TBM Take Back Manufacturing
WWW.SME-TBM.ORG

sme Making the future. Together.™

Reshoring

&

Our Manufacturing Sectors Recovery.

Nigel Southway

NIGEL SOUTHWAY

www.nigelsouthway.com

45 years Broad Business and Manufacturing Experience

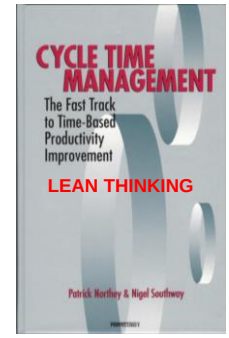
British Engineering Apprentice… ….Aerospace/Electronics (1966)

Manufacturing Engineer ….BSc EEE C-Eng (1972)

MOTOROLA Director Manufacturing Eng. / Lean and Six Sigma Implementation (1980, s)

Founder of CTM Inc. and NEXUS Consulting Services

AUTHOR: CYCLE TIME MANAGEMENT… ***Fast Track to Productivity Improvement*** **(1992)**



Consult on LEAN thinking to many organizations in different industry sectors on a global basis.

Automotive, Aerospace, Avionics, High-tech and consumer Electronics, Pharmaceuticals, Food, Beverage. Consumer Products and Appliances, Steel, Fabrication, Mining, Resource extraction equipment, Construction, Off-road equipment, Service and Financial Industries.

Assist many Global Sourcing programs and Joint Ventures (2004 onward)

Society Manufacturing Engineers …Chair 2012/13 Toronto

LEAN Certification advisor for SME/AME/ASQ

Lecturing at Sheridan on Quality Management/LEAN and Sustainable Supply Chain Management

Advocate for the Take Back Manufacturing Forum / Canadian *Reshoring initiative*.

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Reshoring & Our Manufacturing Sectors Recovery.

GLOBALIZED MANUFACTURING

CANADA MANUFACTURING

The future of Manufacturing in Ontario's economy.

CANADA MANUFACTURING

The future of Manufacturing in Ontario's economy.

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Since Mid 2011

www.SME-TBM.org

A Forum Dedicated to Restoring our Manufacturing Sectors.

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TBM...Our Ultimate Goal

STRONG Manufacturing in North America… AGAIN!

Government,
Education organizations
Industry leaders
} **Work together ….**

ROADMAP……..Recover our future industrial capability …… and therefore our future prosperity.

Society of Manufacturing Engineers

Presentations....

TAKE BACK MANUFACTURING

Raising the Awareness

CMTS Toronto Canada October 2011

SME Annual Conference Cleveland USA June 2012

Many Society and Association events in 2012/13

TBM

M

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Taking back manufacturing

A new plan for economic prosperity

BY JOE TERRETT, EDITOR ON DECEMBER 28, 2011 3:56PM

Canadian PLANT http://www.canadianmanufacturing.com/fabrication/production/taking-back-manufacturing-51066

Email Print Text Size

Share or bookmark this post:

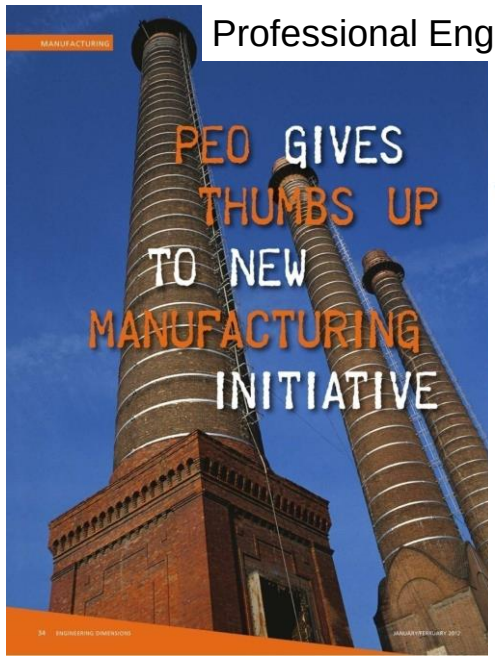
The TBM roadmap addresses knowledge transfer to incoming generations as baby boomers retire. Photo:thinkstock

There is much to gain from the opportunities offered by a global economy, but the downside has been the loss of North American manufacturing capacity and jobs.

In 1999, manufacturing generated 19.2% of the country's GDP and was the biggest employer. Today it's good for about 13% and has slipped to third-place as an employer behind trade, and health care/social assistance.

More than 322,000 jobs were lost between 2004 and 2008, according to Statistics Canada, and the erosion continues. In October another 48,000 jobs (mostly in Ontario) were lost out of a national total of 54,000.

Professional Engineers Ontario



THE ENGINEERING REGULATOR HAS JOINED FORCES WITH OTHER GROUPS IN AN AMBITIOUS CAMPAIGN TO WIN BACK LOST MANUFACTURING OPPORTUNITIES TO ONTARIO.

By Michael Mastromattteo

Ontario's engineering regulator is throwing its weight behind a bold initiative aimed at bolstering Ontario's manufacturing sector.

Take Back Manufacturing (TBM) is a campaign launched by the Toronto chapter of the Society of Manufacturing Engineers (SME), which it describes as a multi-faceted effort to persuade government, the public, industry and other stakeholders of manufacturing's significance to Ontario's long-term prosperity and economic competitiveness.

The ultimate goal of TBM is to implement economic policy changes to enable the recovery of a declining manufacturing sector. SME believes the trend in the last two decades to under-capitalize local manufacturing technology, reduce capability and related education, and allow extensive migration of production to offshore sources has harmed Ontario and the rest of the country by leading to severely unbalanced import-export trade that is counterproductive to the Canadian economy as a whole.

PEO council endorsed PEO's support of the TBM initiative at its September 2011 meeting on the basis that migration of Ontario's manufacturing sector to offshore locations has taken a toll on the engineering profession, including the technical deskilling of members and the lack of the employment opportunities engineering graduates need to become licensed.

The Ontario Society of Professional Engineers (OSPE) also supports TBM.

Nigel Southway, operations manager for TBM, says that while the problems have been identified, there has been little action to shore up the manufacturing sector.

"The goal of TBM is to raise awareness of this issue and ensure that industry, government and the educating bodies get it together to correct the decline and support a sustained recovery," Southway told *Engineering Dimensions* November 14. "It's clear that the globalized economic picture now looks very bleak for emerged economies and this has clearly proved our point that a TBM approach is the only way to reverse this picture."

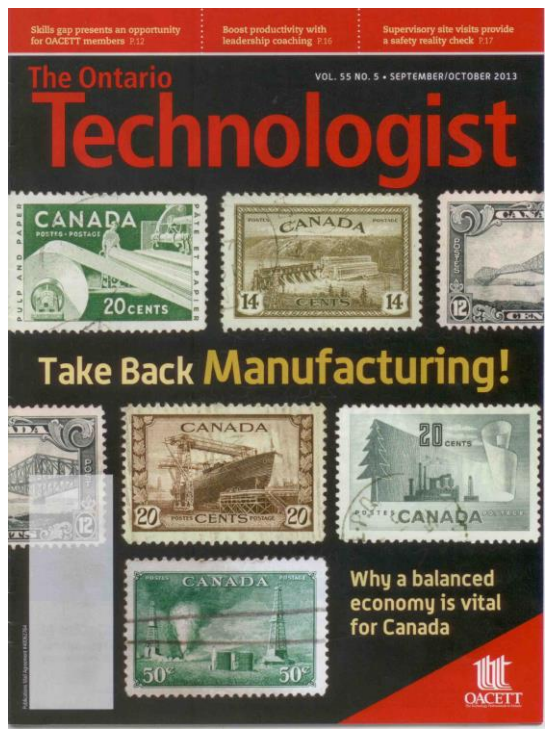
TBM includes a full roadmap of activities, such as publicity, crafting its message to specific audiences, and a skills development component, aimed at promoting new entrants to the field through four career stages: trade, technician, technologist and engineer.

