling**
  - Declining enrollment growth, even levels (demographics)
  - Declining gov't funding (fiscal situations)
  - Variable philanthropy (value proposition)
2. **Demands for higher return from education rising**
  - Differentiation (co-op, areas of specialization)
  - Skill sets changing (entrepreneurship, resiliency, team work, technical literacy...)
3. **Public and gov't demands for more transparency about education performance and student outcomes increasing**
  - Research and teaching benchmarks
  - Employment, income outcomes and education costs
4. **New business models of higher education**
  - Co-op, dual vocational, "applied" colleges
  - MOOCs and hybrids
5. **Globalization of education**
  - Competitive global marketplace for students, faculty, research (rankings matter)
6. **Education and income inequality/social mobility**
  - Inclusivity and excellence affect equality outcomes

## Trend 5. Tsunami of forces reshaping higher education



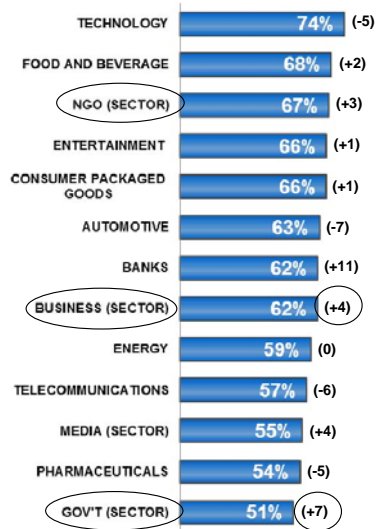
1. Revenues from traditional sources --- falling
2. Demands for higher return from education --- rising
3. Public and gov't demands for more transparency about education performance and student outcomes --- increasing
4. New business models of higher education --- arriving
5. Globalization of education --- increasing
6. Education and income inequality/social mobility --- linking

**What does it all mean for managing? --- it affects trust.** And trust matters for governing, both governments and corporations, and for leading change. The Edelman Global Trust Barometer shows a decline in the public's trust over the last decade. And this matters when introducing new products, new policies, new approaches, new innovations. The public trusts the institutions of government, business, and the media more than the leaders of these entities. **Canada has more trust in business and government than the global norm.**

## What does it all mean for managing --- it affects trust, which matters for governing, for business and for leading change

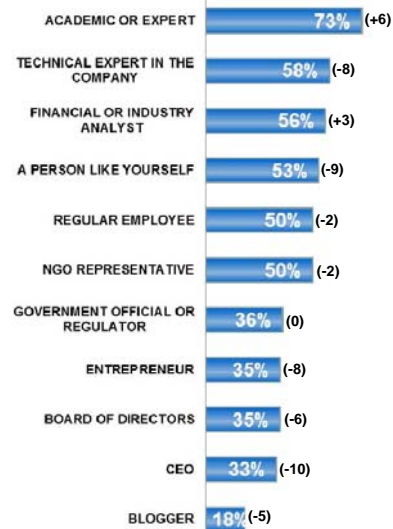
### Trust in industries, 2014 Canada

(Canada vs global rating)



### Credibility of spokesperson, Canada 2014

(Canada vs global rating)



Source: Edelman Trust Barometer 2014

**What does it all mean for risk management? --- interconnectedness!** For governments or corporations or investors in a hyper-connected world, risks are highly inter-connected and can generate systemic impacts, not just local ones. In the new reality, where “your risk is my risk”, strong and effective risk management and good governance create a real competitive advantage for economies and companies.

