



SME Toronto

WWW.SMETORONTO.CA

Nigel Southway SME Chair 2012



About SME:

MEET KNOW GROW

The [Society of Manufacturing Engineers](http://www.sme.org)

www.sme.org.

Premier source for manufacturing knowledge, education and networking.

Many programs, events, magazines, publications and online training

Connects manufacturing practitioners to each other, Provide Tradeshow , Expo and network events

Reviews latest technologies and most up-to-date manufacturing processes.

SME has members around the world supported by a network of chapters and technical communities.

SME is a leader in manufacturing workforce development issues, working with industry, academic and government partners to support the current and future skilled workforce.

\$125 per Year

SME Technical Community Networks (8)

[Automated Manufacturing & Assembly](#)

Identifies and pursues advancing technologies and techniques in automation and assembly.

[Forming & Fabricating](#)

Concentrates on key metal forming and fabricating technologies.

[Industrial Laser](#)

Promotes laser technology in North America with high intensity by educating the market and advancing the laser technology base.

[Machining & Material Removal](#)

Discusses, explores and advances ideas related to cutting processes and machining systems.

[Manufacturing Education & Research](#)

Advances education and research in manufacturing, career and professional development, and the manufacturing enterprise's need for a skilled workforce.

[Plastics, Composites & Coatings](#)

Addresses the manufacturing processes of plastics, composites, and finishing and coatings technology.


[Product & Process Design and Management](#)

Discusses, investigates and advances ideas related to the design and management of products and processes, as well as lean manufacturing concepts.

[Rapid Technologies & Additive Manufacturing](#)

Concentrates on the technologies and processes that help conceive, develop, test, improve and manufacture new products to bring them to market faster and more cost effectively.

SME LEAN Certification



Society of
Manufacturing
Engineers

Sign In
Store
Contact

<http://www.sme.org/leancert>



GO

Events
Membership
Professional Development
Education and Careers
Knowledge
About SME
Education Foundation
Publications

Lean Certification


- Lean Certification
- Lean Bronze Certification
- Lean Silver Certification
- Lean Gold Certification
- Lean Certification Pricing
- Preparing for Certification
- Classroom Review Program for Lean Certification
- Lean Online Review Program (LORP)
- Lean Certification: Recertification Requirements
- Lean International Reseller Certification Oversight & Appeals Committee
- Professional Development
- SME Certification
- Green Manufacturing
- Specialist Certificate
- EET Outcome Assessments for Educators
- Lean Registry
- SME Certification Frequently Asked Questions (FAQ)

Lean Certification





This Lean program is the benchmark for achievements and personal growth in Lean. Designed by three organizations – the Society of Manufacturing Engineers (SME), the Association for Manufacturing Excellence (AME) and The Shingo Prize for Operational Excellence – this alliance has established the standard for continuous improvement and Lean practices.


In 2010, the American Society for Quality (ASQ) joined this collaborative alliance, which truly aligns these leading organizations to a single standard for Lean certification, providing manufacturers and their supply chains with a roadmap for workforce development.



AME




ASQ
The Global Voice of Quality™



THE SHINGO PRIZE
for OPERATIONAL EXCELLENCE

**LEAN
CERTIFICATION**

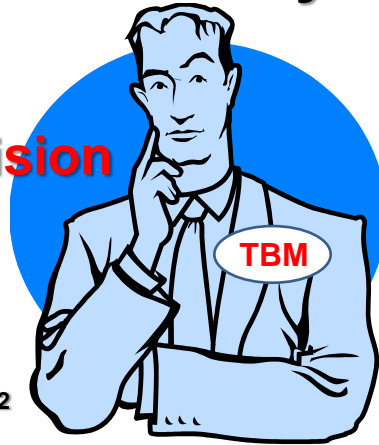


Society of
Manufacturing
Engineers

Manufacturing Knowledge Resource

The future of manufacturing in Ontario's economy.

A Vision



Nigel Southway SME Chair 2012



Take Back Manufacturing **TBM**

**A Forum Dedicated to Restoring
our Manufacturing Sectors.**

www.SME-TBM.org





Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

Take Back Manufacturing

A Forum Dedicated to Restoring our Manufacturing Sectors.

25 Technical Associations
 3 Trade associations
 5 Educational policy makers

Media experts
 Local government reps
 Industry experts



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www.SME-TBM.org

THE TBM FORUM...