The initiative emphasizes reducing imports and bringing manufacturing home (reshoring), or rebuilding local capacity to better support local demand. It also seeks to develop "the correct infrastructure" by way of education and training. In fact, phase 3 of TBM includes such proposals as a joint apprenticeship and training board, a professional retraining program, career development activities, and a technology development effort to ensure the province can sustain the manufacturing opportunities starting up in or flowing back to Ontario.

Southway says talk of Ontario as a leader in innovation or the epicentre of a resource-based or service economy is meaningless without a solid, sustainable manufacturing base.

"A lot of nonsense has been talked about innovation as a critical imperative for our collective success," he says, "but without manufacturing, how is it going to work?"

http://sme-tbm.org/app/download/5809147904/PEO+TBM+article.pdf



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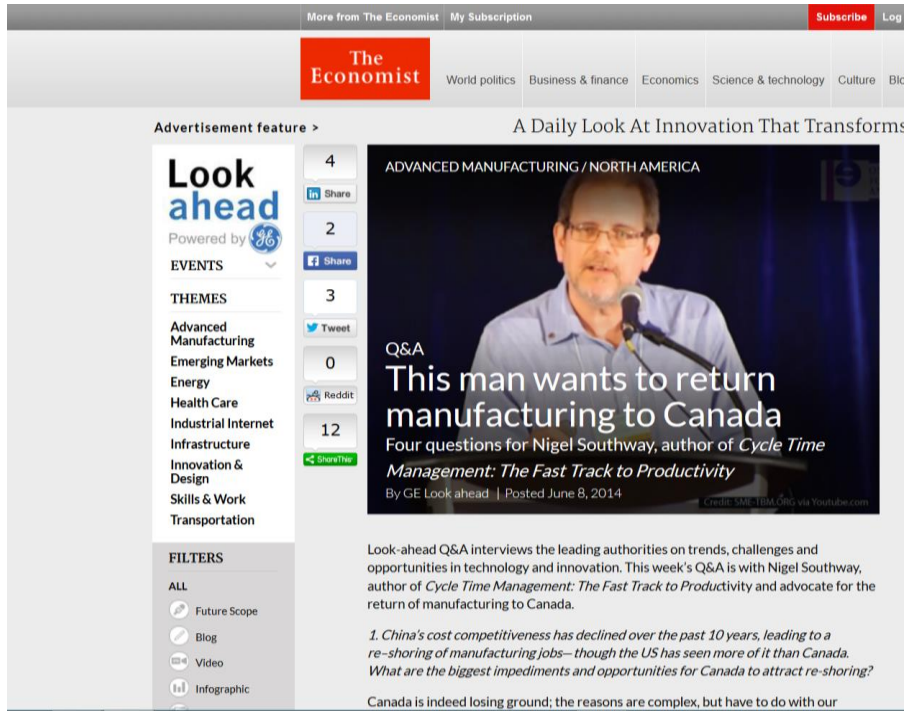

BNN **BUSINESS NEWS NETWORK**

What can Canada learn from German Manufacturing?

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WHY?..Take Back Manufacturing

FOR OUR KIDS!!

15

This is NOT a game!!!...

MANUFACTURING

Sher-Wood follows rivals to China, closes Quebec hockey stick plant

BERTRAND MAROTTE MONTREAL

Intense global competition is laying low an industry dear to the heart of every Canadian who ever grabbed a hockey stick and laced up a pair of skates, or scrambled off the road when a buddy yelled "car."

Sher-Wood Hockey Inc., Canada's storied hockey stick manufacturer, is leaving home ice for good at the end of this year, moving the last of its stick production to China to slash costs.

Thursday's decision by Sher-Wood is the latest blow to what little is left of Canada's once thriving hockey stick manufacturing industry and [illegible] how vulnerable [illegible] are to glob[illegible]

The shift is the culmination of years of [illegible] for Sher-brooke-[illegible]ed Sher-Wood, the [illegible] old company's reputation [illegible] highly regarded wooden sticks loved by pros and [illegible] alike but that now turns out mostly composites.

The company said it has no choice but to ship out the remaining part of its production of composite sticks to China, where it has over the years steadily been moving its facilities. "This is a difficult decision. We have had a presence [in Quebec's Eastern Townships] for more than 60 years," Sher-Wood's marketing and product development director Eric Rodrigue said.

Hockey, Page 5

OFF-SHORED

Sher-Wood's dwindling wooden-stick production was outsourced years ago to a Quebec company. Sher-Wood's composite sticks will be made in China. SHER-WOOD

Our Kids will think we don't *make things!!!*

16

GLOBALIZED

MANUFACTURING

Moved Off-shore…..
For low cost labor rates

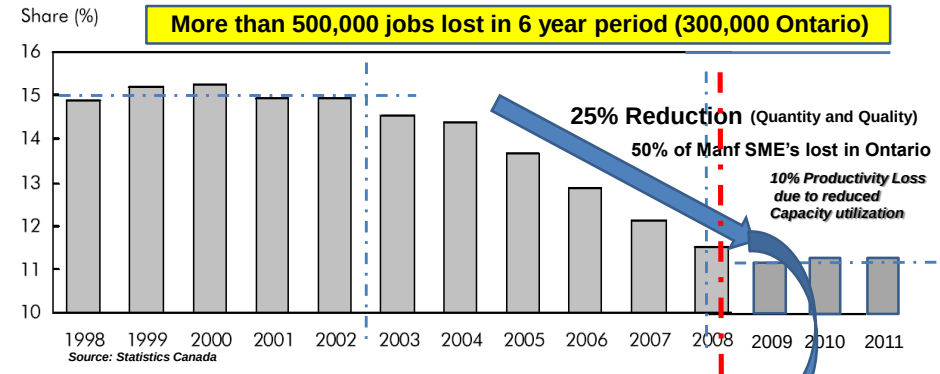
Un-controlled trade….. "herd behavior"

15% Reduction in Manufacturing Intensity in the last decade

TBM

CANADA

Manufacturing's share of employment has fallen sharply since the turn of the century



1,000,000 Young Canadians Now un or under employed!!

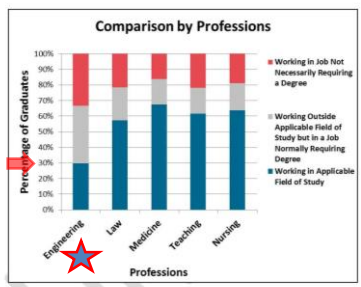
Redeployed to part time and lower paying service jobs

Yet ….we have a skill shortage??? (NOT a labor shortage)

PEO Report on Engineering Employment

Figure 1

Comparison of Ontario Employed Holders of a Bachelor's Degree or Higher and Type of Job in Selected Regulated Professions Requiring a Degree



Source: Statistic Canada, 2011 National Household Survey

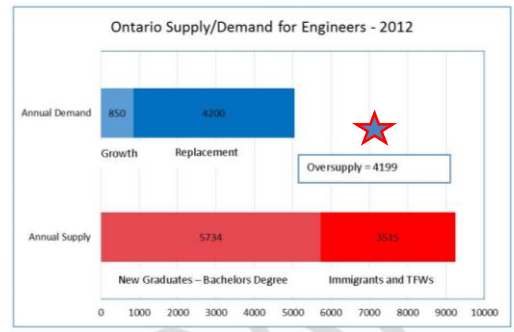
Data not available but we suspect over-supply average is worse across all technical grades

