



**Society of Manufacturing Engineers Toronto**  
*Advancing Manufacturing in Ontario*

# Take Back Manufacturing

# TBM



Society of Manufacturing Engineers Toronto  
*Advancing Manufacturing in Ontario*

# Take Back Manufacturing

- It is about manufacturing in Ontario.
- It isn't about the organizations behind it.
- It is about the jobs and prosperity we have lost.
- It isn't about protectionism or handouts
- It is about balanced import and exports..
- It isn't about us versus them.
- It is about our future.
- It isn't about individual or group agendas.
- **It is about, AND MUST STAY ABOUT, the common denominator that we all share...**



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# Take Back Manufacturing

It's about:

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

What we all want :

What we all need:



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# Take Back Manufacturing

It's about:

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

What we all want :

What we all need:

**STRONG Manufacturing... IN Ontario...  
AGAIN!**



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# **Take Back Manufacturing**

## **TBM...What is the purpose??**

**The purpose is plan the roadmap to TAKE BACK MANUFACTURING in Ontario.**

**The goal is to get government, educators and industry leadership.....**

**.....to start working closer together.**

**So we can plan the recovery of the declining manufacturing sectors in Ontario.**



# Take Back Manufacturing

## *Globalization?...*

*It is now very clear that the economy both here and in the USA and through-out the world is floundering,*

*We are seeing a general failure and dissatisfaction with the globalization model for financial and economic stability.*

*Our economic policy makers continue to struggle ....*

*They are reaching the realization that something much more **significant** and **fundamental** must be done to reposition all western economies...*



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# Take Back Manufacturing

*So...the need for **TBM** should resonate now ....*

*.....more than ever!!*





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# **Take Back Manufacturing**

## **So what's next?**

**Everyone is now beginning to see the issues and the situation,  
but little is being actively done to fix it,**

**The TBM Initiative has a fresh and much broader representation across many  
parts of industry,**

**We are now starting to communicate and gain involvement.**

**So..its now the turn of government and others that set policy to listen.....**





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# **Take Back Manufacturing**

**Help us Take Back Manufacturing!!!.**

**WELCOME**



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# **Take Back Manufacturing**

**It's about us....**

**.....All of us!**



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# Take Back Manufacturing

Introducing our presenters today..

**Marie Laird .....SME Chair Toronto**

**Nigel Southway ...SME Operations leader**



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# Take Back Manufacturing

## Why would we want to Take Back Manufacturing?

The deep concerns expressed from everyone we have talked too is that:

We are all rapidly losing our prosperity via the ongoing decline in this important part of our economy,

We have doubts about the ability of Ontario and Canada to compete.

We are all concerned about jobs and our ability to pay our way as Ontarians.

Also we are all worried about the next generation's future.

Much more must be done to improve the Canadian economic and business environment to better position us for success.



## The TBM FORUM

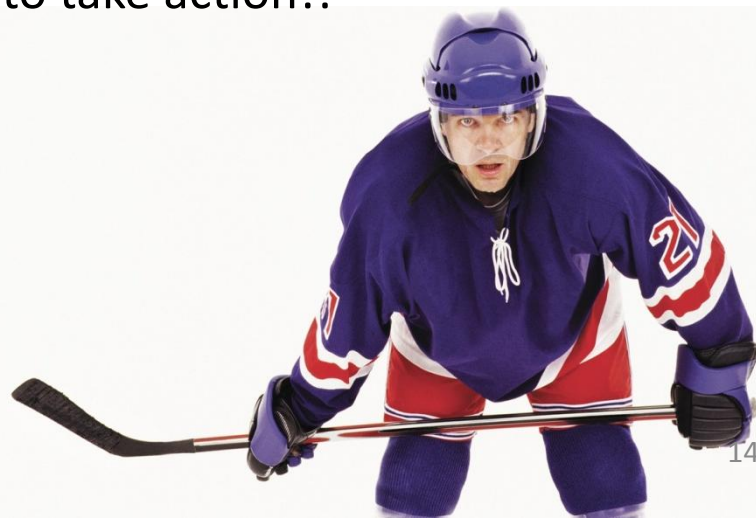


- A range of Organizations
- Common views and concerns
- Collective strength and unity
- Develop and undertake a Joint recovery plan
- Convince our Governments and Leaders to take action!!
- Define best future for our:
  - Declining industries
  - Economy
  - Our children

25 technical Associations  
3 Trade associations  
5 educational policy makers  
Media experts  
Local government reps  
Industry experts

• Before its too late

• **Its not game over!!!**





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# **Take Back Manufacturing**

**It may be a government policy issue**

**We do need support and help**

**But**

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





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# Take Back Manufacturing



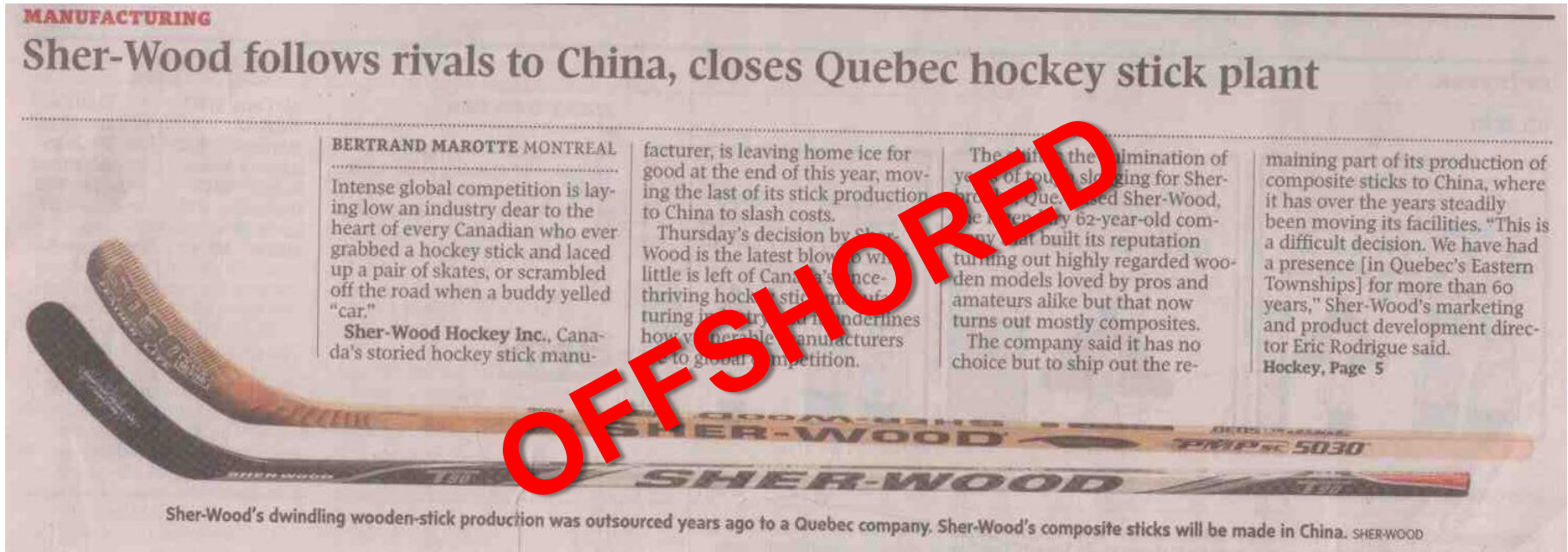
**FOR OUR KIDS!**



# It's only a game!!!



# It's only a game!!!



We have a generation of parents who have been brought up to think that only the Japanese make good cars!.....

Now we will have their kids thinking Canada cannot make hockey sticks!!



**GOOD NEWS**

**BAD NEWS**

# **A Global Challenge**

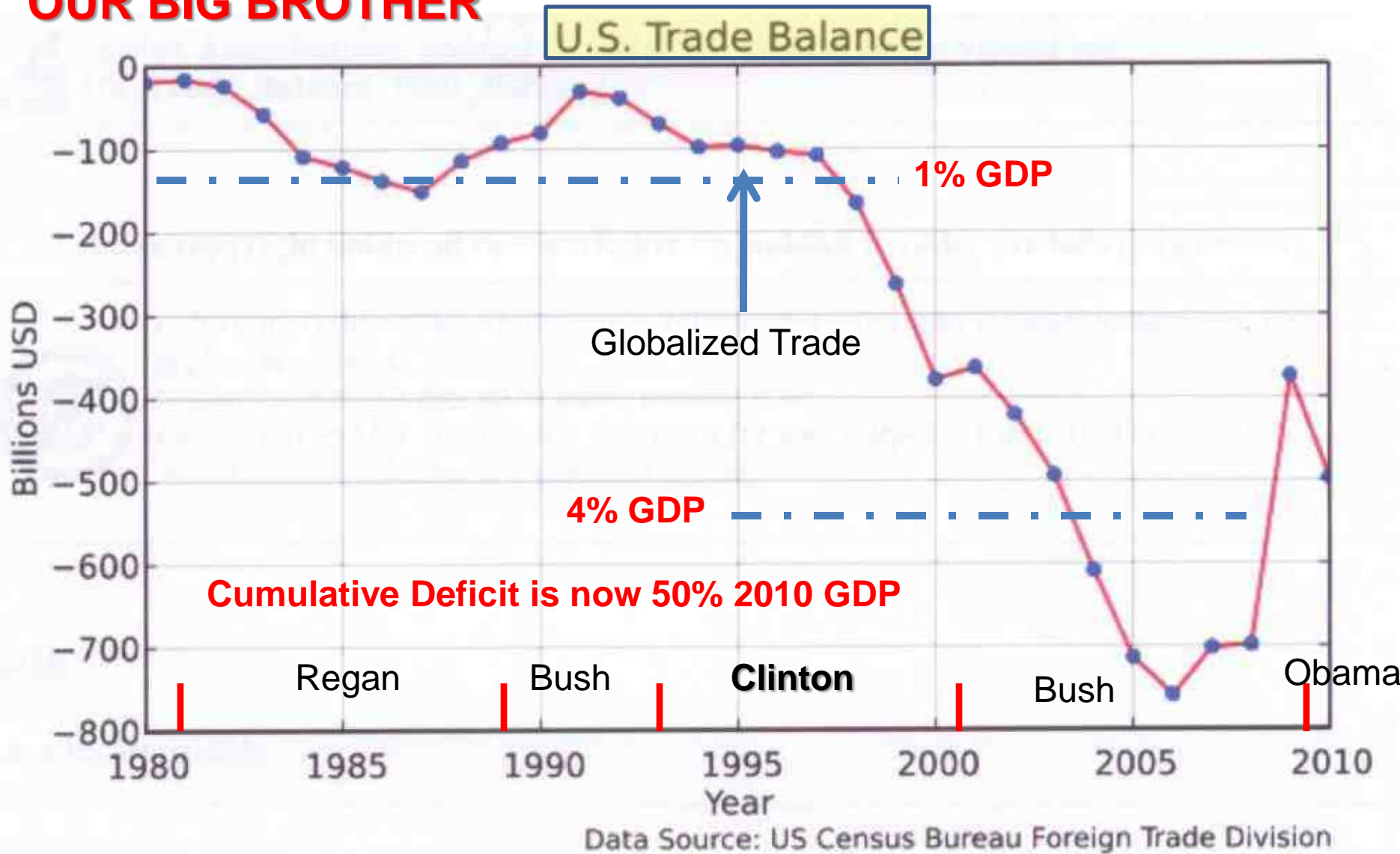
# Stiff Offshore Competition

- Many businesses have faced stiff competition leveraging offshore supply of products or services that threaten survival