Canadian Industry Associations, Government Agencies, Major Educational Institutions, Industry associations, Unions and Industrial experts that have participated and agree to fully support the TBM initiative include:

Associations:

Society of Manufacturing Engineers (SME),
 American Society of Mechanical Engineers (ASME),
 Association of Manufacturing Excellence (AME);
 Association of Operations Management (APICS);
 Auto Part Manufacturing Association (APMA);
 Canadian Manufacturers and Exporters (CME);
 Canadian Tooling and Machining Association (CTMA);
 High Performance Consortium (HPC);
 Ontario Power Generation (OPG);
 Ontario Society of Professional Engineers (OSPE);
 Professional Engineers Ontario (PEO);
 Ontario Professional Engineers Policy Group (OSPE),
 Society of Auto and Aeronautics (SAE),
 Society of Manufacturing Engineers Canadian Exposition Group,
 American Society of Quality (ASQ)
 Ontario aerospace council (OAC)
 MacDonald Laurier Institute (LSI)
 Canadian Tooling and Machining Association (CTMA)
 Certified management accountants (CMA)
 Excellence in manufacturing Consortium (EMC)
 The Progressive Economics Forum (TPEF),

Experts:

High Performance Consortium (HPM),
 Organization Thought-ware International Inc.,
 Re-shore Group USA,
 RIC Center.

Educators:

Association of Canadian Colleges (ACCC),
 Canadian Apprenticeship Forum (CAF);
 Canadian Competition University Forum (CCUF),
 Sheridan College,
 Seneca College

Government and Associated Agencies:

Ontario liberal members of parliament (Industry Education study group),
 Ontario NDP members of parliament,
 York Municipality Economic and Innovation Development.

Unions:

Canadian Autoworkers Union (CAW),
 United Steel Workers (USW)

Media:

Canadian Plant Magazine,
 Canadian Manufacturing Automation magazine
 Shop Metalworking Technology Magazine
 PEO Engineering Dimensions Magazine
 CBC Radio/Canada,
 Globe & Mail,
 The Star
 Other specialized Magazines

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Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

Take Back Manufacturing

It's about:

Having **ONE voice and ONE agenda...**

What we all want :

What we all need:

**STRONG Manufacturing in North America...
 AGAIN!**

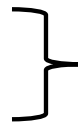
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Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

TBM...Our Ultimate Goal

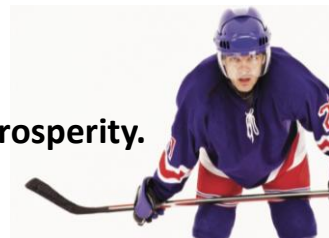
Government,
 Education organizations
 Industry leaders



Work together

Plan a ROADMAP

For our future industrial capability
 and therefore our future prosperity.



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Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

WHY?..Take Back Manufacturing FOR OUR KIDS!!



Presentations.... **TAKE BACK MANUFACTURING**



CMTS Toronto Canada October 2011

FABTEC Toronto Canada March 2012

MMTS Montreal Canada May 2012

SME Annual Conference Cleveland USA June 2012

Many other Society and Association events in 2012

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Taking back manufacturing

A new plan for economic prosperity

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

PLANT

<http://www.canadianmanufacturing.com/fabrication/production/taking-back-manufacturing-51066>

Email Print Text Size



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

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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.



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

By Michael Mazzonatto

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-capitalise 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 counter-productive 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 Dimension* November 14. "It's clear that the globalised economic picture now looks very bleak for emergent economies and this has clearly proved our point that a TBM approach is the only way to reverse this picture."

TBM includes a full range 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 emphasises reducing imports and bringing manufacturing home (rebooting), 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>

GLOBALIZED



MANUFACTURING

Moved Off-shore.....

For low cost labor rates

15% Reduction in Manufacturing Intensity in the last decade



Un-controlled trade.....

“herd behavior”



Moved Off-shore.....

For low cost labor rates

15% Reduction in Manufacturing Intensity in the last decade



Un-controlled trade..... "herd behavior"



Apathy

Under- Capitalization

Productivity loss

Erosion of skills and knowledge

Unbalanced Trade and Revenue

A glimmer of hope !