Professional Employment outlook

Professionals overall ok

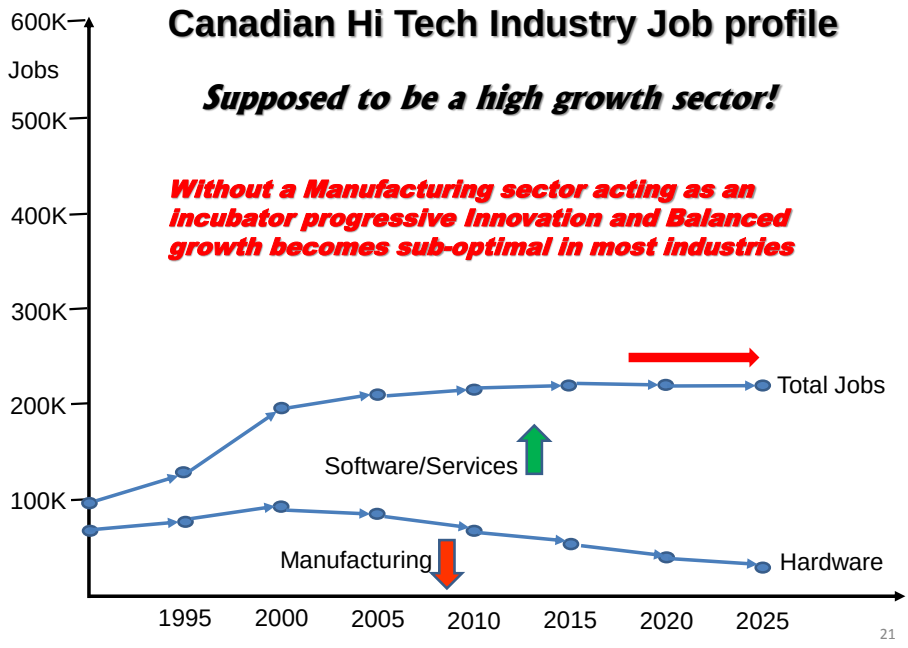
Engineering NOT so much ok

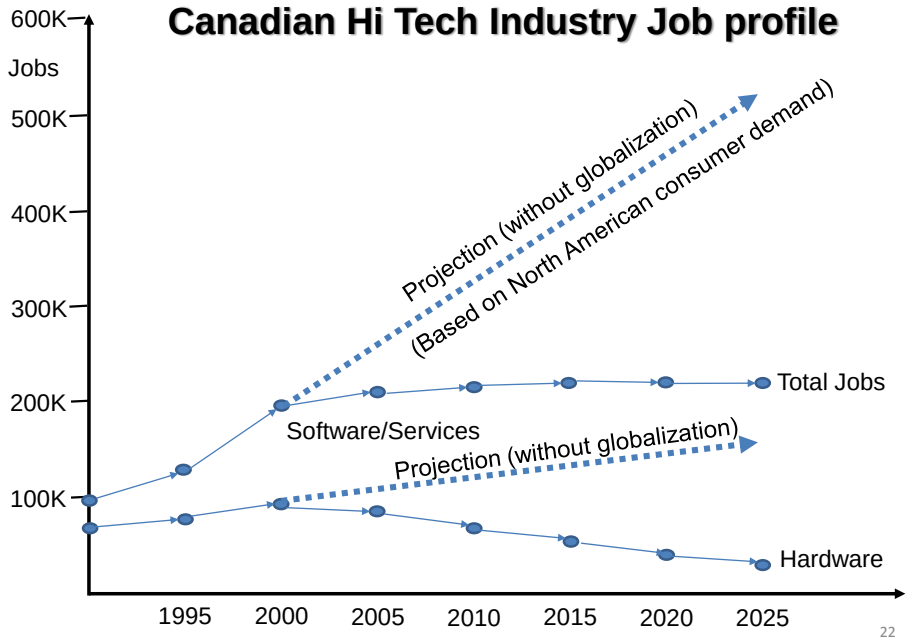
Figure 5



Source: *The Engineering Labour Market in Canada: Projections to 2020*, Engineers Canada.

Engineering needs Manufacturing In all forms to thrive

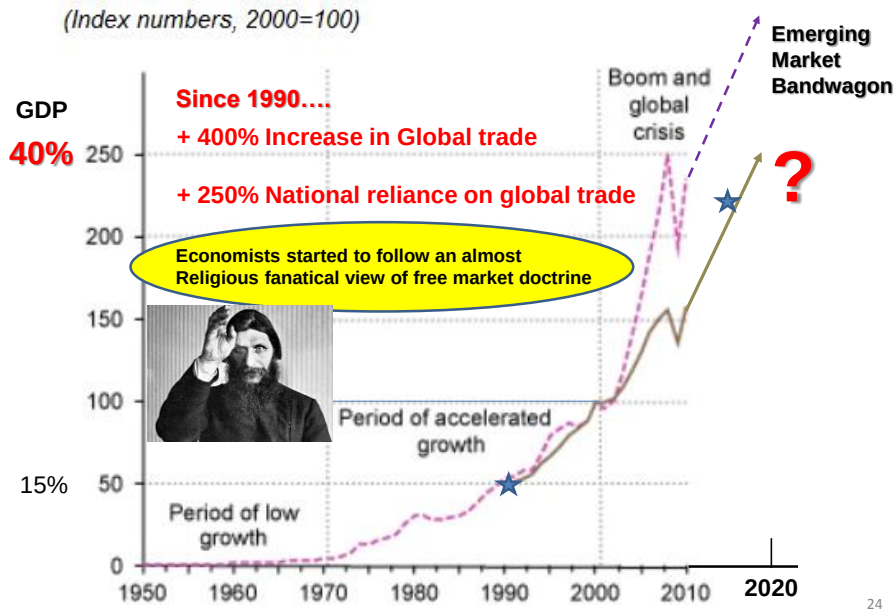

Canadian Hi Tech Industry Job profile
Supposed to be a high growth sector!
Without a Manufacturing sector acting as an incubator progressive innovation and Balanced growth becomes sub-optimal in most industries
600K
Jobs
500K
400K
300K
200K
100K
Total Jobs
Software/Services
Manufacturing
Hardware
1995
2000
2005
2010
2015
2020
2025
21


Canadian Hi Tech Industry Job profile
600K
Jobs
500K
400K
300K
200K
100K
Projection (without globalization)
(Based on North American consumer demand)
Total Jobs
Software/Services
Projection (without globalization)
Hardware
1995
2000
2005
2010
2015
2020
2025
22

What happened?

23

GLOBAL TRADE GROWTH Versus GDP



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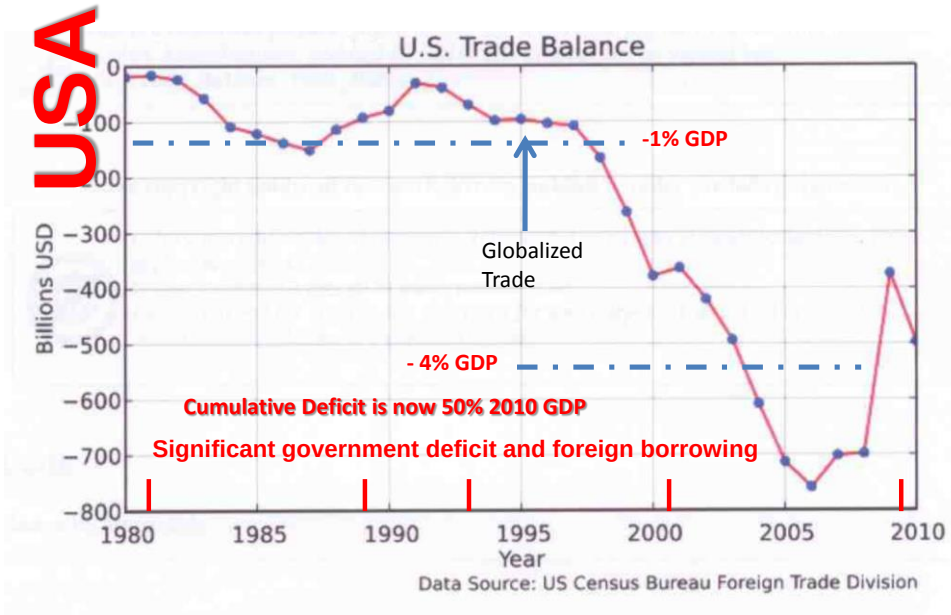
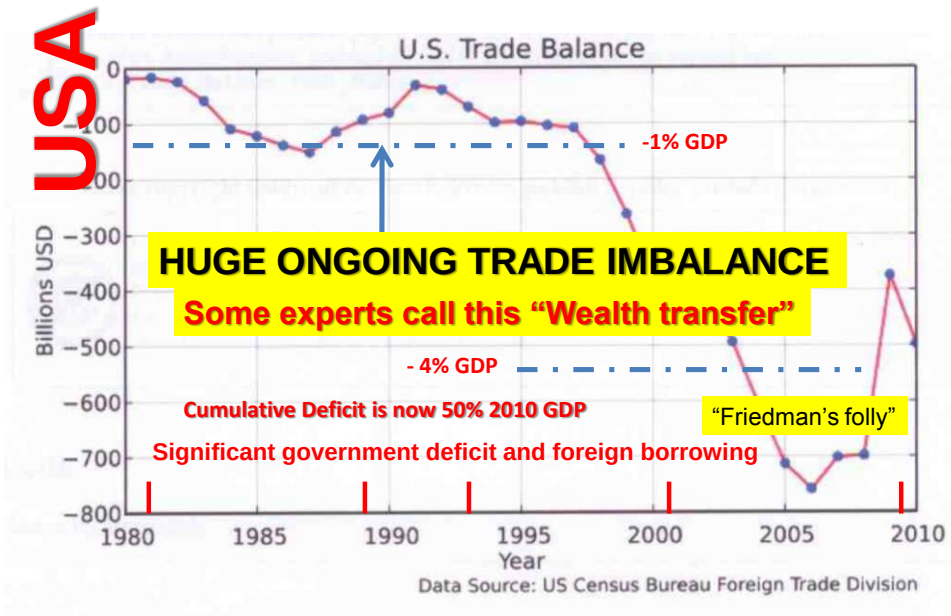