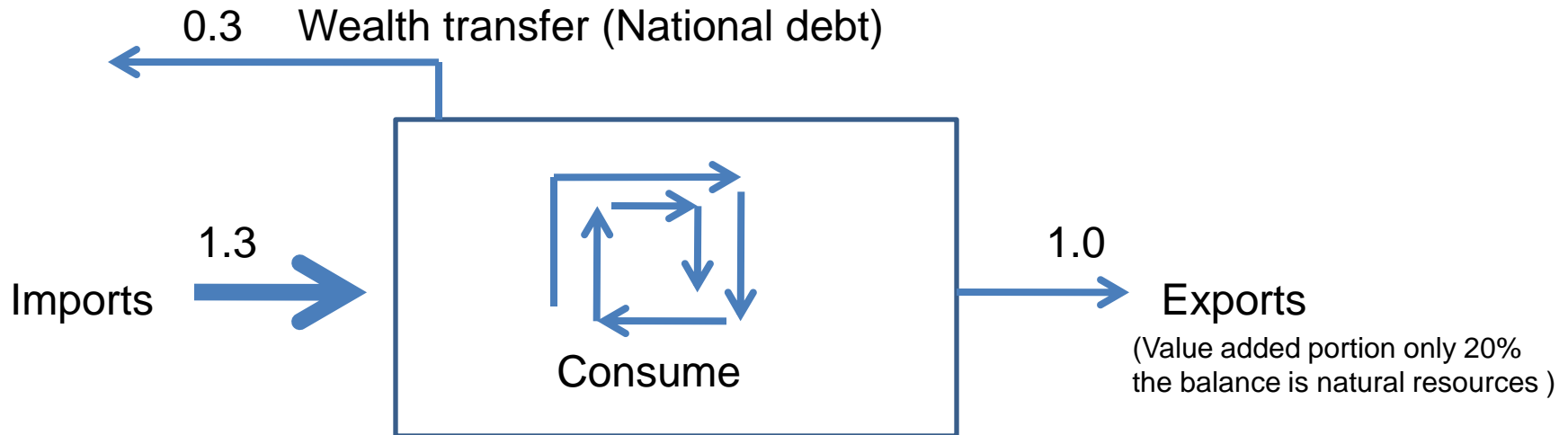


# OUR BIG BROTHER



# ***The Wealth Transfer Machine***

***We have developed a Wealth Transfer Machine from North America to emerging economies that is mainly one way.***



***Concept from “THE END OF THE FREE MARKET” Bremmer***



**The Big question NOW being asked...**

**Did we manage the trade balance ?**

**Should it have been trade at any cost?**

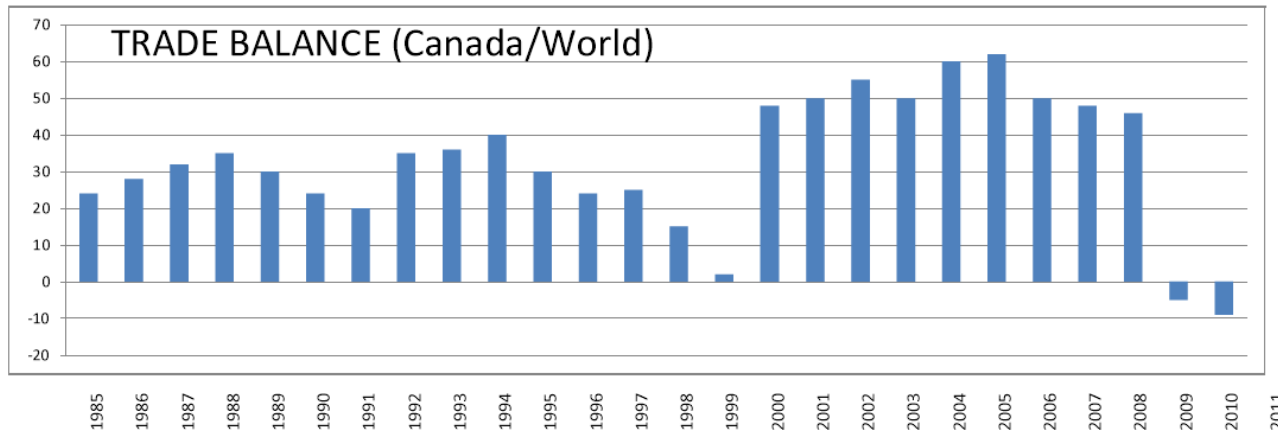
**or**

**Trade that benefits all?**

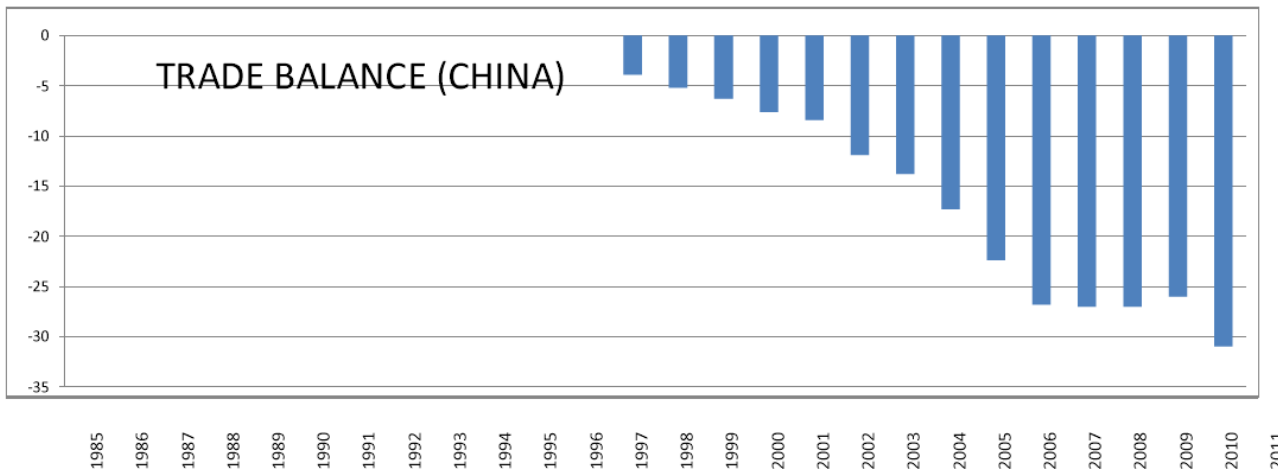
# CANADA



Declining

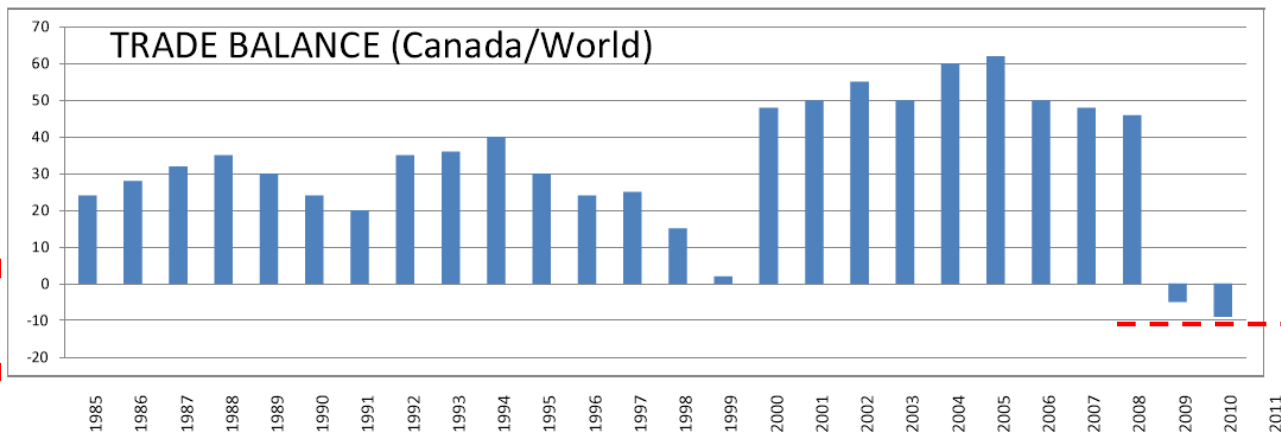


Negative Trend



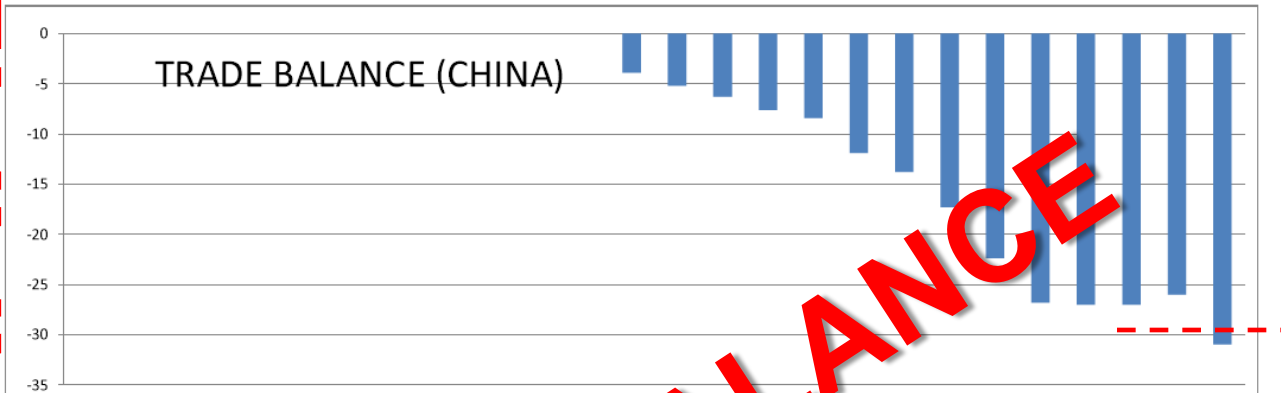
Out Of Balance

# CANADA

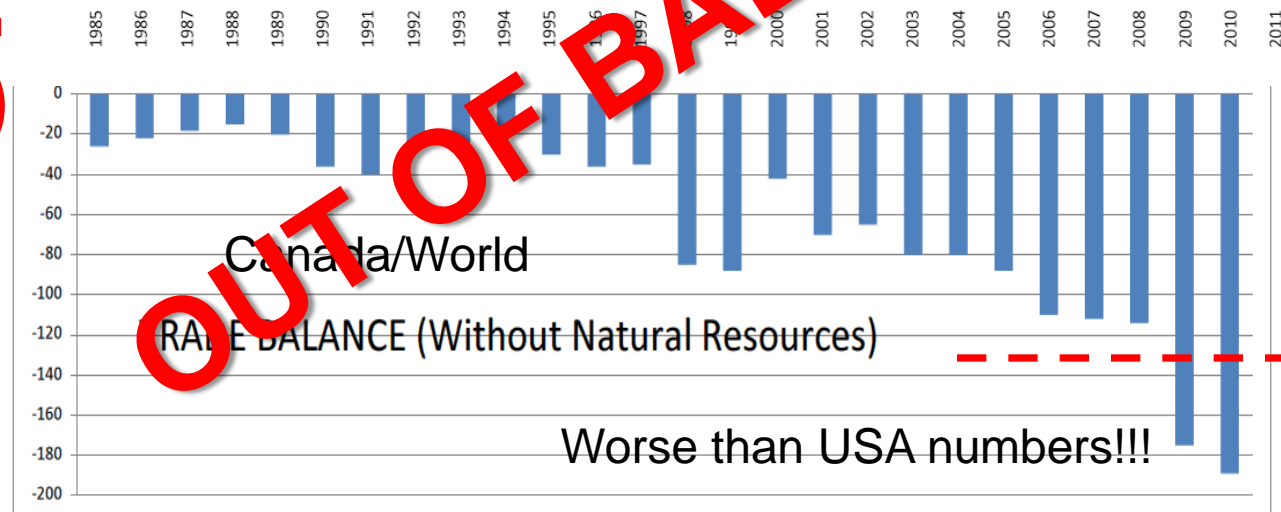


1% GDP

(GDP=1350B)



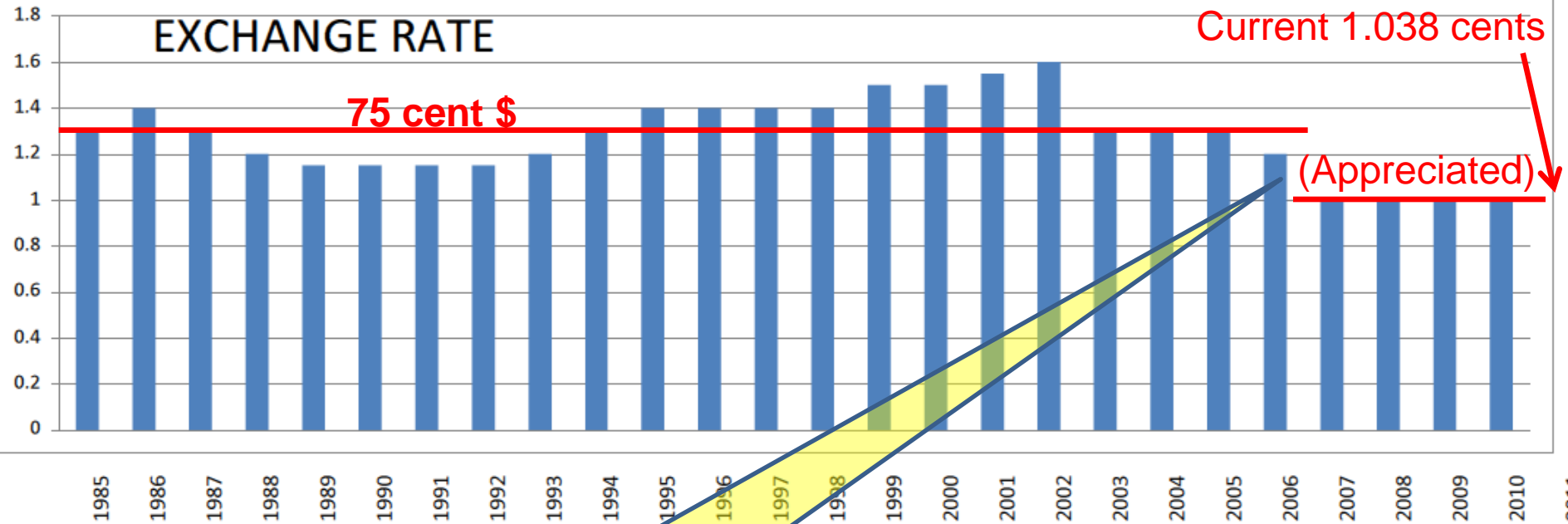
2% GDP



10% GDP

## CANADA/US(Reserve) EXCHANGE

### EXCHANGE RATE



**Created by a resource boom..**

**Appreciates Currency**

**Reduces ability to Export**

**Reduces balanced manufacturing**

**Increases exposure to global instability**

We need to understand that we have been exposed to commodity speculation not true growth in \$ value  
And it will not pay our bills in the long term.