GLOBALIZED



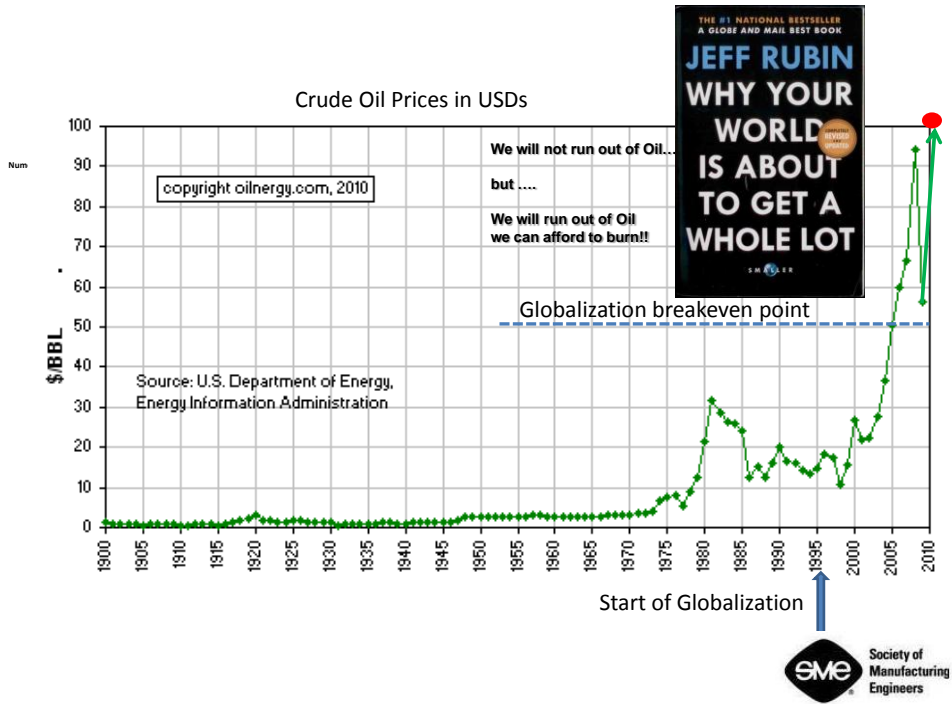
MANUFACTURING

TBM Positional Paper on the Waste in a Global Supply Chain

Waste of VERY Expensive Bunker Fuel



Much Non-Value-Adding Inventory

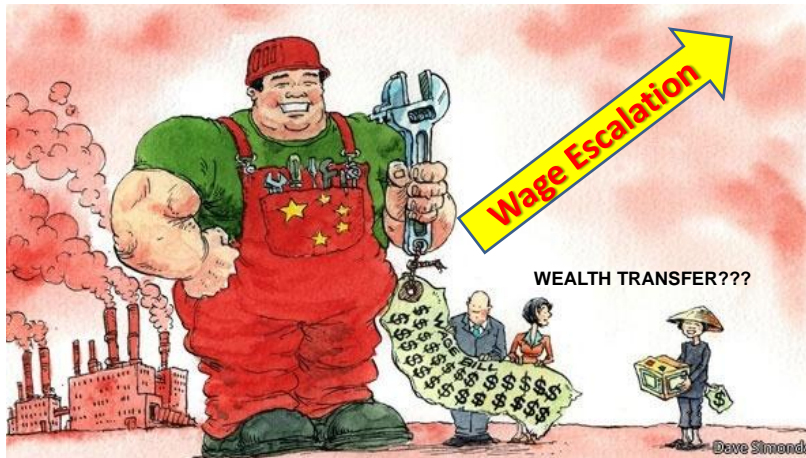


The Economist **CHINA ... Low Cost Country ?**

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