(US GDP 2010=14000B)

25



(US GDP 2010=14000B)

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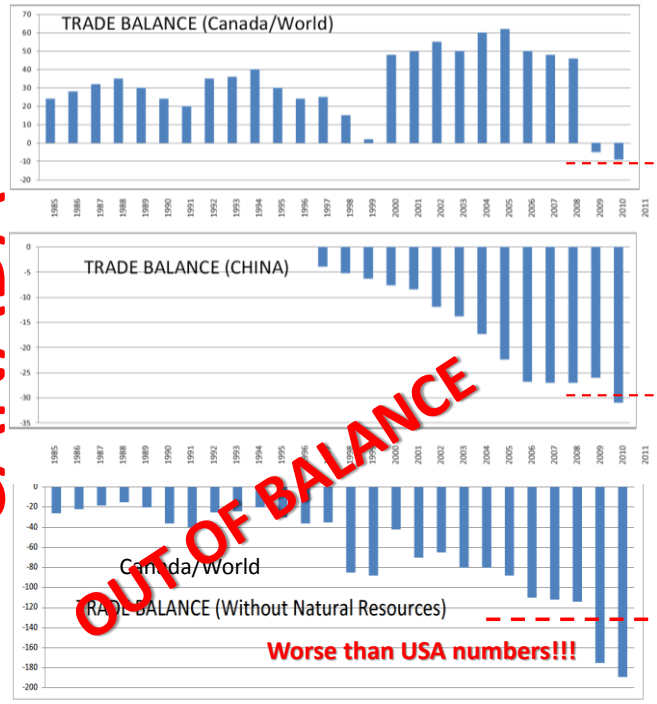
CANADA



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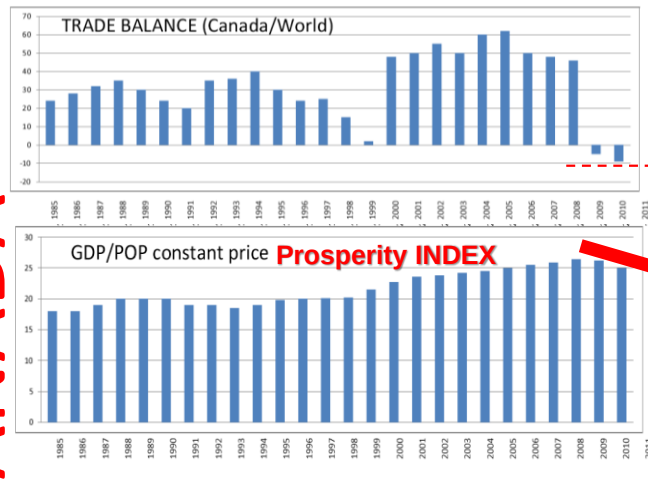
CANADA



Emerging Market Resource Demand Dependent

Hi Under-Employment
Temporary jobs
Hi Youth unemployment
Hi Debt in all forms
Wealth Inequality
Unstable resource sector
Flat-line economy
Declining Manufacturing in all sectors.

We have lost our BALANCE to remain Productive.

It is not that we are less productive.. but more about having idle capacity!

28

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OUR ECONOMY NEEDS MANUFACTURING!

It is VERY obvious that we need a Balanced Economy

(Resources/Services/Manufacturing)

Without an Integrated Manufacturing sector acting as an incubator progressive Innovation and Balanced growth becomes sub-optimal in most industries

29

Citizen awareness

30

So what's next?

We need a critical mass of awareness by every-one

to force action taking to recover our future……

A glimmer of hope !

THE GAME CHANGER!

31

GLOBALIZED

MANUFACTURING

We Question its future Sustainability

GLOBALIZED

? ?

MANUFACTURING

TBM Positional Paper on the Waste in a Global Supply Chain

Waste of VERY Expensive Bunker Fuel

Much Non-Value-Adding Inventory

Waste of VERY Expensive Bunker Fuel

VERY LARGE CARBON FOOTPRINT

This low grade bunker fuel is used by the worlds 90,000 cargo ships

A *single* large container ship emits pollutants equivalent to 50 million cars.

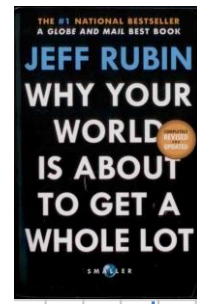
Total container ship pollution is 6 times that of the TOTAL cars in world

2,000 times the amount of sulfur compared to diesel automobiles.

Container ships account for 90% of global trade by volume.

Our Economies will be jeopardized by this global warming enabler

35



Crude Oil Prices in USDs

We will not run out of Oil…

but ….

We will run out of Oil we can afford to burn!!

Note: localized supply of energy will not change this outlook

36

The Economist **CHINA … Low Cost Country?**

The end of cheap China

What do soaring Chinese wages mean for global manufacturing?

Mar 10th 2012 | *HONG KONG AND SHENZHEN* | from the print edition

GLOBALIZED

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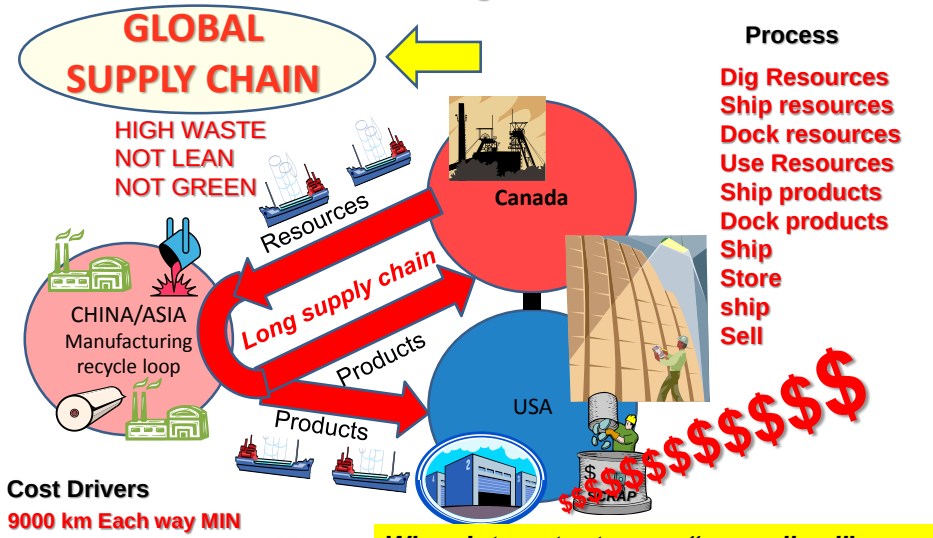
START THINKING LEAN & GREEN

LEAN Review of Trading Models NOW



Process

- Dig Resources
- Ship resources
- Dock resources
- Use Resources
- Ship products
- Dock products
- Ship
- Store
- ship
- Sell

Cost Drivers

- 9000 km Each way MIN
- 6 weeks Transit Inventory MIN
- $100/M cube to transport MIN
- Many Transactions / Handling……
- Much Waste of Natural Resource's

When Interest rates are "normalized" we will have a "High cost of Inventory trap"

39

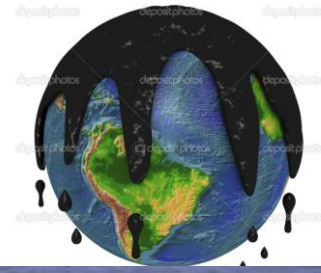
LEAN Review of Trading Models NOW

Unsustainable?