# Current situation..... Ontario

Economy in the whole of North America is in “**stall**” mode.

Ontario falling behind in Productivity/Innovation and Prosperity.

Canada Over-dependent on a Resource based economy. (high \$)

Canada trade .....Not-balanced (for value adding manufacturing)

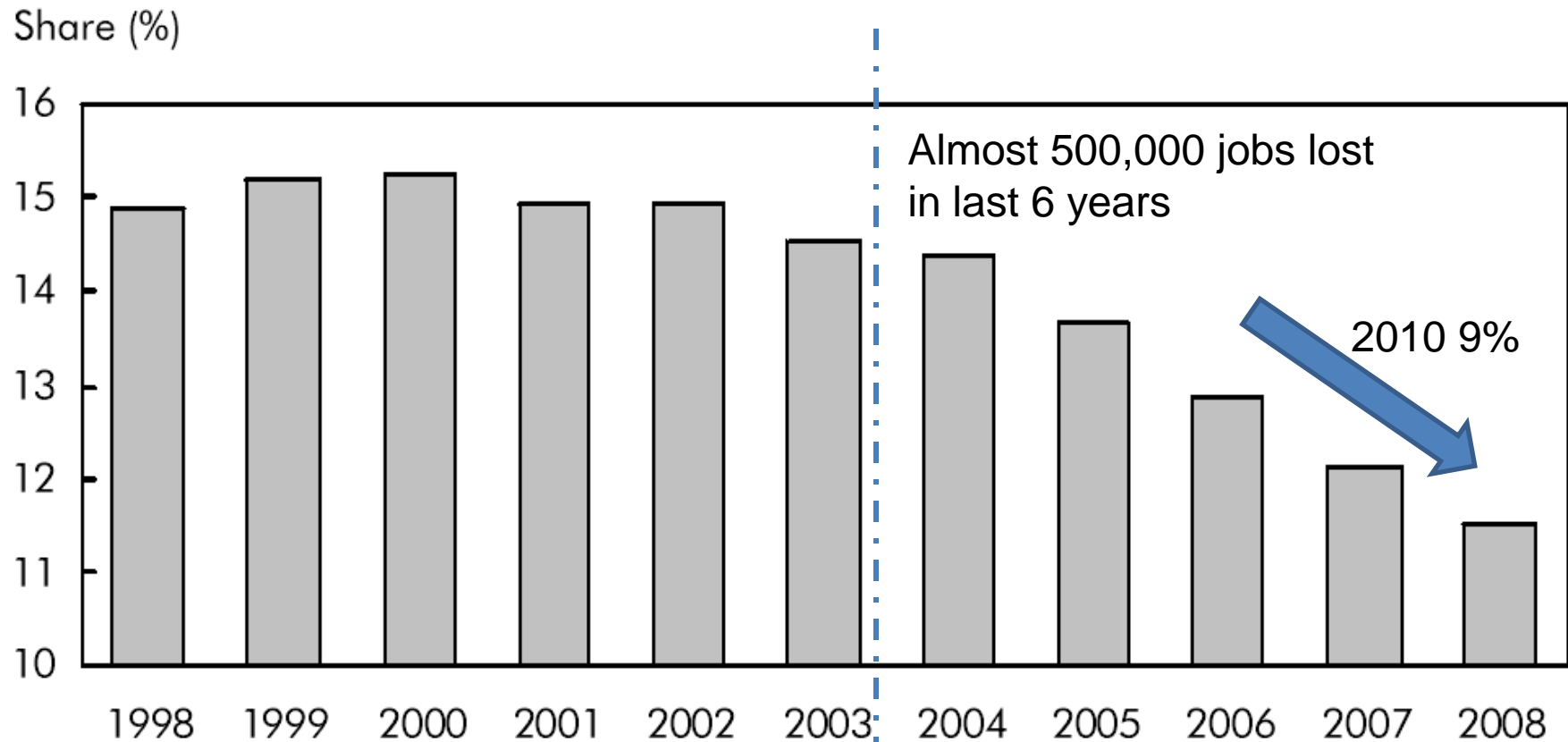
Manufacturing as a key sector for Ontario..... in serious decline

Manufacturing support/education infrastructure .....badly unfocused

Overall bleak outlook for the next generation



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



Source: Statistics Canada, Labour Force Survey.

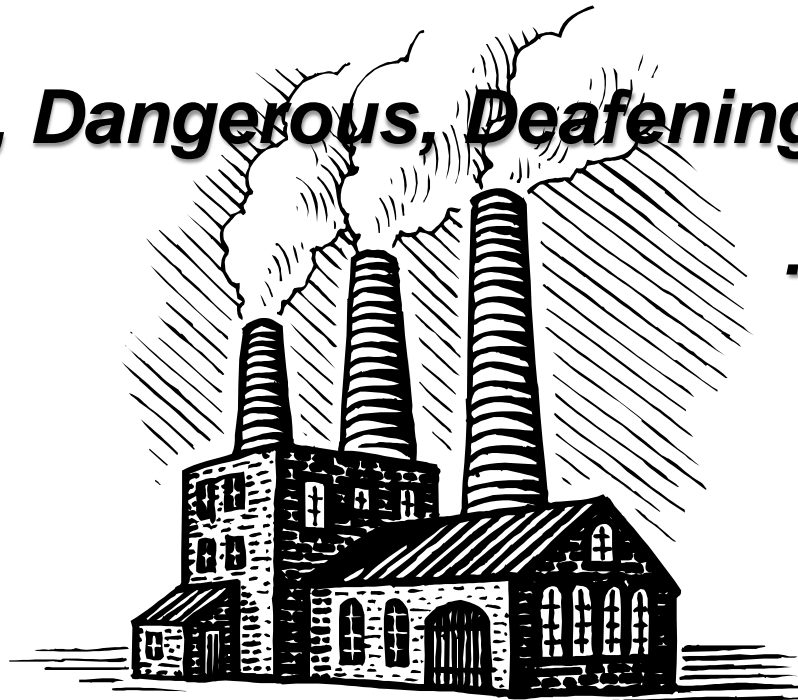
# The social conscience for manufacturing

Most manufacturing based businesses are beyond dispirited....

Our Politicians/Government have little understanding of business and manufacturing. ....(We must EDUCATE them!!)

Manufacturing is deemed:

***Dark, Dirty, Dangerous, Deafening and Difficult....***  
***..... And Smelly!***



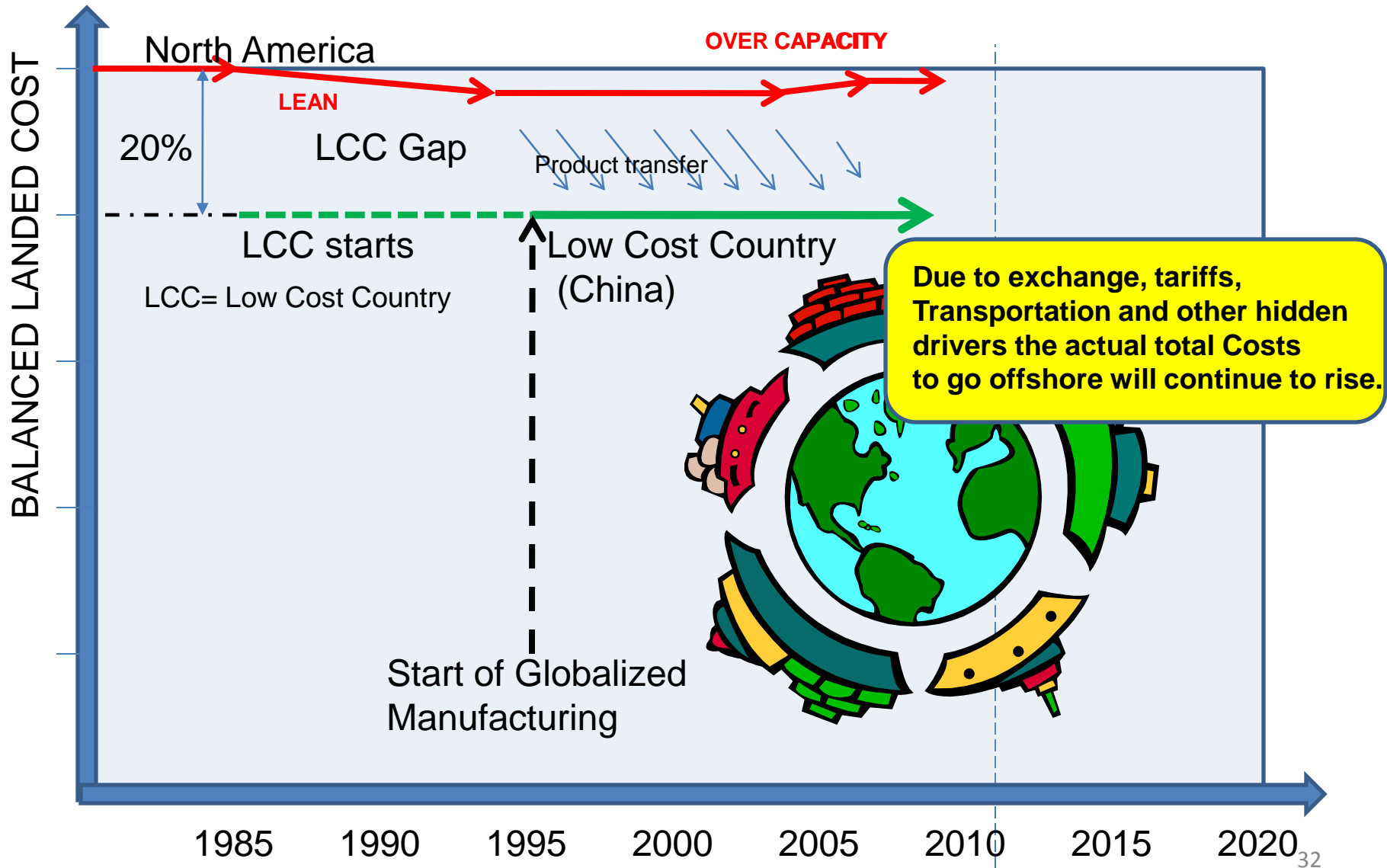


# A glimmer of hope !

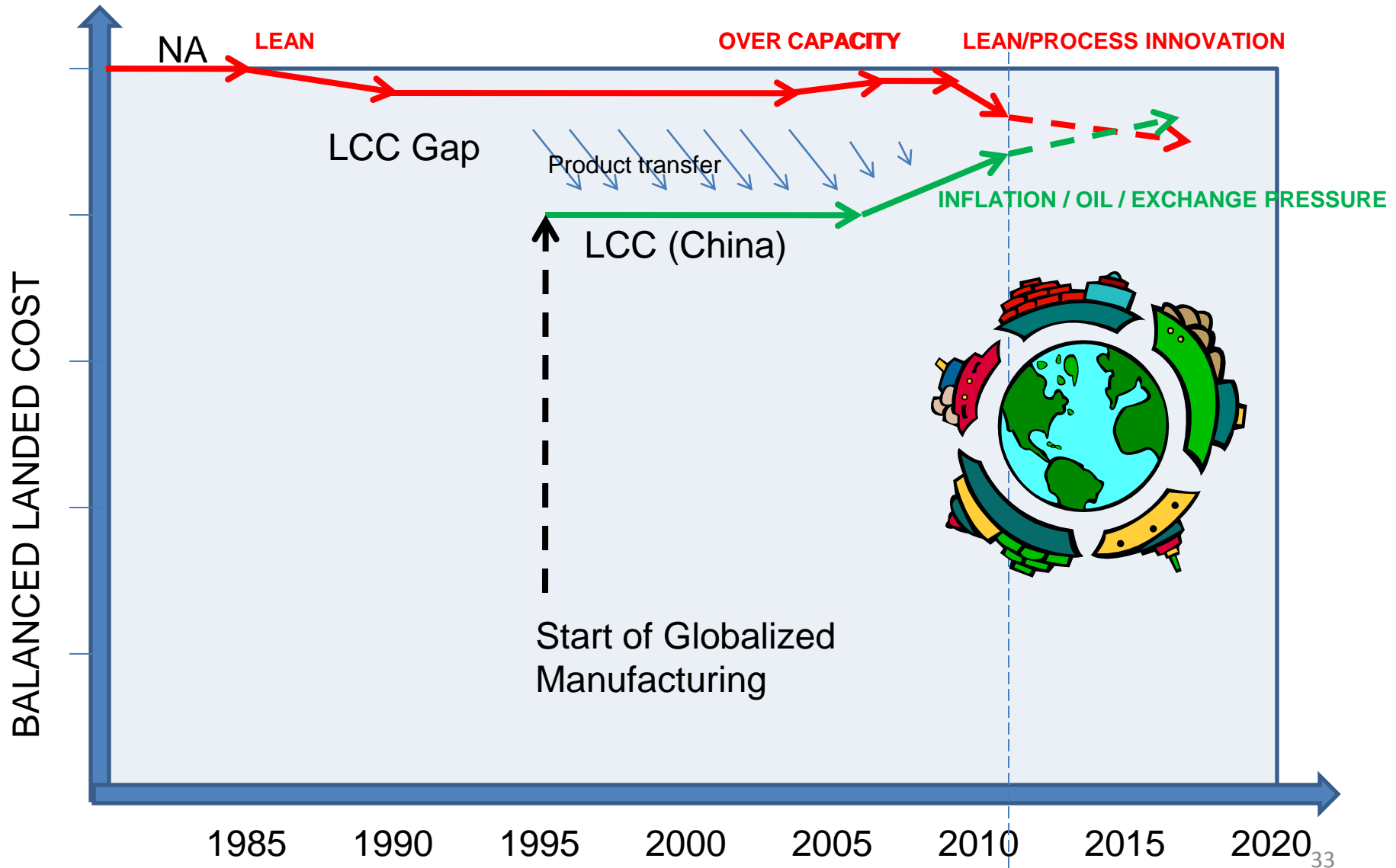


Society of  
Manufacturing  
Engineers

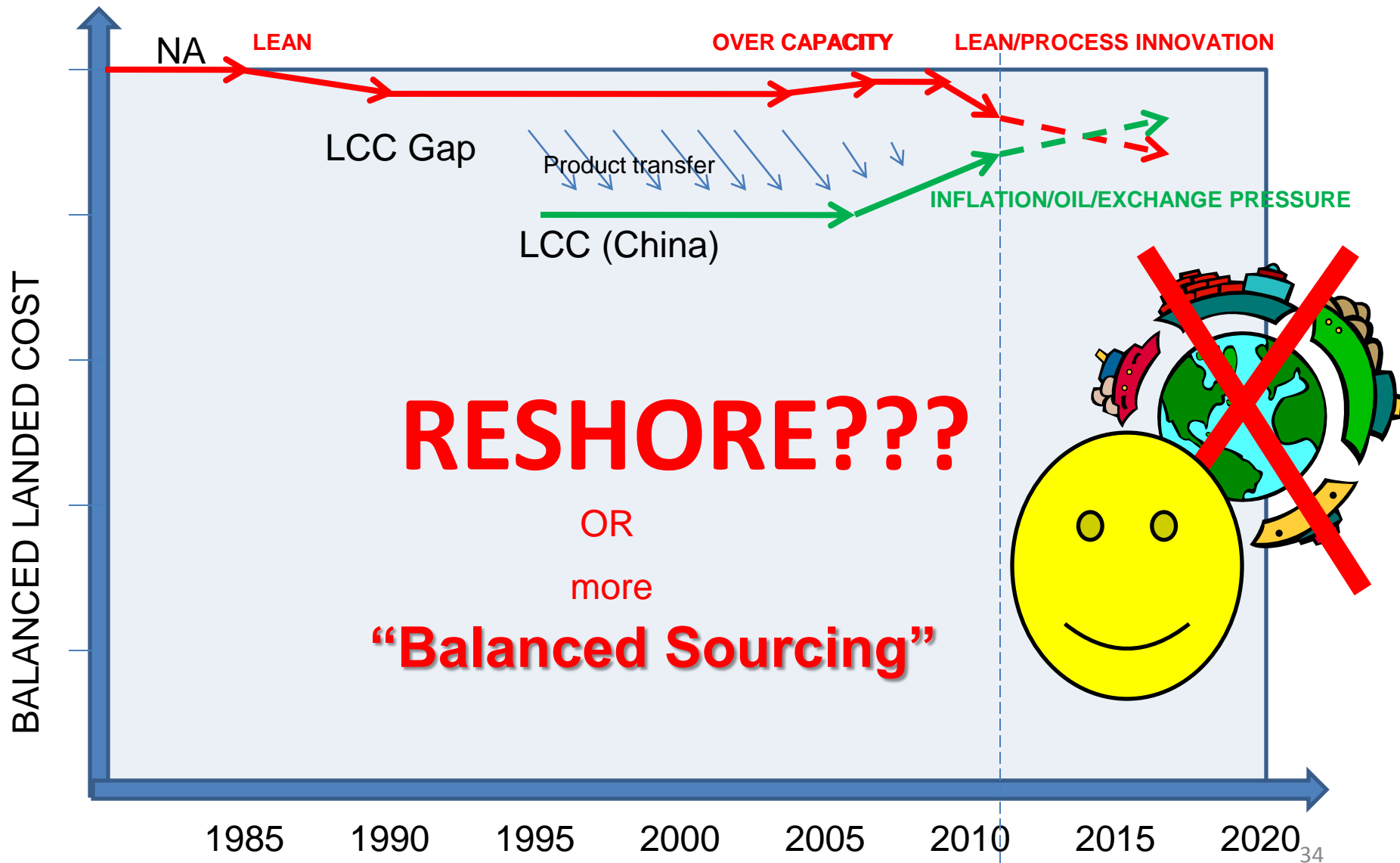
# The Global Competitive gap



# The Global Competitive gap



# The Global Competitive gap



# What is happening South of the border? .

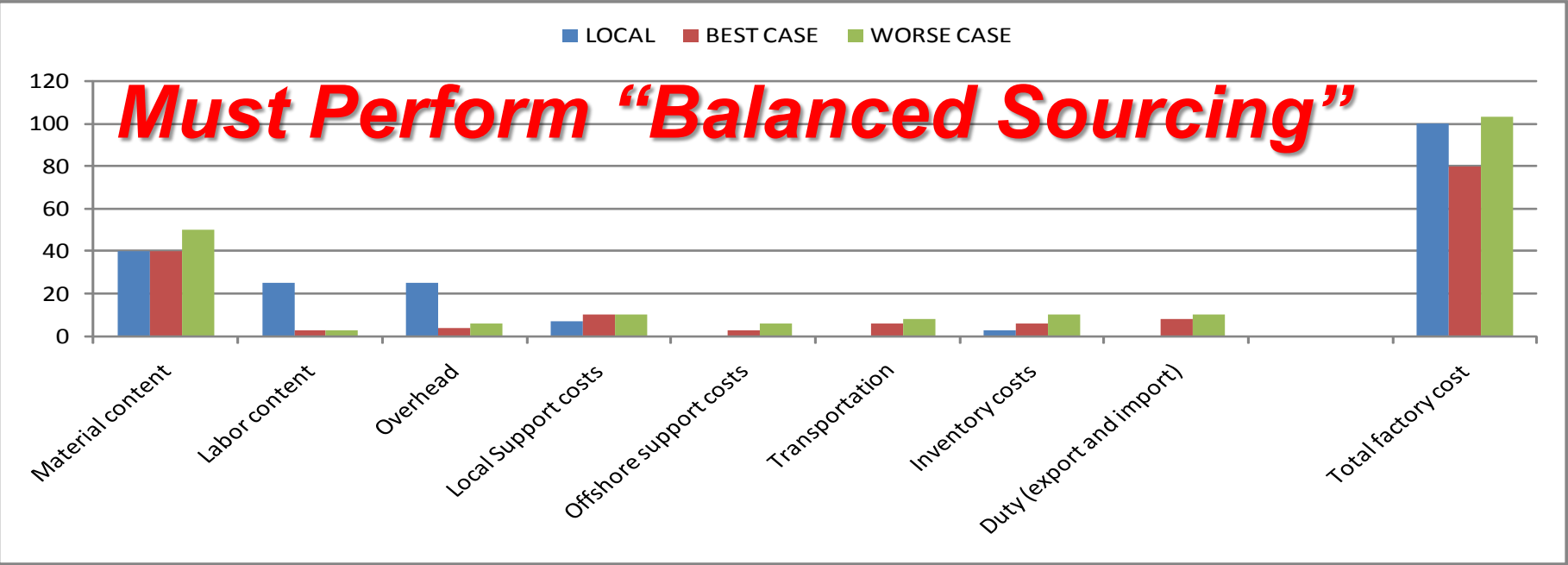
## Re-shoring !!!

- 2 Million jobs lost in USA in last 3 years and got back just 10%...  
(MUCH Larger ratio here in Canada..need to get them back!!)
- A resurgence of manufacturing in USA  
via
  - lower exchange rate
  - Rethinking of globalized supply
  - Re-shoring cost trade-off modeling and discussions.
- *Canada needs to participate!!!*
- *Need to do at least more “Balanced Sourcing”*

Q1. Do you understand the benefits versus all the direct and hidden costs and the types of sourcing and logistic options?

The chart below shows that when the product and source relationships and all the detailed support and logistics are optimized it is possible to see a 20% net gain in operating costs, however equally it does not take much poor optimization to see an overall net loss in the off-shore (outsourcing) journey. Many organizations have experienced this chart the hard way... You need to plan to avoid these issues.