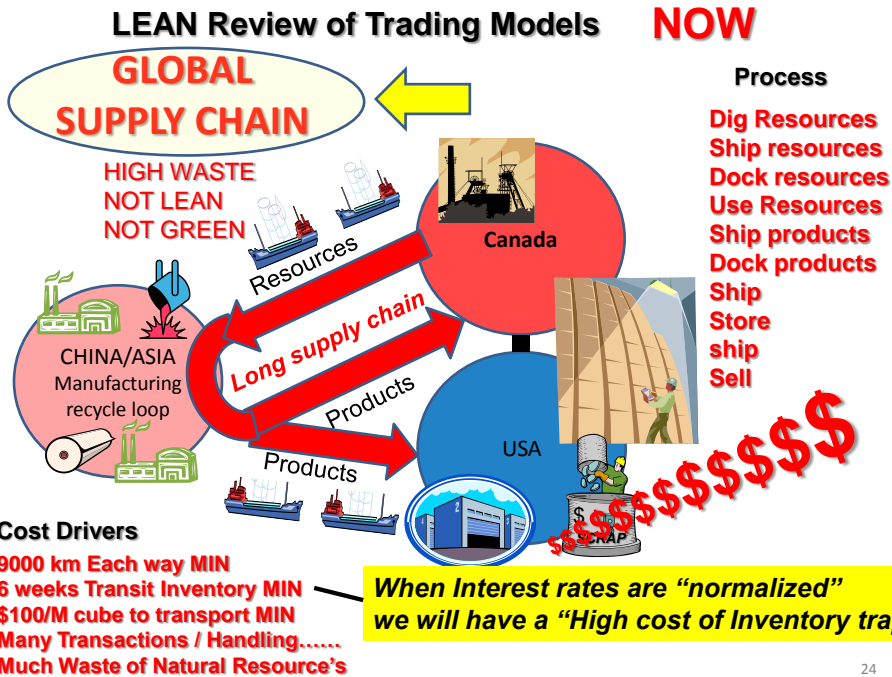


GLOBALIZED



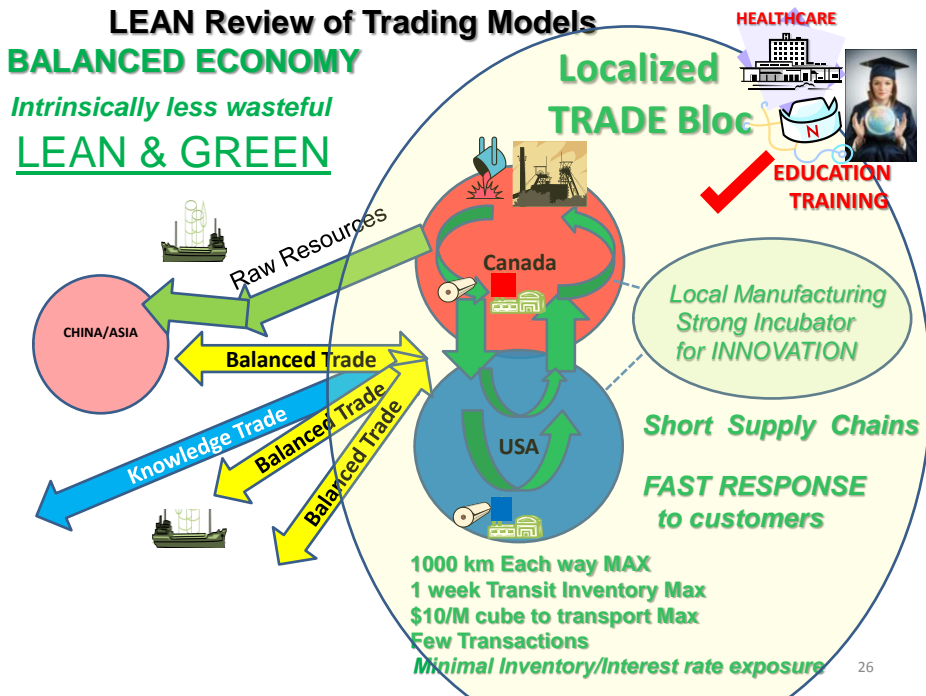
MANUFACTURING

START THINKING **LEAN** & **GREEN**





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We must.. "Run the Numbers"

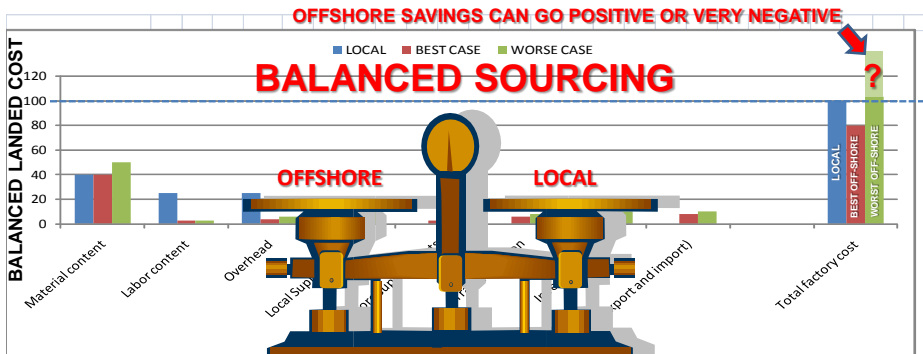


**USE
BALANCED SOURCING
MODELS**

Every Engineer should understand business costing and economics!!!