- Ship
- Store
- ship
- Sell

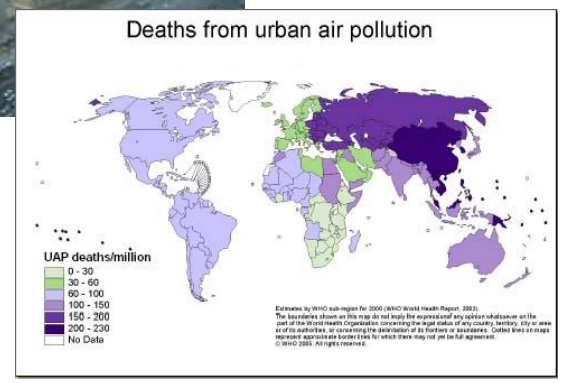
When Interest rates are "normalized" we will have a "High cost of Inventory trap"

40



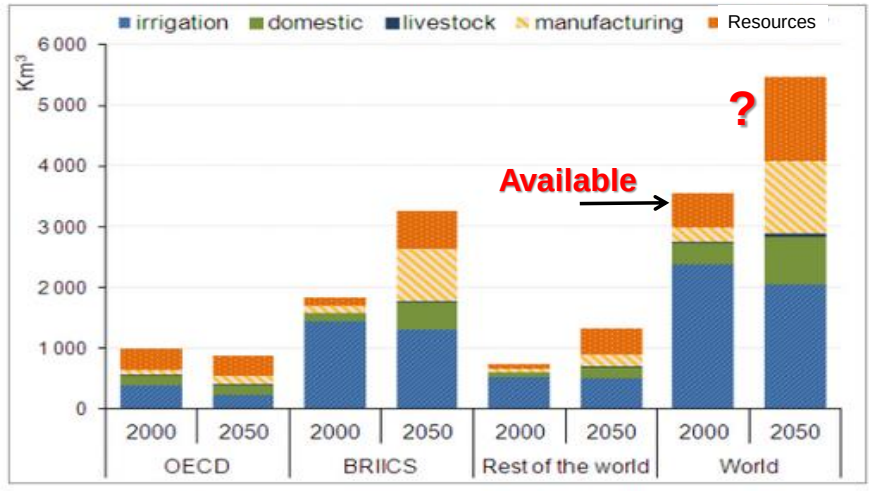
WASTE

Air Pollution



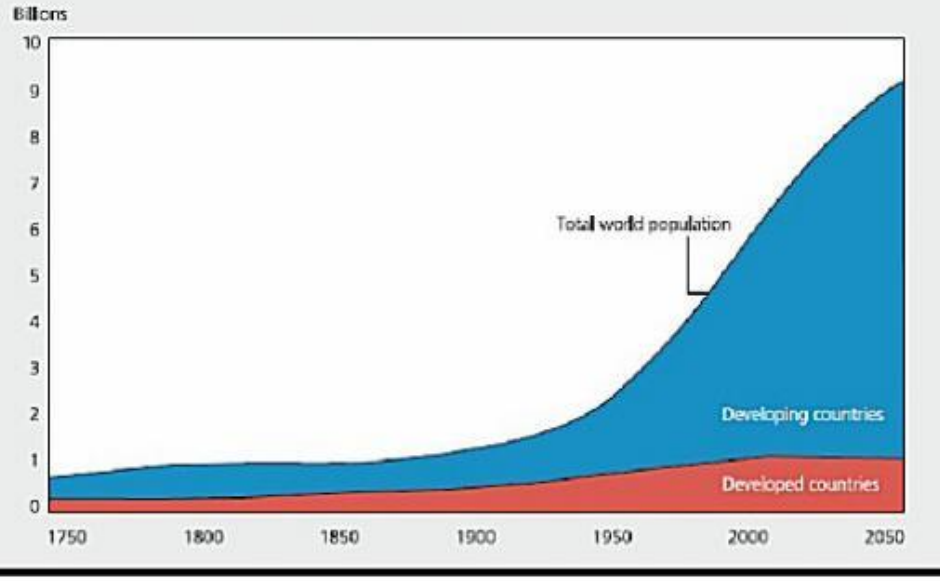
Global water demand

Global water demand: Baseline scenario, 2000 and 2050



Source: OECD

Figure 3.1 **World population, 1750–2050**



45

Society of Manufacturing Engineers

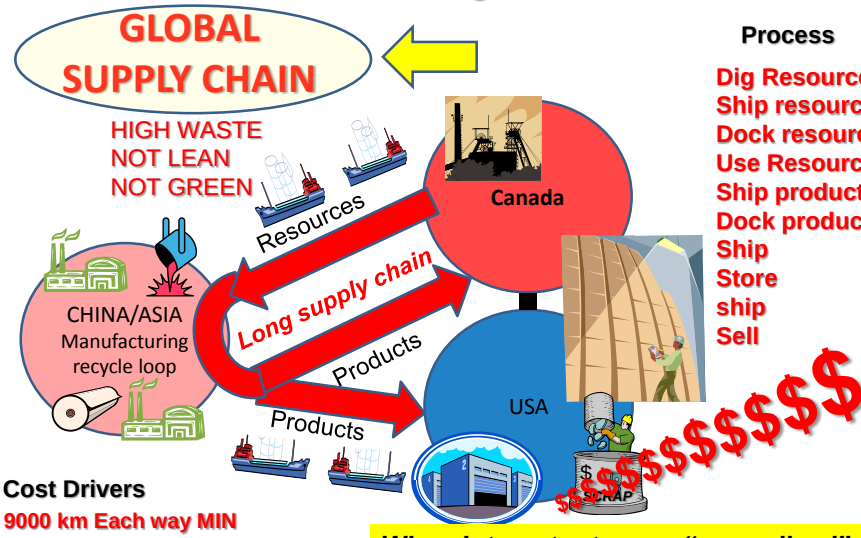
46

47

GLOBALIZED

MANUFACTURI

LEAN Review of Trading Models NOW



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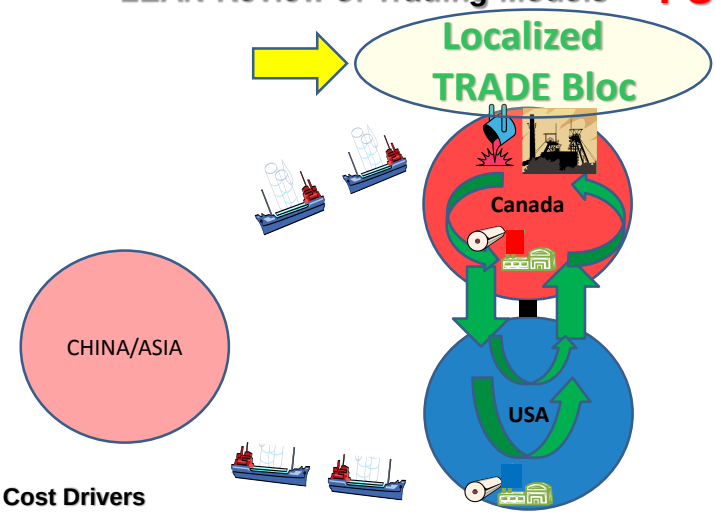
When Interest rates are "normalized" we will have a "High cost of Inventory trap"