OFFSHORE SAVINGS CAN GO POSITIVE OR VERY NEGATIVE

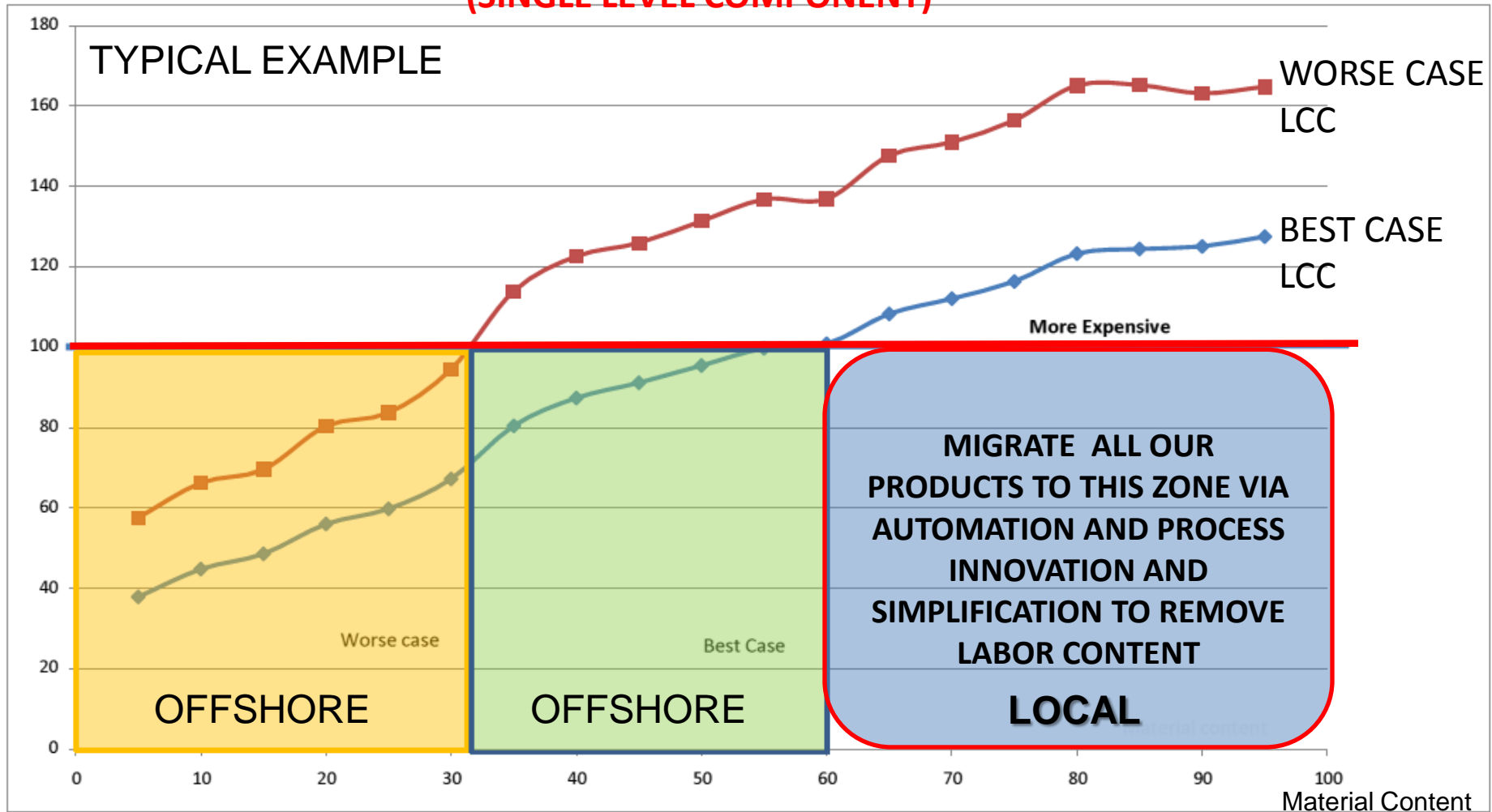


% of Total Cost	LOCAL	BEST	WORST	Issues
		OFFSHORE	OFFSHORE	
Material content	40	40	50	Foreign country materials may need harmonizing with your designs
Labor content	25	3	3	A clear advantage, but product skill and training may be an issue
Overhead	25	4	6	A lack of foreign management capability may effect 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

# OFFSHORE VERSUS LOCAL MANUFACTURING BY % LABOR CONTENT

% landed cost to local

(SINGLE LEVEL COMPONENT)



90

80

70

60

50

40

30

20

10

**% LABOR CONTENT**



*(NOT the lowest cost or LEAN or Green Global solution)*

The diagram illustrates two supply chain models. On the left, a pink circle represents the 'CHINA/ASIA Manufacturing recycle loop'. On the right, a blue circle represents the 'USA' and a red circle represents 'Canada'. A green arrow labeled 'Raw Resources' points from the USA/Canada area towards China/Asia. A red arrow labeled 'Long supply chain' points from China/Asia towards the USA/Canada area. A red arrow labeled 'Products' points from China/Asia towards the USA. A red arrow labeled 'Products' points from the USA towards Canada. Green curved arrows indicate internal recycling loops within the USA and Canada. Text on the left states 'NOT Lowest WASTE', 'NOT LEAN', and 'NOT GREEN'. Text on the right states 'Short supply chains JIT' and 'Alternative Leaner approach'. At the bottom left, it says '9000 km Each way MIN'. At the bottom right, it says '1000 km Each way MAX'.

NOT Lowest WASTE  
NOT LEAN  
NOT GREEN

Raw Resources

CHINA/ASIA  
Manufacturing  
recycle loop

Long supply chain

Products

Products

Canada

USA

Short supply chains **JIT**  
Alternative Leaner approach

9000 km Each way MIN

1000 km Each way MAX

**Short supply chains *JIT***  
**Alternative Leaner approach**

1000 km Each way MAX  
1 week Transit Inventory Max  
\$10/M cube to transport Max  
Few Transactions

# Global Supply Chain

(A very long Cycle Time)

Emerging Economy

Mature Economy



# INSANITY





# **Take Back Manufacturing**

## **The Now situation**

(Measured over the last 10 years + .... USA and Canada)

**Stock market instability**  
**Corporate cash (Excess)**

**Very Low Interest rates**

**Diminishing Technical education**

**Increasing Cost of oil**

**Increasing Commodity prices**

**Mid to low Industrial investment**

**Reduced Consumer confidence**

**Government budget deficit**

**Growing North American Trade deficit**

**Increased resource based economy**

**Unemployment up** (Certainly in value adding sectors)

**Less Career opportunities for next generation**

**Increased Cost of living**

**Prosperity dropping**





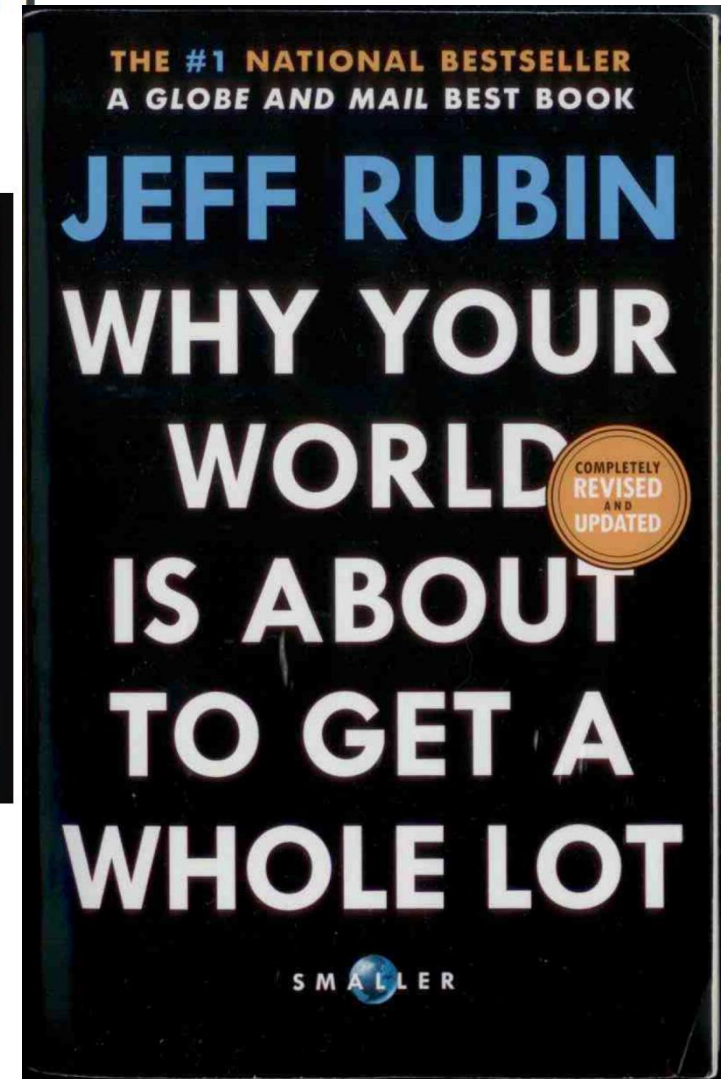
# Oil and the End of Globalization : Jeff Rubin

by ASPO-USA PLUS

11 months ago



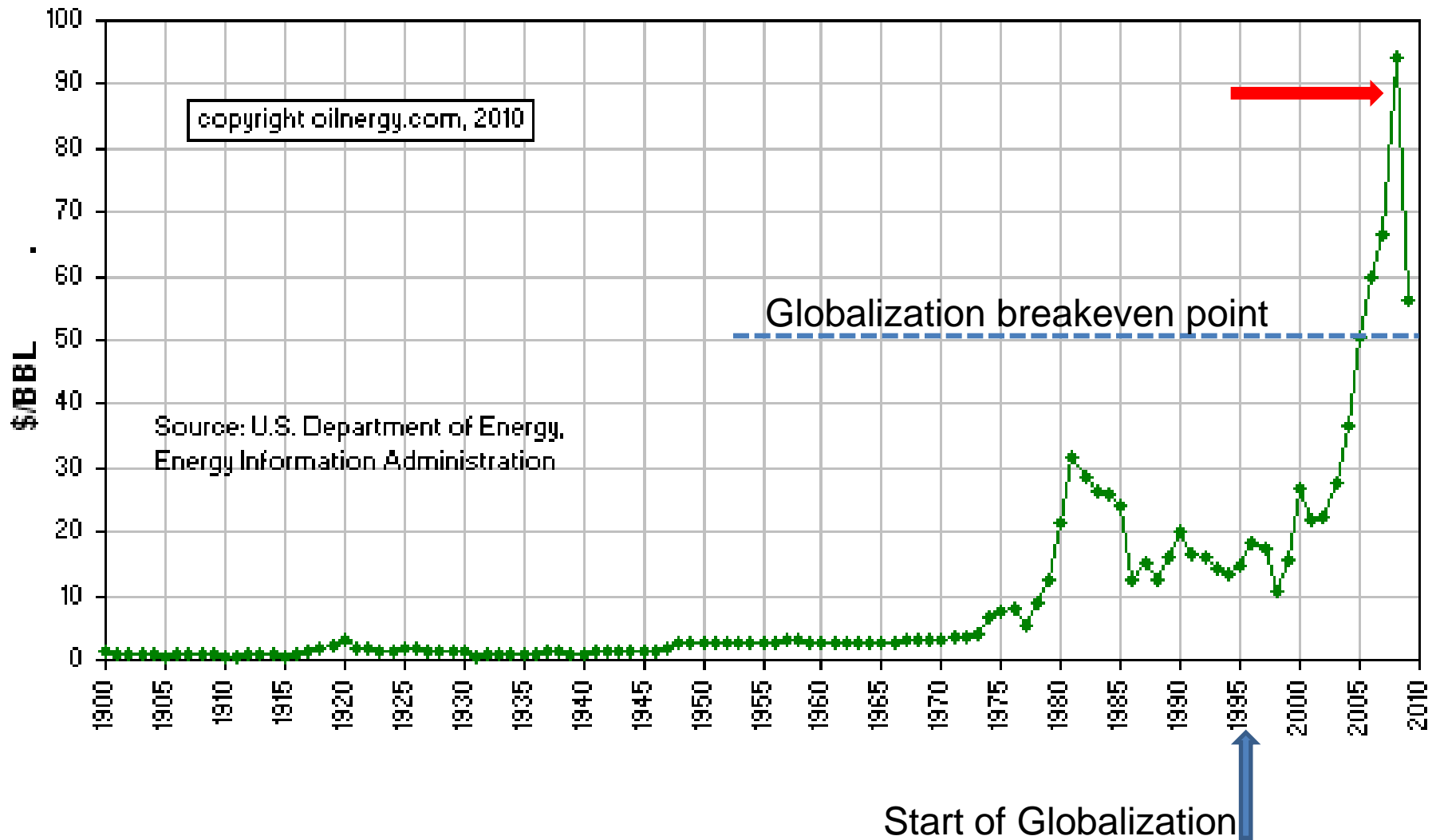
Mr. Jeff Rubin, Author, Former CIBC Chief Economist  
for more information visit [aspo.tv/](http://aspo.tv/)