## What does it all mean for risk management by governments, corporations and investors? --- interconnectedness!

### WEF's GLOBAL RISK-MAP: TOP TEN GLOBAL RISKS (2014)

- |   |   |  |
|---|---|--|
| 1. Fiscal crisis in key economies                   | ➡ | Look to Europe                         |
| 2. High structural unemployment                     | ➡ | Stretching the 'social contract'       |
| 3. Water crises                                     | ➡ | From California to China to India      |
| 4. Severe income inequality                         | ➡ | Questioning the 'social contract'      |
| 5. Failure to climate change adaptation/mitigation  | ➡ | See 6.                                 |
| 6. Extreme weather events increasing                | ➡ | Watch the news!                        |
| 7. Global governance failure                        | ➡ | Growing fragmentation                  |
| 8. Food crises                                      | ➡ | See 3, 6, and 10.                      |
| 9. Failure of major financial institution/mechanism | ➡ | Aftershocks of global financial crisis |
| 10. Political instability                           | ➡ | Gridlock or breakdown or conflict      |





**What does it all mean for governing? --- a state of flux!** We live in a world where markets are global, governing and regulating is national, information through Google is ubiquitous, short-termism is endemic, and public trust is declining. **The result: a shifting context for governing --- whether it be global, national or corporate.**

## What does it all mean for governing? --- a significantly shifting context

### **Globalization and Sovereignty**



Business, finance, mass culture, information, higher education know few borders, **but** borders know the limits of national sovereignty.

### **Communications, Policy and Vision**



In a Google world, information is ubiquitous but analysis is not; in a Twitter world, opinions are instantaneous but knowledge is not; in a Facebook world, everyone is connected but who leads?

### **Technology and Governing**



Revolutions in communications technologies shifting how government can interact with citizens (and vice versa), and how it can deliver services.

### **Aging and Policy Preferences**



Shift in preferences to age-related public policies and services.

### **Crises and Public Trust**



Crises reshape public opinion, create context for change - Enron, Exxon Valdez, financial crisis led to decline in trust, demand for regulation.

### **Checks and Balances**



Implicit in Westminster system - but, with centralization, short-termism, social media, uncertainty in relationships between public services and governments, are they working as intended?

**What does it all mean for economic and societal success?** The paradigm is changing. High wage, high income, lower scale economies and societies have to be entrepreneurial and innovation-intensive, with a willingness to embrace change. The core drivers of competitiveness include: innovation, entrepreneurship, human capital and institutional frameworks. Canada does reasonably well, **BUT, the question for Canadians in a hyper-competitive world is: “is being “pretty good”, good enough?”**

## What does it all mean for economic and societal success? --- the paradigm is changing

Rankings	Global Competitiveness Index (WEF)	Innovation Capacity (WEF)	Productivity GDP per employed worker, current prices, USD (OECD)	Soundness of Financial Systems (WEF)	Net Debt to GDP, 2013 (IMF) (lowest to highest)	Tertiary Education, % of Population (OECD)	K-12 Pisa Results: Math (OECD)	Number of Universities in Top 100 (Times Higher Education)	Ranking of Cities – EIU Global Liveability (# of cities in top 10; ties settled based on rankings)	Institutional Strength and Resilience, OECD Countries (World Bank)
#1	Switzerland	Switzerland	Luxembourg	Canada	Norway	Canada	China (Shanghai)	United States	Australia	Finland
#2	Singapore	Finland	Norway	New Zealand	Finland	Japan	Singapore	United Kingdom	Canada	New Zealand
#3	Finland	Germany	US	South Africa	Sweden	United States	Hong Kong	Germany	Austria	Sweden
#4	Germany	Israel	Ireland	Hong Kong	Estonia	New Zealand	Taipei	Australia	Finland	Switzerland
#5	United States	United States	Belgium	Singapore	Denmark	Finland	Korea	Canada	New Zealand	Norway
Canada	14 <sup>th</sup>	27 <sup>th</sup>	17 <sup>th</sup>	1 <sup>st</sup>	12 <sup>th</sup>	1 <sup>st</sup>	13 <sup>th</sup>	5 <sup>th</sup>	2 <sup>nd</sup>	9 <sup>th</sup>
United States	5 <sup>th</sup>	5 <sup>th</sup>	3 <sup>rd</sup>	58 <sup>th</sup>	18 <sup>th</sup>	3 <sup>rd</sup>	36 <sup>th</sup>	1 <sup>st</sup>	n/a	17 <sup>th</sup>

**In today's competitive world, the question for Canadians is: is being “pretty good”, good enough?**