49

LEAN Review of Trading Models FUTURE



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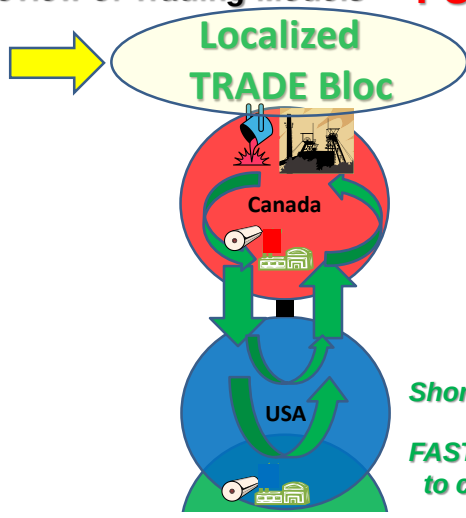
TBM

LEAN Review of Trading Models

FUTURE



Process

Dig Resources
~~Ship resources~~
~~Dock resources~~
Use Resources
~~Ship products~~
~~Dock products~~
~~Ship~~
~~Store~~
Ship
Sell

Short Supply Chains

FAST RESPONSE to customers

Cost Drivers

9000 km Each way MIN
6 weeks Transit Inventory MIN
$100/M cube to transport MIN
Many Transactions / Handling……
Much Waste of Natural Resource's

1000 km Each way MAX 11%
1 week Transit Inventory Max 16%
$10/M cube to transport Max 10%
Few Transactions 10%
Minimal Inventory/Interest rate exposure

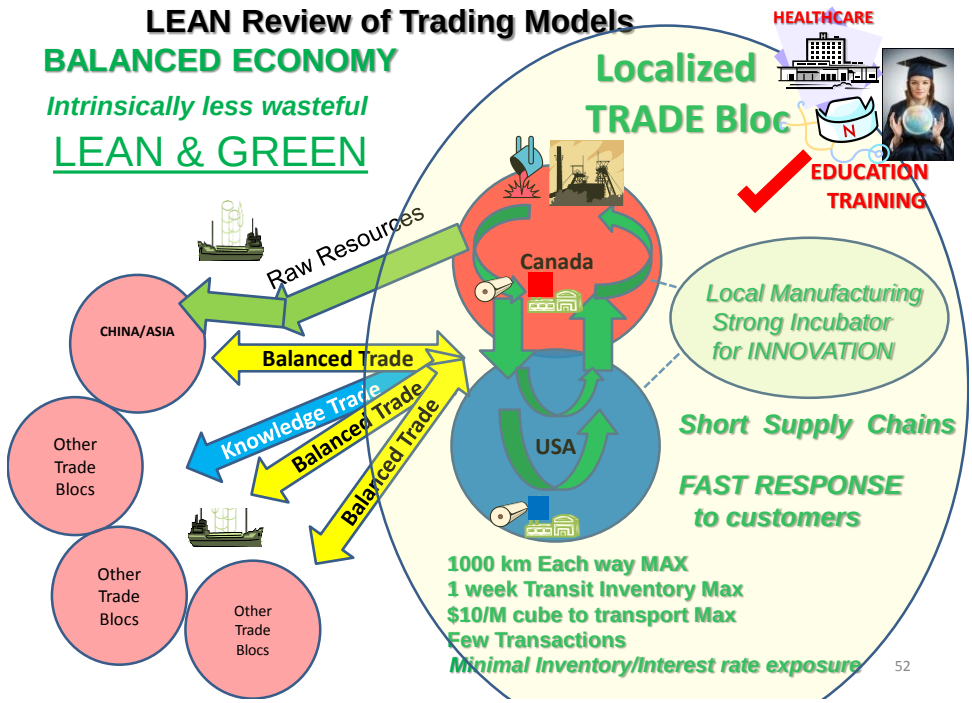
51

LEAN Review of Trading Models

BALANCED ECONOMY

Intrinsically less wasteful

LEAN & GREEN



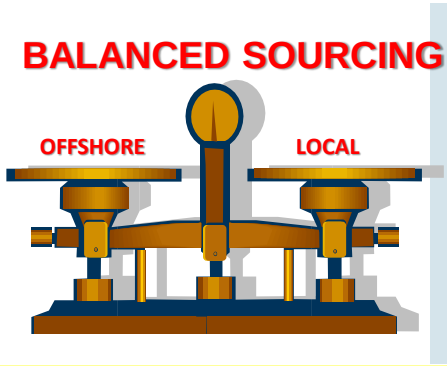
Short Supply Chains

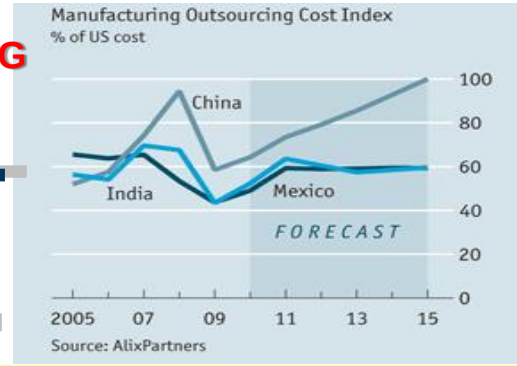
FAST RESPONSE to customers

1000 km Each way MAX
1 week Transit Inventory Max
$10/M cube to transport Max
Few Transactions
Minimal Inventory/Interest rate exposure

52

Validated Cost Trade-off Models … LOCAL versus Off-shore





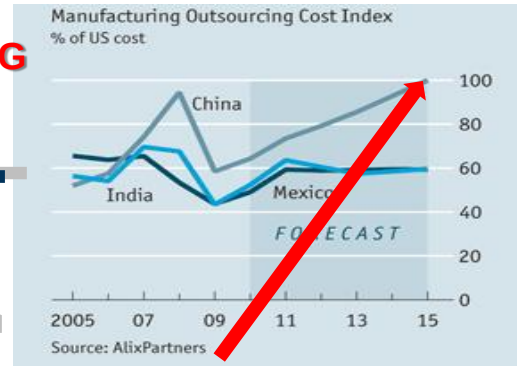
Boston Consulting Group (BCG)……

Predict BALANCED LANDED COST parity by 2015 in most sectors

The REAL Costs to Manufacture OFF-SHORE will be projected to rise.

Due to: Exchange, tariffs, Labor wage inflation, Product Quality Cost escalation Transportation costs, Customer location Inventory costs, Ease of doing business, Plus…Many Other hidden drivers….

Validated Cost Trade-off Models … LOCAL versus Off-shore



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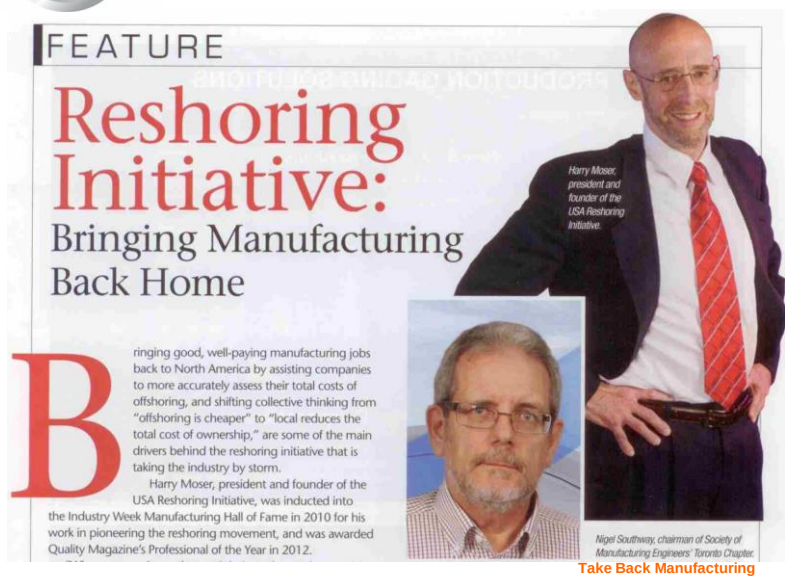
Reshoring Initiative
Bringing Manufacturing Back Home

COMBINED OPERATIONS

TBM


FEATURE

Reshoring Initiative:

Bringing Manufacturing Back Home

Bringing good, well-paying manufacturing jobs back to North America by assisting companies to more accurately assess their total costs of offshoring, and shifting collective thinking from "offshoring is cheaper" to "local reduces the total cost of ownership," are some of the main drivers behind the reshoring initiative that is taking the industry by storm.