We built Cost Trade-off Models ... LOCAL versus Off-shore

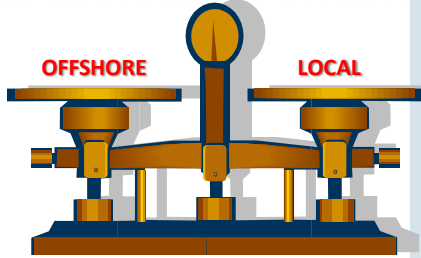


% of Total Cost	LOCAL	BEST WORST		Issues
		OFFSHORE	OFFSHORE	
Material content	40	40	50	Foreign country materials may need harmonizing with your designs
Labor content	25	3	3	A clear advantage, but product skill and training may be an issue
Overhead	25	4	6	A lack of foreign management capability may effect other hidden costs
Local Support costs	7	10	10	Your internal support for offshore will be an adder to your business costs
Offshore support costs	0	3	6	Support at offshore site will be an adder to your business costs
Transportation	0	6	8	These added costs can also be effected by containerization skills and knowledge
Inventory costs	3	6	10	longer line of supply and maybe associated forecasting will attract inventory
Duty (export and import)	0	8	10	Brokerage, duty and insurance will add to the costs
Total factory cost	100	80	103	Baseline set on local supply



We built Cost Trade-off Models ... LOCAL versus Off-shore

BALANCED SOURCING



Boston Consulting Group (BCG).....

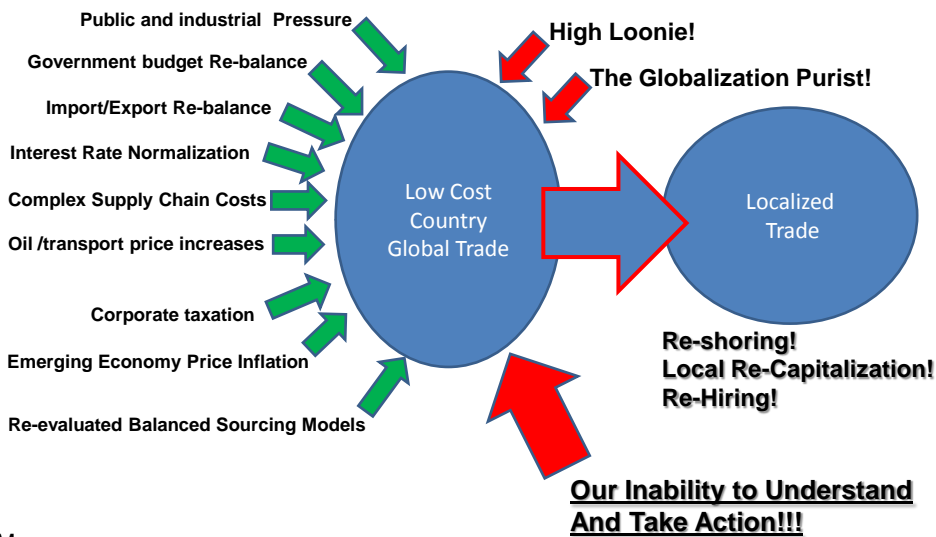
Predict BALANCED LANDED COST parity by 2015 in most sectors

Due to exchange, tariffs, Transportation, wage inflation, other hidden drivers.... The REAL Costs to Manufacture OFF-SHORE will continue to rise.

Globalized Manufacturing will become a non-preferred strategy



New Pressures on LCC Globalization (Resource & Product Transfers)



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Re-shoring !!!



- Resurgence of Manufacturing in USA ... Now at **“tipping point”**

via

lower US exchange rate

Rethinking of globalized supply

Balanced Sourcing Cost trade-off modeling

Maybe not us with a HIGH LOONE



But....Are **WE** Ready???

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WHY NOT?



- We already have the resources here
- We still have the know-how and skills.
- We have our consumers here.
- We have our investments here
- We have our futures here

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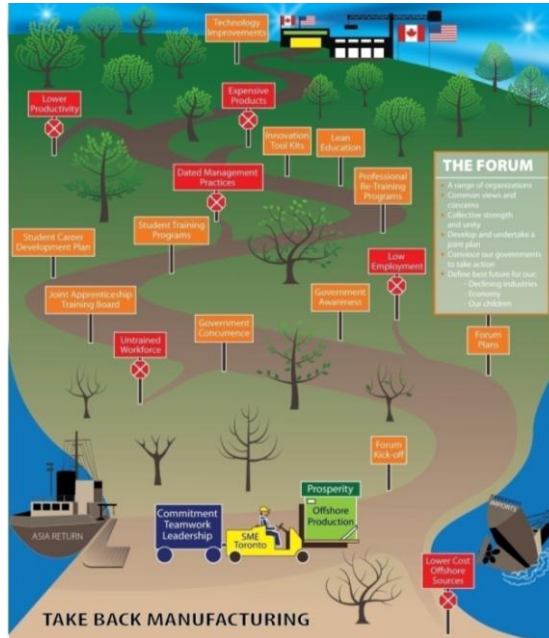