**We will not run out of Oil...**

**.....but we will run out of Oil we can afford to burn!!**

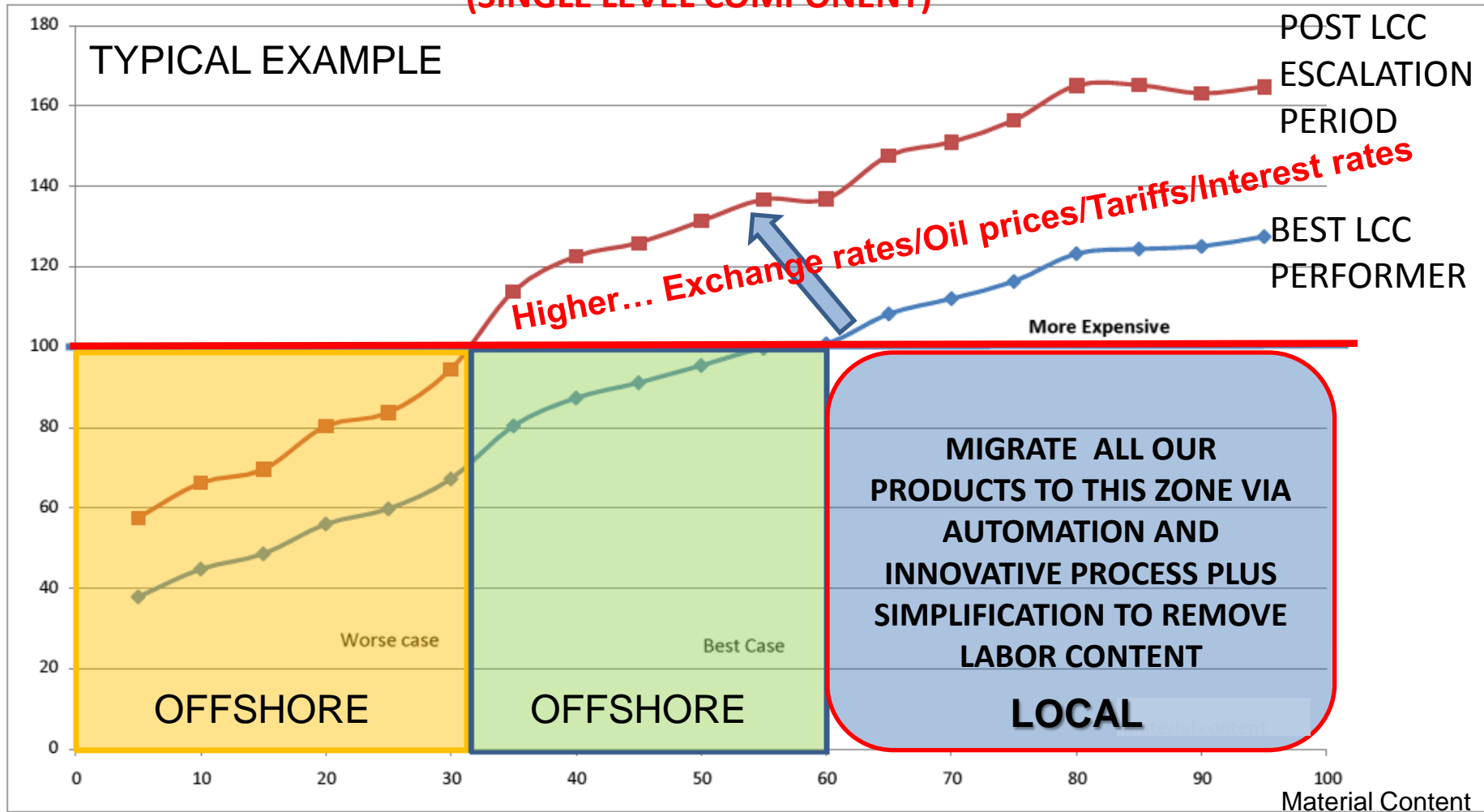
## Crude Oil Prices in USDs



# OFFSHORE VERSUS LOCAL MANUFACTURING BY % LABOR CONTENT

% landed cost to local

(SINGLE LEVEL COMPONENT)



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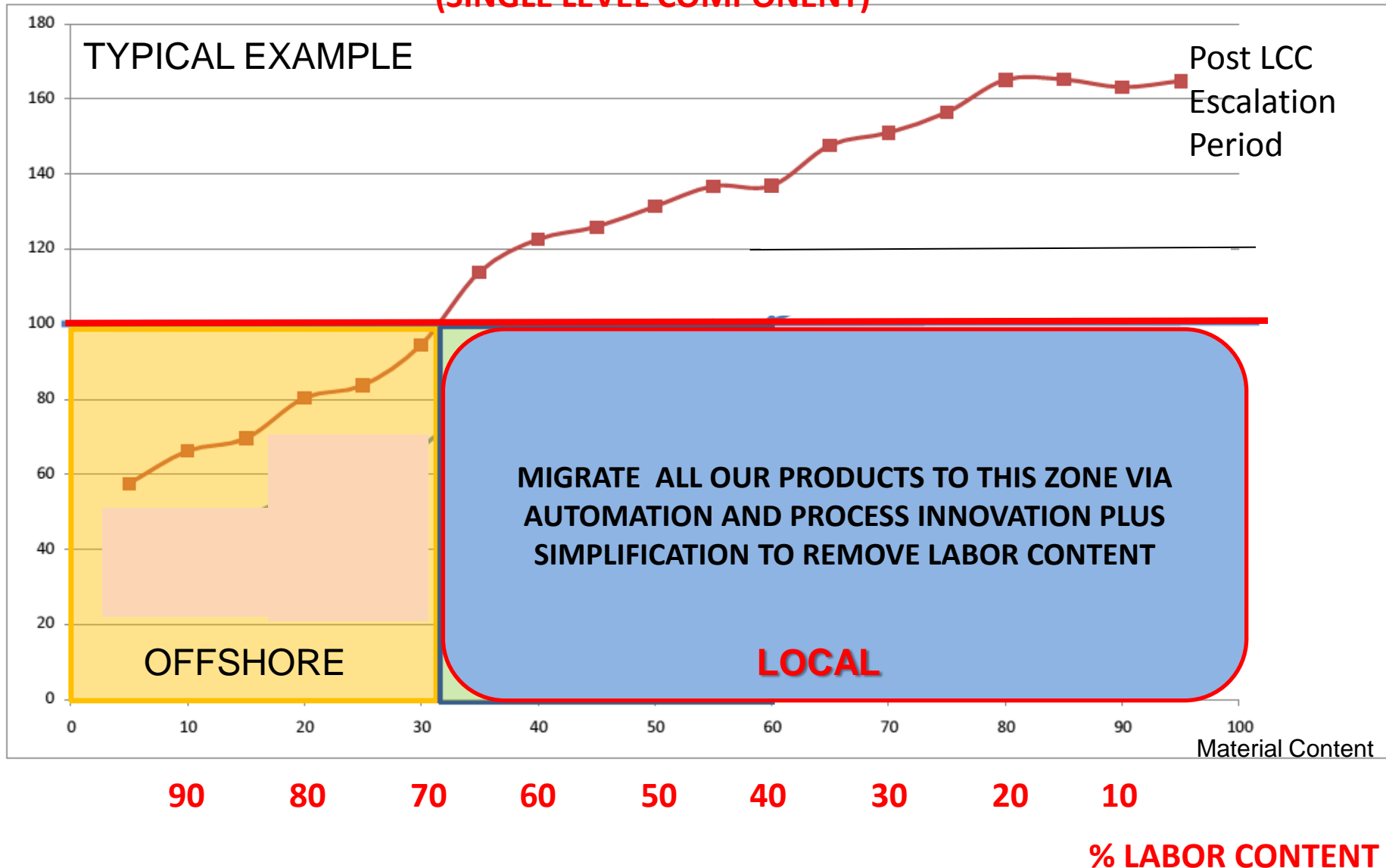
% LABOR CONTENT



# OFFSHORE VERSUS LOCAL MANUFACTURING BY % LABOR CONTENT

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# **Take Back Manufacturing**

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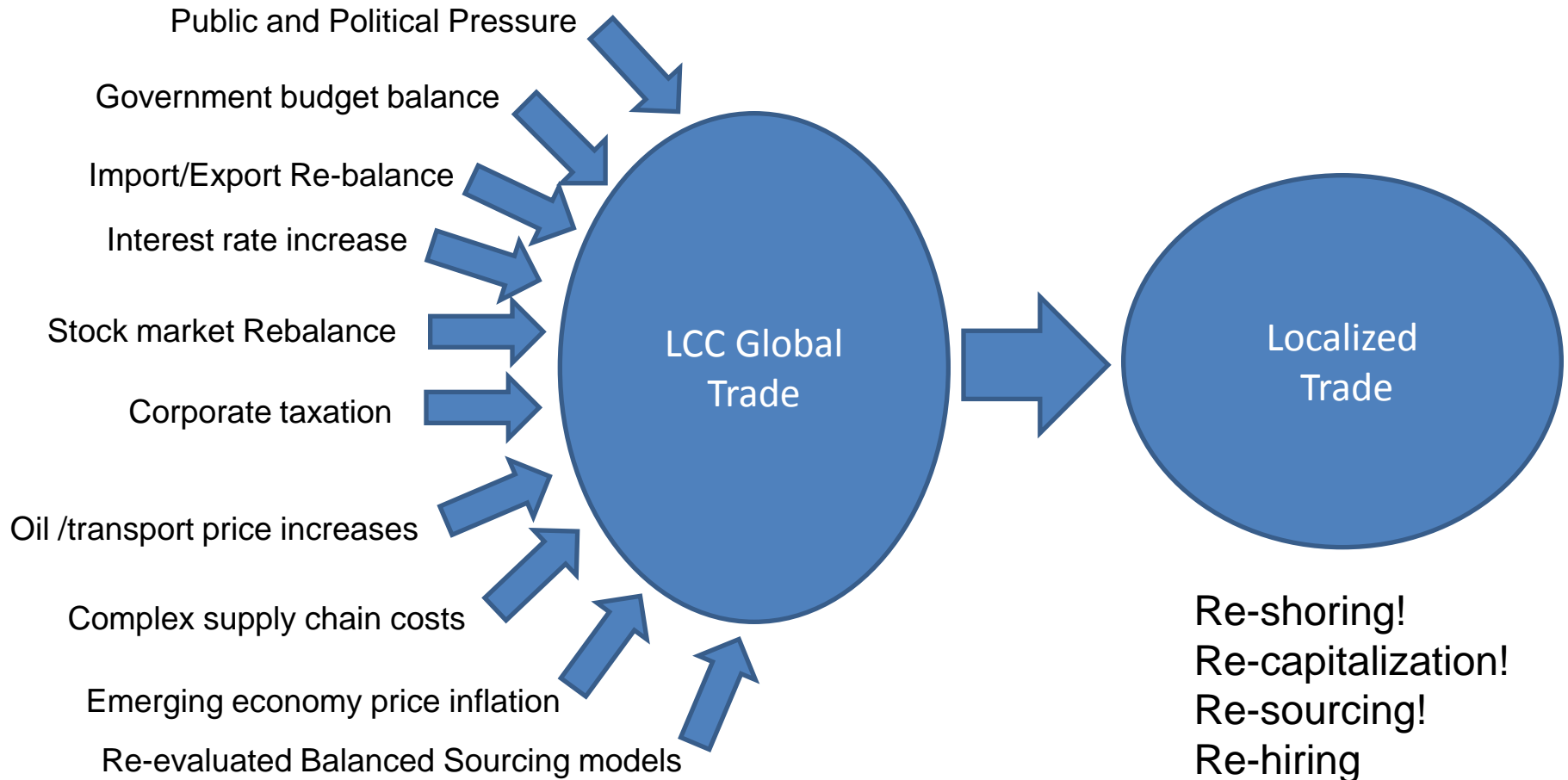
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**Increased resource based economy**  
**Unemployment up** (Certainly in value adding sectors)  
**Less Career opportunities for next generation**  
**Increased Cost of living**  
**Prosperity dropping**  
**Faith that Canada is a good place to live**

***Not so good***

# THE FUTURE

**(The Near future)**

# New Pressures on LCC Globalization (Resource & Product Transfers)



**We will meet G20 deficit and debt targets well ahead of schedule.**

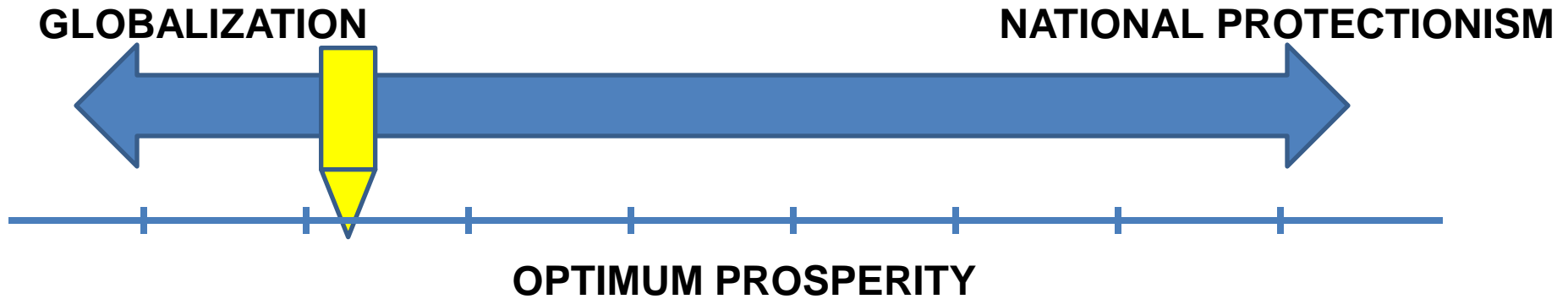
**Yet we also are implementing a Pro-jobs and growth agenda that is focused on promoting investment, hiring and retention of workers affected by the Global economic downturn.**