Harry Moser, president and founder of the USA Reshoring Initiative, was inducted into the Industry Week Manufacturing Hall of Fame in 2010 for his work in pioneering the reshoring movement, and was awarded Quality Magazine's Professional of the Year in 2012.

Harry Moser, president and founder of the USA Reshoring Initiative.

Nigel Southway, chairman of Society of Manufacturing Engineers' Toronto Chapter.

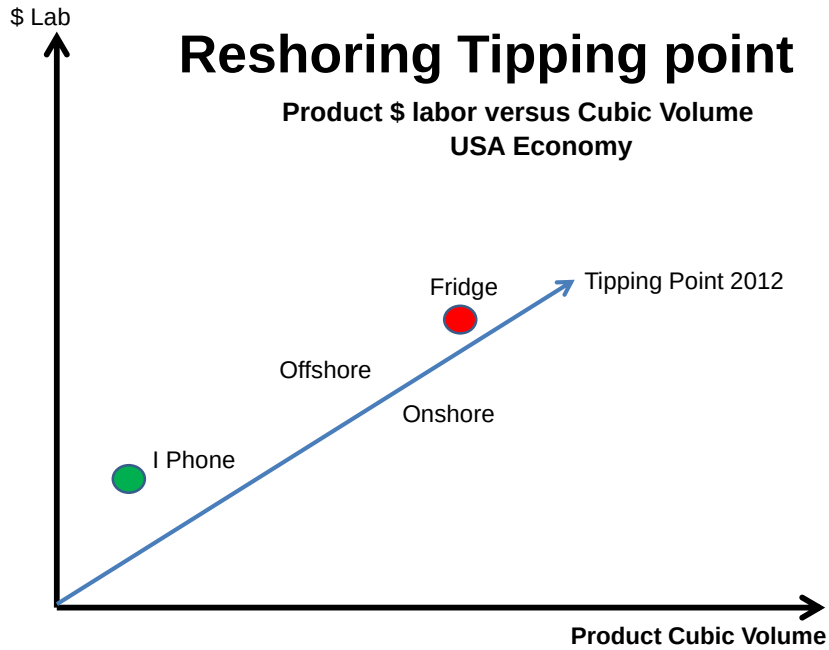
Take Back Manufacturing

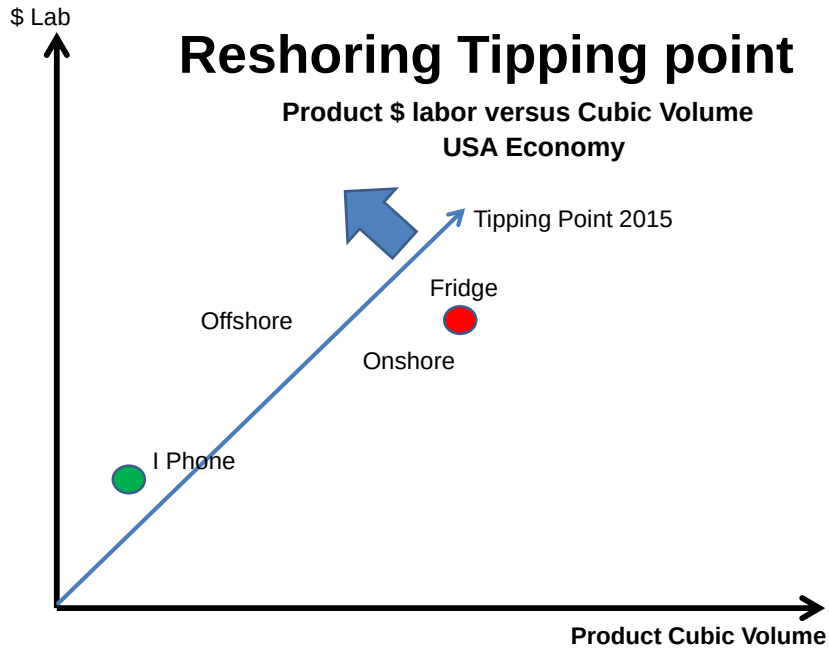
CIM: What factors are driving manufacturers' decisions to bring production back to Canada?

Southway: It's a North American-wide realization that off shoring is getting more expensive with increased transportation expense due to oil costs, as well as labor price escalation in emerging economies. Many corporations and large consulting groups also recognize that there are many hidden costs and issues in supporting a remote supply chain. In general, local manufacturing is now considered to be no more expensive than offshore production. The landed cost tipping point in some sectors and commodities is projected to be reached by 2015. Local manufacturing also offers more stability and the ability to innovate at home more effectively. And, being closer to the customer has added inventory and flexibility advantages.

CIM: How can industry members communicate the importance and value of manufacturing to the general population?

Southway: We have had three decades of people thinking manufacturing is bad news. Manufacturing has been viewed as dirty and dangerous, risky and unstable employment, and so forth. We have a lot of work to do to change this negative image. Just talking about TBM, telling the real story, and showing what we do will help.
If we look at the long term, today's 12- to 15-year-olds will lead the way. When they reach 22 years old, we will have a thriving localized manufacturing economy. It certainly won't be based on cheap oil or energy, but it will be very lean and very green. Things will be made in local manufacturing hubs or clusters. Factories will be very high-tech and their operation will demand high levels of skill and education. All this needs vision and a can-do attitude. Not having both of these is our biggest risk.





GLOBALIZED

MANUFACTURING

START THINKING LEAN & GREEN

What is happening in the USA?

Re-shoring !!!

Reshoring Initiative
Bringing Manufacturing Back Home

- Resurgence of Manufacturing in USA … Now at ***"tipping point"***

via

lower US exchange rate ……

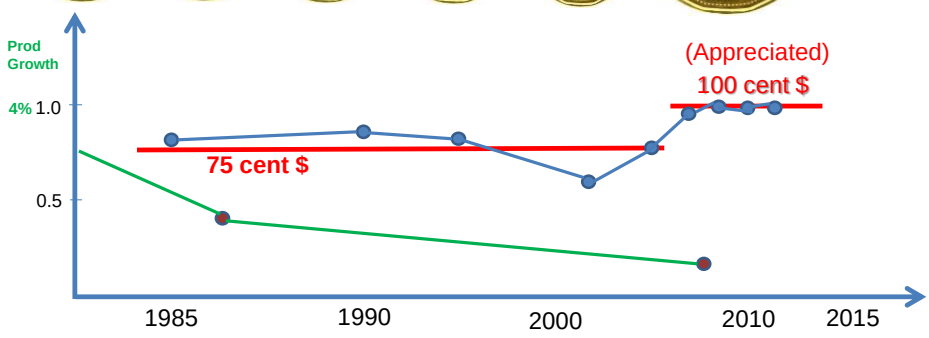
Rethinking of globalized supply

Balanced Sourcing Cost trade-off modeling

Reasons..

- Transportation costs
- Labor costs
- Product quality
- Customer location
- Ease of doing business

CANADA / US $ EXCHANGE



We did not earn it with Productivity growth!