THE TBM ROADMAP

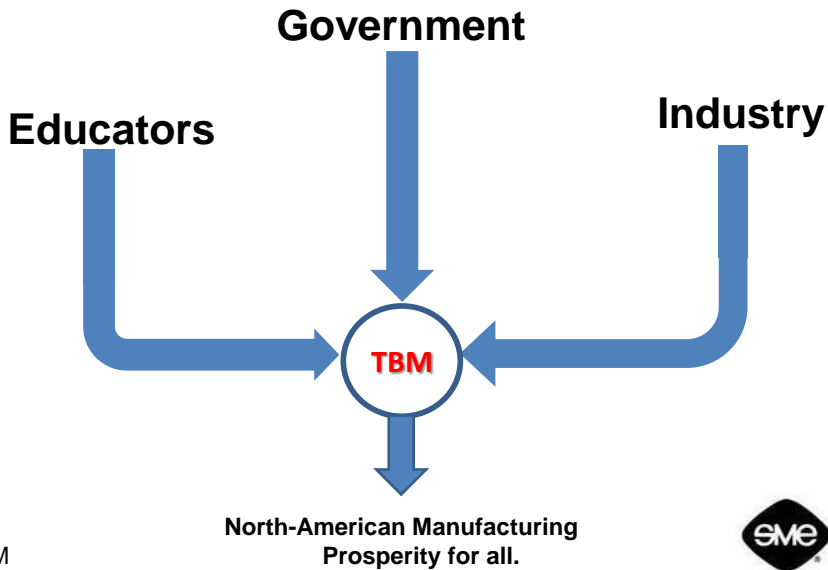
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Take Back Manufacturing ROADMAP



TBM - The 3 Parallel Imperatives



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TBM - The 3 Parallel Imperatives

Government

- Provide Involvement and support
- Embrace Waste-Free Forms of Globalization
- Focused POLICY and PLANS



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G1.0 Volatile Labor and Wealth Transients

G2.0 Balanced Local Economies



Equitable IP / Knowledge Trade



Limited Transfer Materials and Products

G1.0 High Waste and Transportation G2.0 Improved Productivity and Less Waste

Policy support for TBM

Define BOLD Policies to ...Take Back Manufacturing.

FISCAL POLICY

- Fix Canadian Dollar to get to the same “tipping point” with the USA
- Adjust Ultra low Interest Rates to a “normalized” level

TRADE POLICY

- Embrace a return toward a Localized TRADE bloc.... *Practice State Driven Economics*
- Reduce Non-North America IMPORTS via Controls and Balance with Strategic EXPORTS
- Participate in a Knowledge Based Economy .. BUT with Improved IP controls

INVESTMENT POLICY

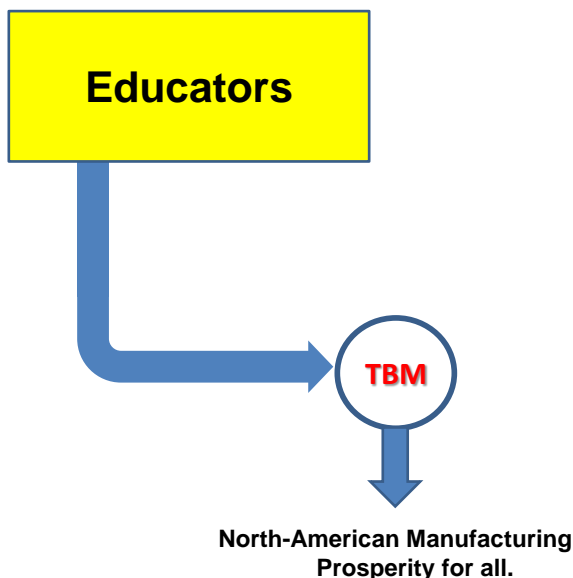
- *Simplify* industry Incentives (SR&ED etc).... *hold industry 100% accountable* for results
- Re-deploy capital Investment into local value adding industries.

EDUCATION/INFRASTRUCTURE/ENERGY POLICY

- Implement Industrial Education/Training via an Integrated Apprenticeship system
- Fix our declining infrastructure... via greater industrial activity ...to support it.