**Stephen Harper**

**13<sup>th</sup> October 2011**

**Globe and Mail**

# RESET THE ECONOMIC BALANCE



Job loss

Trade Imbalance

Over cheap products

Economic Bubbles

Market volatility

Wealth transfer

Job Stagnation

Lower export opportunity

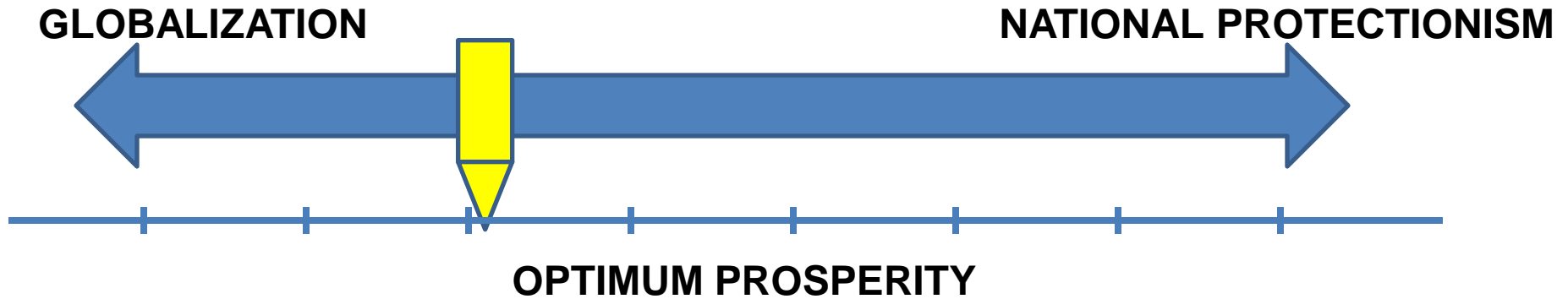
Over expensive products

Exclusion from global growth

Capital immobility

Reduced growth

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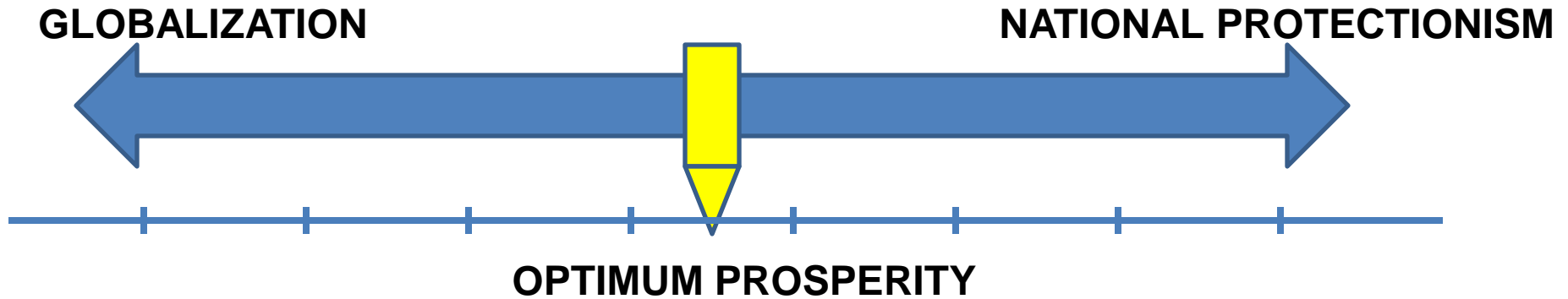
Exclusion from global growth

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# RESET THE ECONOMIC BALANCE



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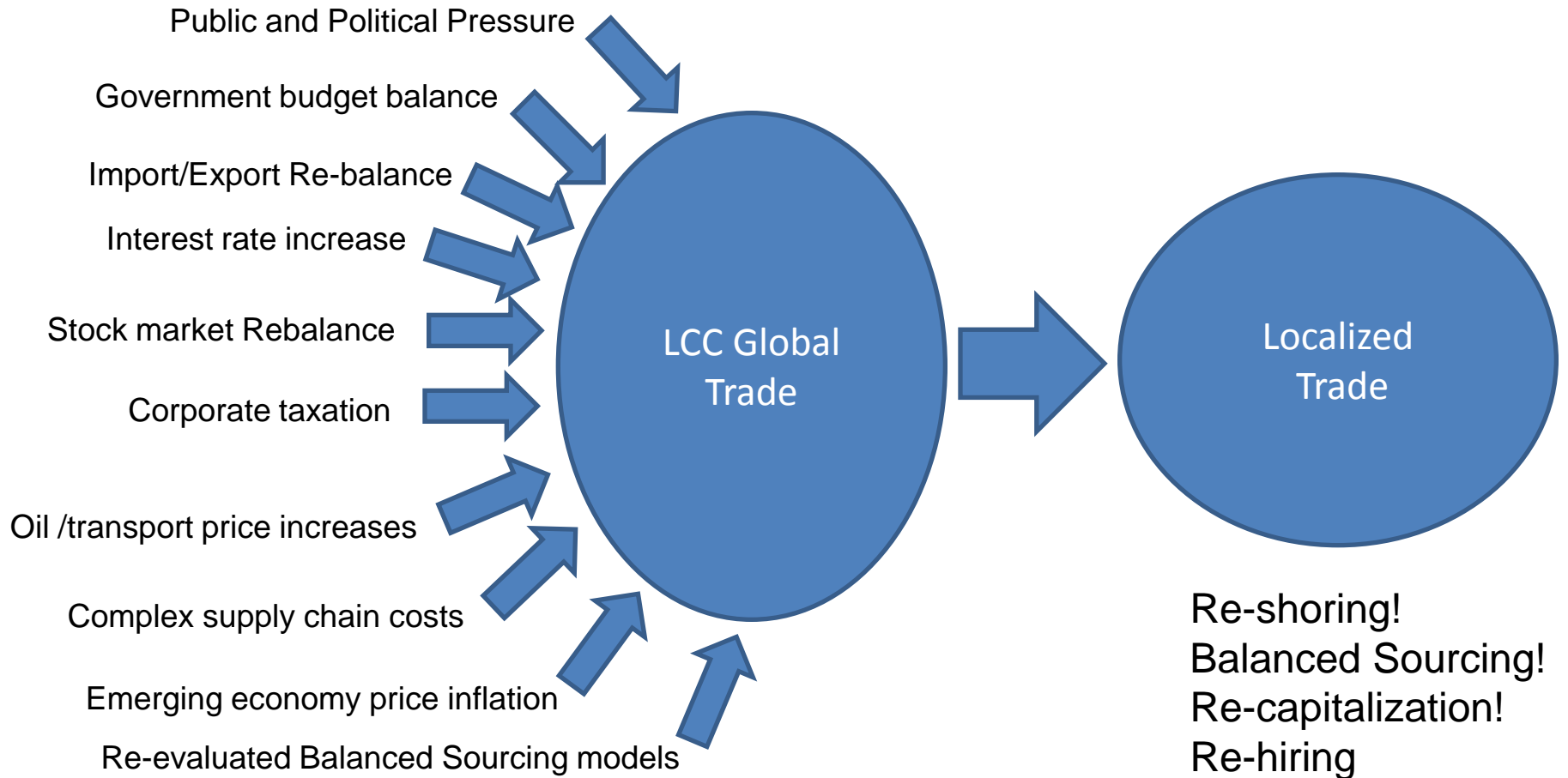
Over expensive products

Exclusion from global growth

Capital immobility

Reduced growth

# New Pressures on LCC Globalization (Resource & Product Transfers)



**Looks like TBM !!!**

***BUT***

***Are we ready???. ....***

# WHY NOT?

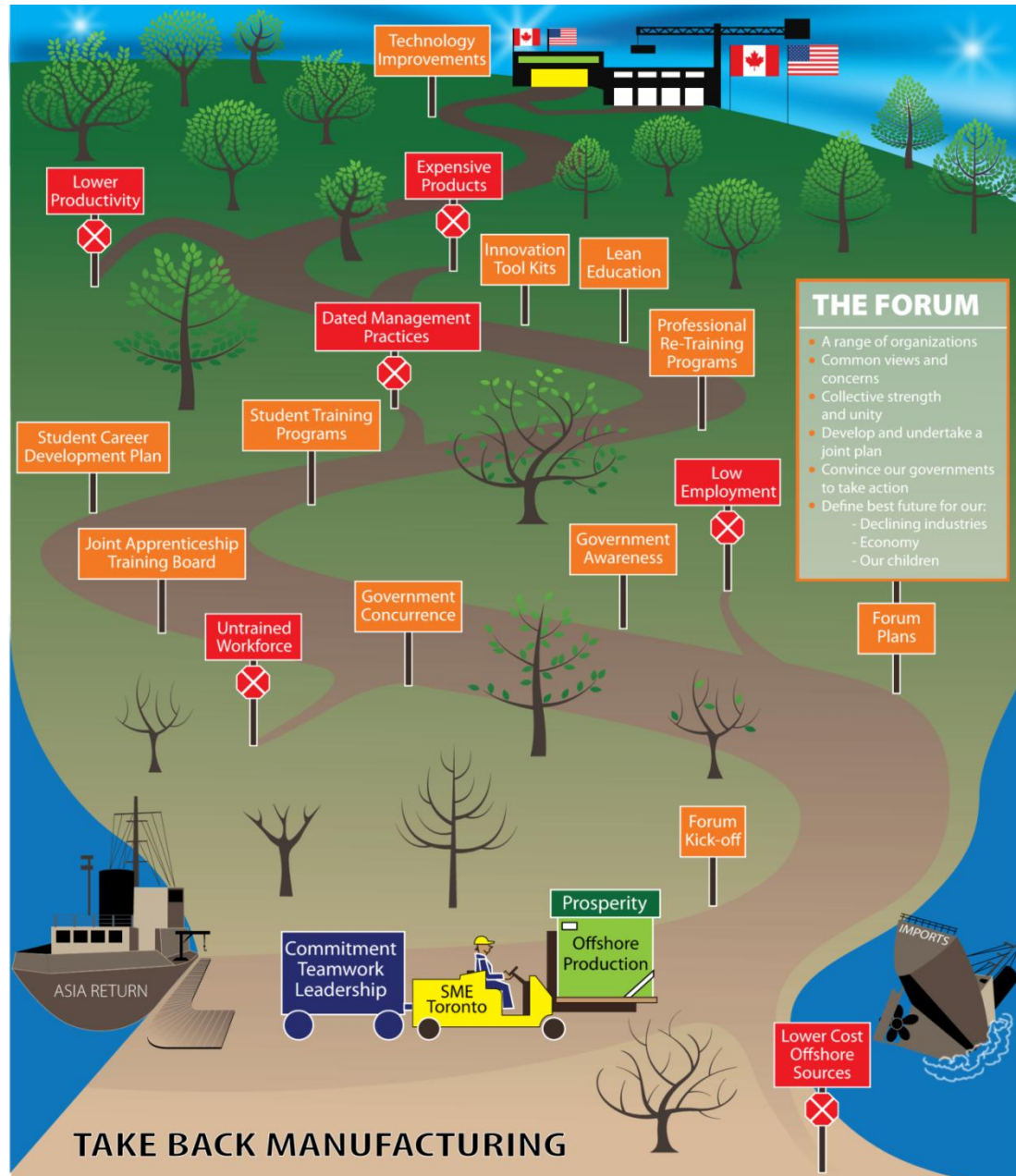
- **We already have the resources here**
- **We still have the know-how and skills.**
- **We have our consumers here.**
- **We have our investments here**
- **We have our futures here**

# 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**
- **Why should we import ALL the manufactured goods and export all our value added wealth and prosperity?**

# THE TBM ROADMAP

# Take Back Manufacturing ROADMAP





# TBM ROADMAP PLAN

```
graph TD; PF[Planning Forum  
9th June 2011] --> TAP[TBM Awareness presentations  
Ongoing]; TAP --> GC[Government Concurrence]; TAP -.-> SS[Sector specific]; TAP --> TS[TRADE SHOWS]; GC --> GPP[Government policy Proposal]; GPP -.-> SS; GPP --> JETB[Joint Education & Training board]; GPP --> MTD[Manufacturing Technology development]; JETB --> ATS[Apprenticeship Training System]; JETB --> PRS[Professional Re-training System]; JETB --> CDP[Career Development Plan]; MTD --> LPE[LEAN Process Education]; MTD --> ITK[Innovation Tool-kit]; MTD --> PPT[Productivity Tools]; MTD --> NMP[New Management practices]; MTD --> ICP[Improved capitalization]; MTD --> OITB[Other Initiatives TBD]; TS --> FTS[Fall Trade Shows];
```

The diagram illustrates the TBM Roadmap Plan, organized into three phases:

- Phase 1:** Planning Forum (9th June 2011) leads to TBM Awareness presentations (Ongoing).
- Phase 2:** TBM Awareness presentations lead to Government Concurrence, which leads to Government policy Proposal.
- Phase 3:** Government policy Proposal leads to Joint Education & Training board and Manufacturing Technology development.