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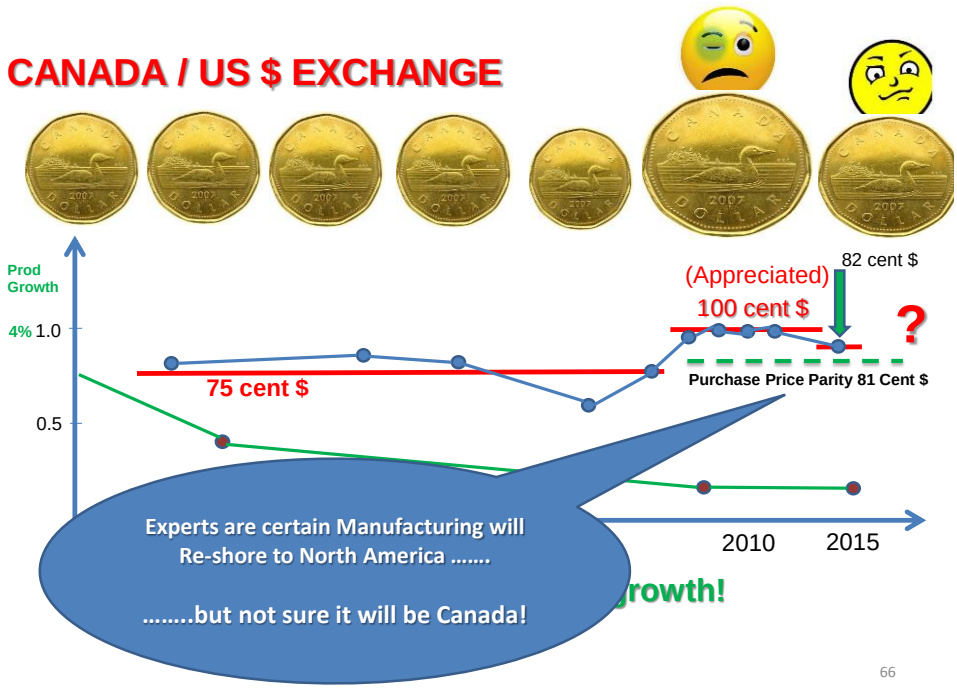

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Impact of Poor Economic footprint (Auto sector)

	Loaded Factory labor rates
• Canada (Ontario) at 0.95 dollar	**$76/hour**
• US North	$85/hour
• US Mid West	$67/hour
• US South	$49/hour
• Mexico	$18.5/hour

At a 0.81 dollar and a competitive business environment would be at **$55/hour**

Reshoring will force some geographical location changes

Forcing Re-deployment of Capital South-ward

67

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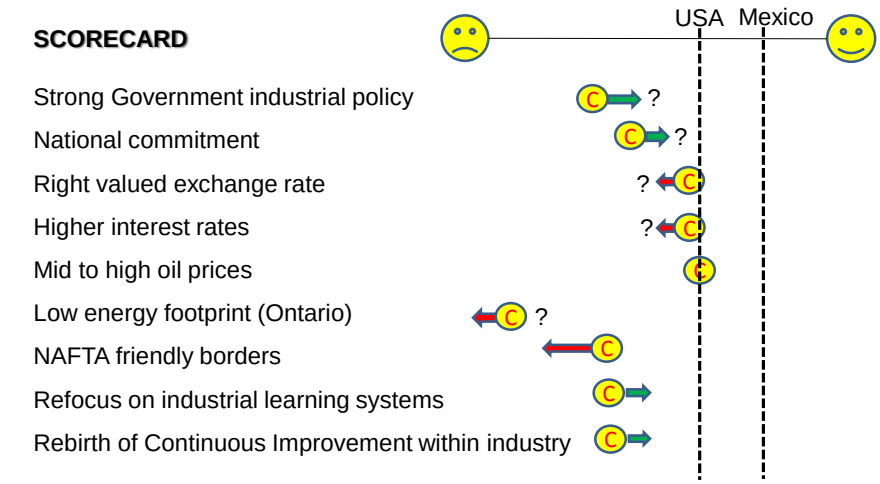
Canadian environment for Reshoring /Balanced Sourcing



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IT WILL BE A CHALLENGE FOR CANADA
BUT SOME MANUFACTURING CAN RETURN
BUT ONLY IF WE TAKE IT BACK

Based on a decline in Resource sectors its our best plan B

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But….Are WE Ready???

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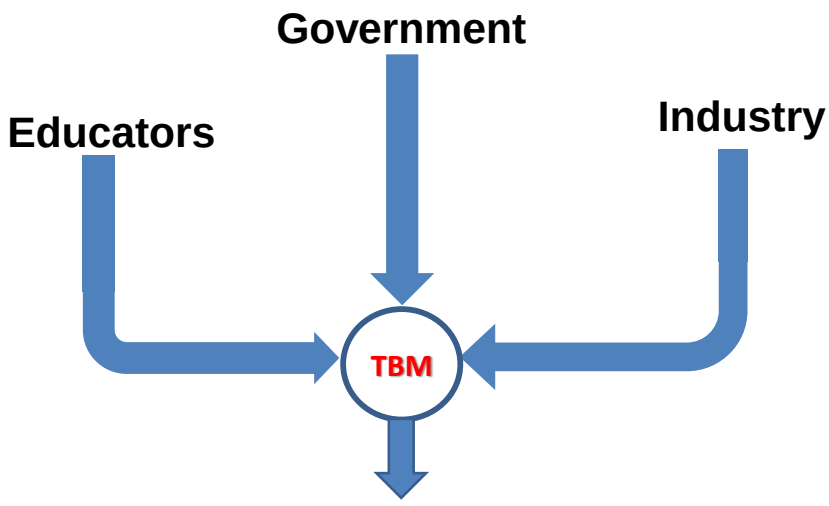
TBM – The 3 Parallel Imperatives



North-American Manufacturing
Prosperity for all.

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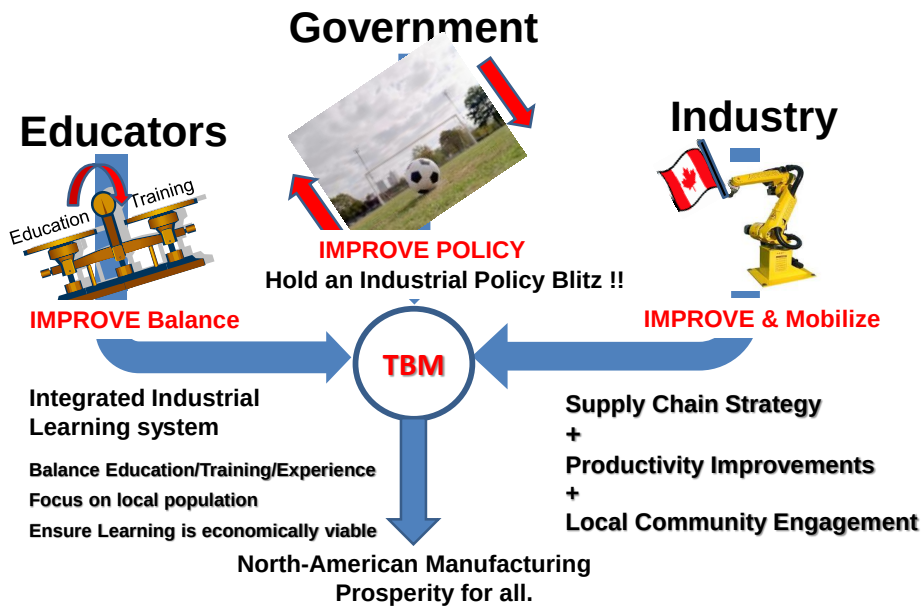
TBM – The 3 Parallel Imperatives



Industry Game-plan

Manufacturing has an IMAGE problem!!

Most manufacturing-based businesses are beyond dispirited….

Our Politicians/Government/Population have little understanding of business and manufacturing…We must EDUCATE them!!

Manufacturing is deemed:

Dark, Dirty, Dangerous, Deafening and Difficult….

….. And Smelly!

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And….
Highly unstable as a career!

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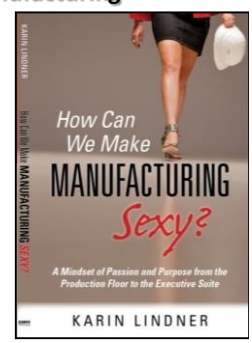
Change ….

The Image of Manufacturing

Let's Make Manufacturing SEXY!



EXCITE the NEXT GENERATION

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Take Back Manufacturing

Let's Re-engineer Our Economy to Work Again!

TBM

FOR OUR KIDS!!!

Questions for a friendly vote with a show of hands?

1. How many agree Canada needs a strong manufacturing base?
2. How many believe TBM is a realistic initiative?
3. How many believe government must focus on Industrial Policy
4. How many would like to be kept informed on TBM and would like to participate in the TBM journey?
5. How many give the "thumbs up" for TBM!!!

KEEP ASKING…. WHY?…

Questions?

END