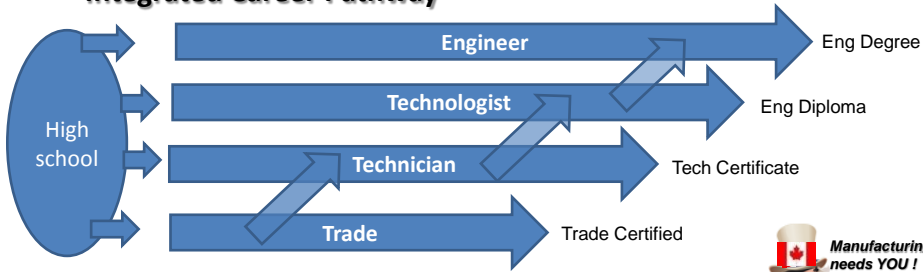
Partial list only

TBM - The 3 Parallel Imperatives



VISION ..Re-focus on New Apprenticeship Programme

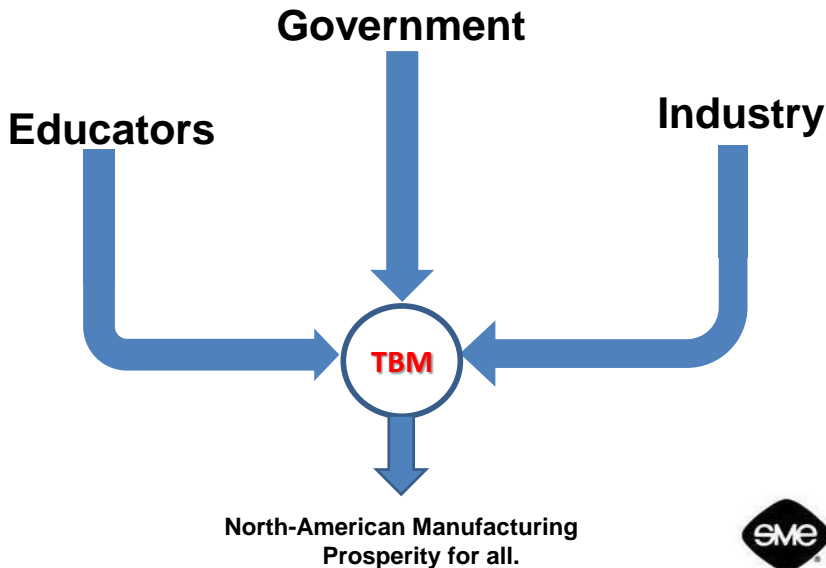
- **Integrated Career Pathway**



- Industry Recognized Skills and Education Development Progression
- Apprenticeship Pool From The Best, the Brightest And The Most Talented
- Become The Learning/Occupation Destination Of Choice for High School Students
- Apprenticeship Courses Transferrable And Articulated To Other Post Secondary Colleges And Universities, Supporting Lifelong Progression In Learning As Shown In Career Pathway Above
- Industry must lead on driving and installing this system. (So..can't complain about skill shortage!!)
- **DO IT!.....** Before we loose the Industrial Experience of the Baby Boomers!!



TBM - The 3 Parallel Imperatives



TBM - The 3 Parallel Imperatives

Industry

- Gain a Vision & Aptitude for all forms of “INNOVATION”
- Use **BALANCED SOURCING.... Run the numbers!!**
- Reinstall a “MINDSET” for Continuous Improvement
- Install New Technology and Capital Re-investment
- Re-build **LOCALIZED** Manufacturing Communities (Incubators)



North-American Manufacturing
Prosperity for all.



Manufacturing has an IMAGE problem!!

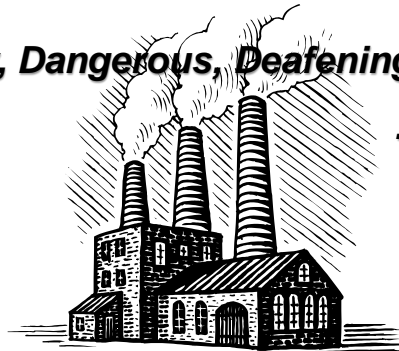
Most manufacturing-based businesses are beyond dispirited....

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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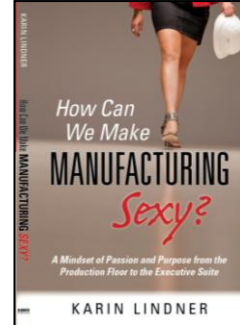




Change

The **Image** of Manufacturing

Let's Make
Manufacturing
SEXY!



EXCITE the NEXT GENERATION



Take Back Manufacturing

**Maybe everyone associated with Manufacturing
should look at their image????**





Take Back Manufacturing

We may have government policy issues...

But

It is “our job” as industrialists to follow a successful roadmap to improve and be competitive to become entitled to TBM



Take Back Manufacturing

- [HOME](#)
- [Its Time to Take Back Manufacturing](#)
- [The TBM Initiative](#)
- [TBM Survey Instructions](#)
- [Special Notice to Members](#)
- [NEWS](#)
- [TBM Press Release Information](#)
- [TBM Mission](#)
- [The TBM Forum](#)
- [TBM Forum Plans](#)
- [TBM Information](#)
- [Chat about TBM](#)
- [About SME Toronto Chapter](#)
- [Contact Us](#)

SEE [TBM MOVIE](#) ...Explanation of the SME TBM Survey

TBM SURVEY



Do You Care About Manufacturing in CANADA??



THEN PUSH HERE

[VIDEO](#) ...What is TBM???

[VIDEO](#)...Why is it important?

[VIDEO](#)...Why do the Survey?

[Join SME today!](#)

SME TORONTO website
<http://www.smetoronto.ca/>

FABTECH ISAH Cocktail Party Quiz [Results](#)

SME Monthly **TBM** Journey.....

*We are holding regular SME Chapter meetings with **TBM** as the central theme*

With one of the TBM imperatives discussed as a special topic each month.

- January TBM Overview
- February Innovation
- March Balanced Sourcing
- April Industrial Education and Training
- May Computer Integrated Manufacturing
- June SME Annual Conference .. TBM Focus
- July Government policy issues/Survey results
- August Productivity and Lean
- September Rapid Prototyping (Methods/Technologies)
- October TBM Roadmap Roll-out



TBM.... STEP 1.

Take the

TBM Self Positioning Survey

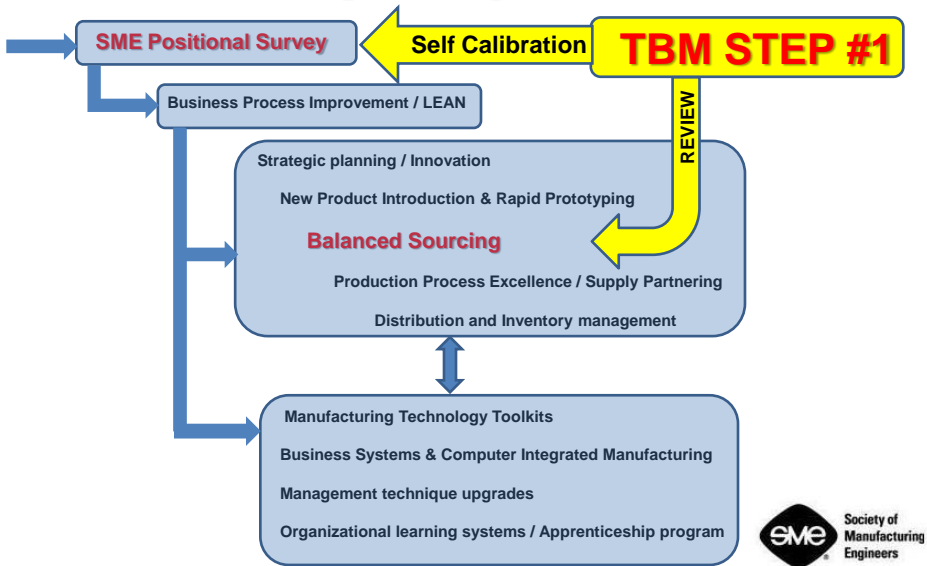
Help us to Help you!



TBM Self Positioning Survey



The TBM Evolution Plan *Lets get organized.....*





Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

TBM Self Positioning Survey

Help us to Help you!

Organizational Information? *Sector/size/business type etc*

Global Competitiveness? *What are your issues and your needs?*

Business Performance and the Imperatives? *Now and for the Future*

Exposure to SME? *Improvement concepts and initiatives*

Education Needs? *In your sector*

How do you need the help? *Format of support preferred.*



Society of Manufacturing Engineers Toronto
Advancing Manufacturing in Ontario

Why do the TBM Survey?

Help us to help you ... Access a self help TBM Roadmap / Toolkit.

Allow us to further learn the issues each industry sector is facing.

Publish feedback to all of us on the results....

Generate a Petition data base for government attention.



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



FOR OUR KIDS!!!