**Support local Government Election process** (Callout for Phase 1)

**Government policy Proposal** (Central node in Phase 2)

**Joint Education & Training board** (Node in Phase 3)

**Manufacturing Technology development** (Node in Phase 3)

**SME/TBM Fall 2011 Events** (Callout for Phase 3)

**TRADE SHOWS** (Node in Phase 1)

**Fall Trade Shows** (Callout for Phase 1)

**GOVERNMENT'S POLICY FOCUS** (Listed under Government policy Proposal)

- TAX POLICY
- TRADE POLICY
- EDUCATION POLICY

**Apprenticeship Training System** (Listed under Joint Education & Training board)

**Professional Re-training System** (Listed under Joint Education & Training board)

**Career Development Plan** (Listed under Joint Education & Training board)

**LEAN Process Education** (Listed under Manufacturing Technology development)

**Innovation Tool-kit** (Listed under Manufacturing Technology development)

**Productivity Tools** (Listed under Manufacturing Technology development)

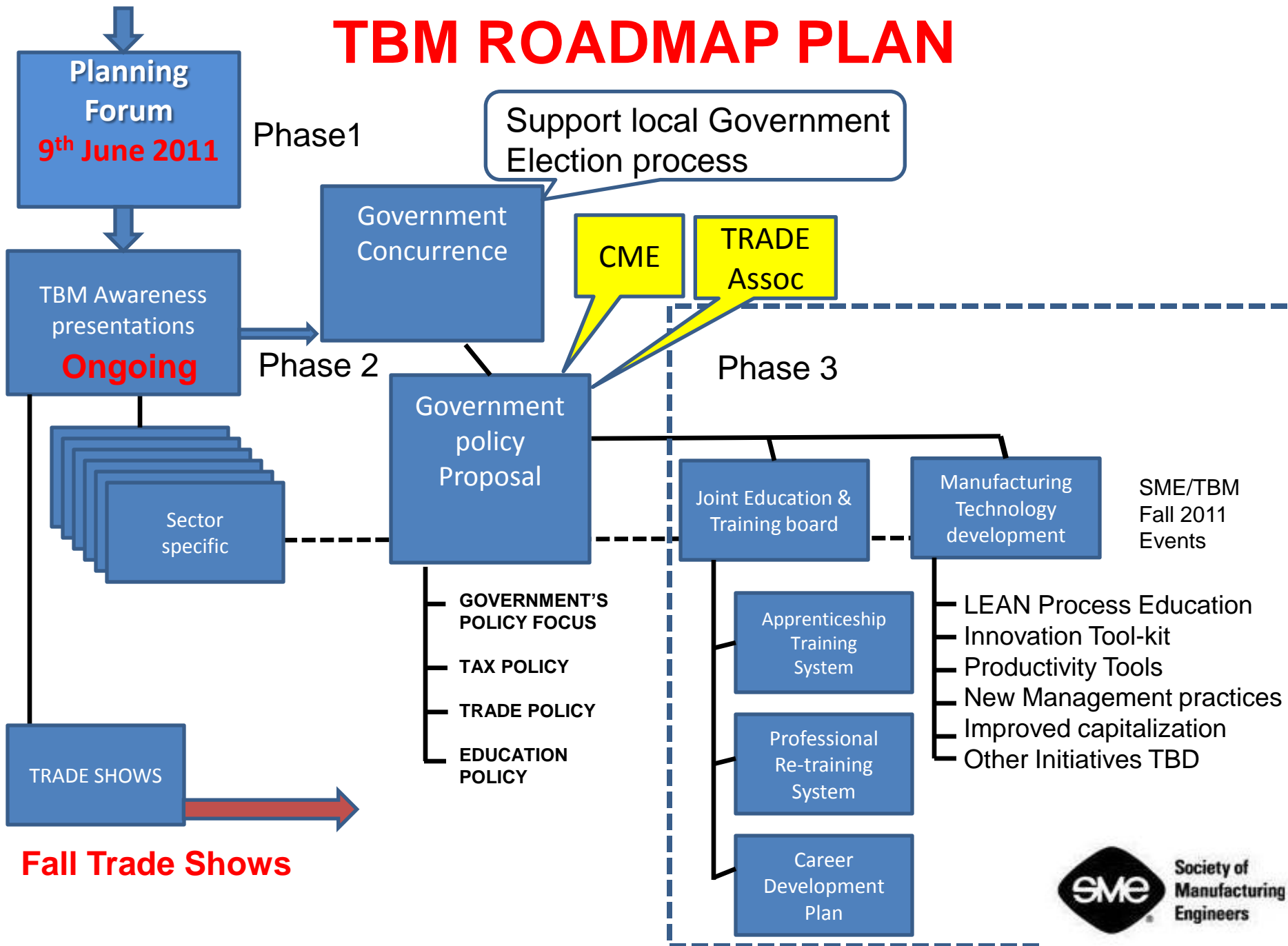
**New Management practices** (Listed under Manufacturing Technology development)

**Improved capitalization** (Listed under Manufacturing Technology development)

**Other Initiatives TBD** (Listed under Manufacturing Technology development)

**SME** (Logo of Society of Manufacturing Engineers)

# TBM ROADMAP PLAN



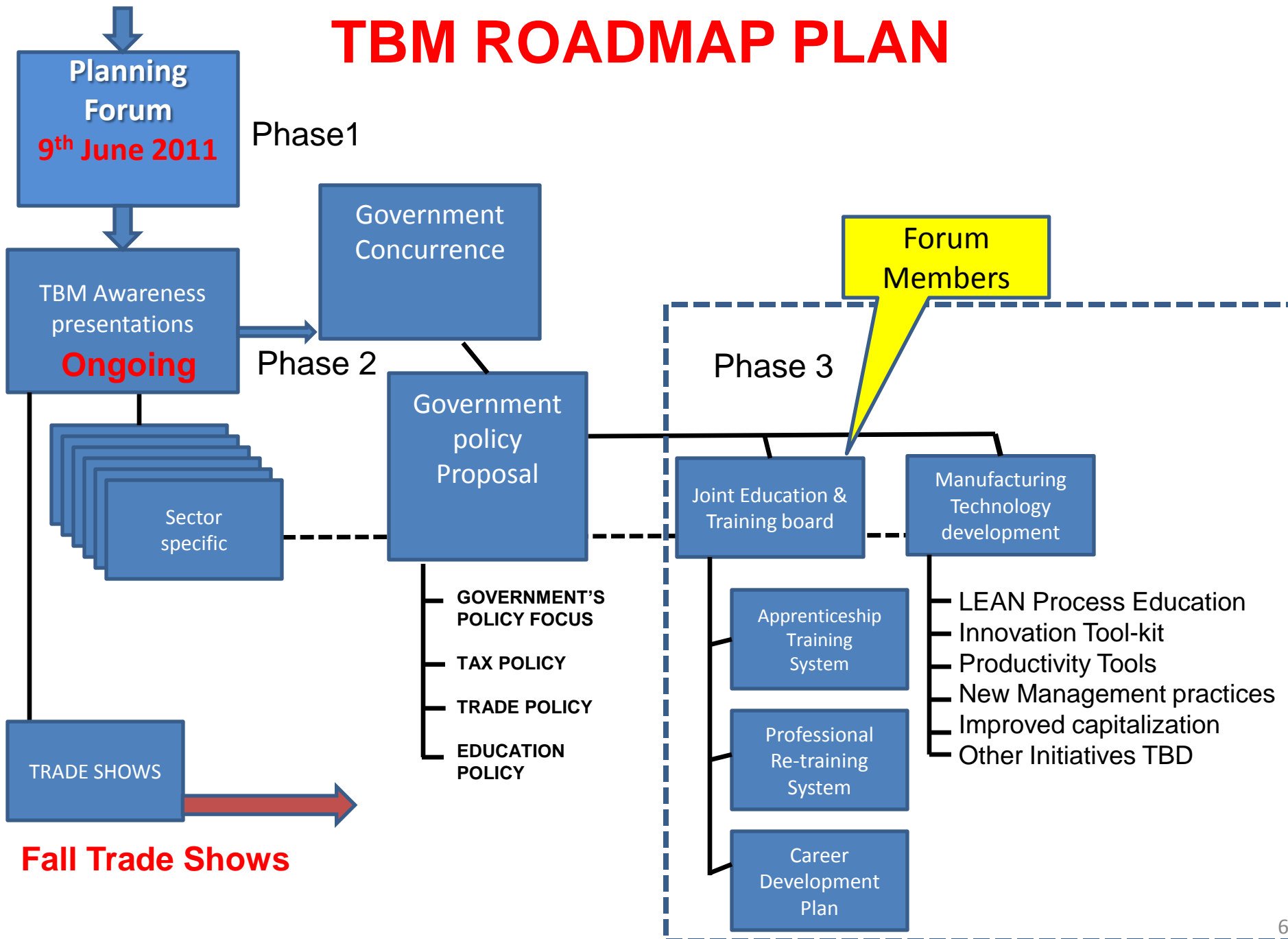
# CME 8-point Plan for a more competitive Canada

- 1 Lower taxes on those businesses that are investing in new products, new technologies, and the skills of their employees.**
- 2 Extend the two-year straight-line depreciation for investments in manufacturing and processing machinery and equipment.**
- 3 Encourage innovation and the commercialization of new products and technologies. Also, Improve SRED and make easy to use and apply to all facets of a business.**
- 4 Help businesses develop and take advantage of international opportunities. We need to fight unreasonable protectionism and negotiate and enforce meaningful trade rules.**
- 5 Enhance the competitiveness of North America's integrated industries supply chains. (Canada-US border and regulatory differences)**
- 6 Improve the quality and availability of skilled workers. Focus on Real apprenticeship system across trades and technologies.**
- 7 Strengthen Canada's energy and logistics infrastructure. (Secure, stable and cost competitive energy, transmission, transportation, and communications)**
- 8 Improve regulatory efficiency. (Modernize legislation, eliminate regulatory differences, simplify compliance requirements, remove wasted efforts.**

# SUMMARY

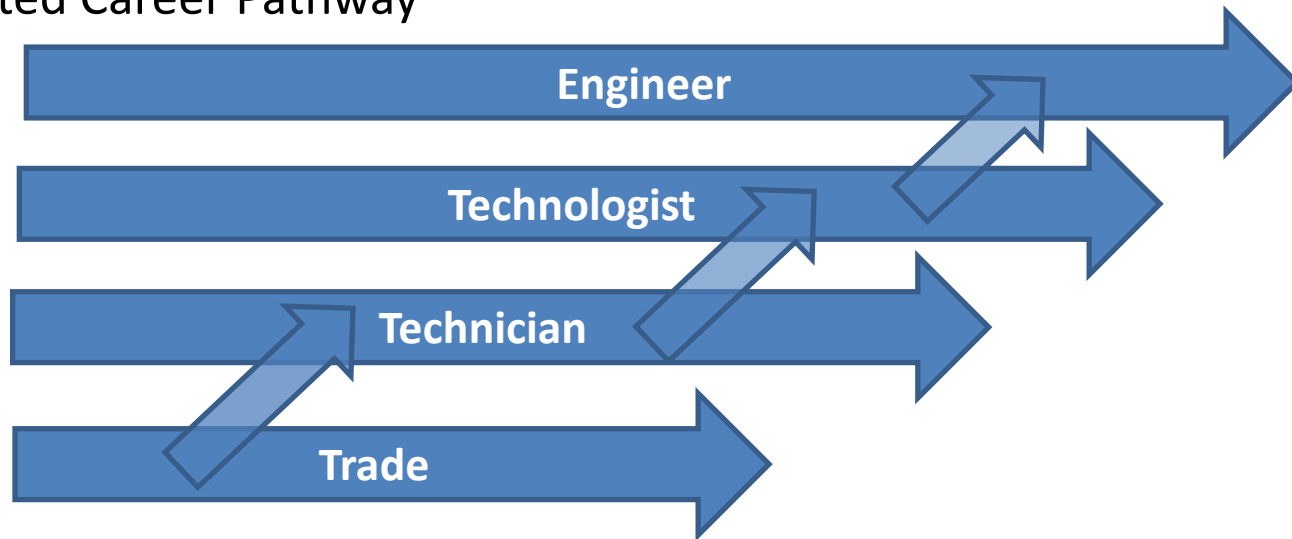
- We want to balance country level Imports and Exports. (without over reliance on natural resources)
- Earn the right to boost value adding Exports.
- This means Engineered Manufactured products.
- This means that we will need a strong domestic Redeveloped manufacturing base to provide the strength to undertake this.

# TBM ROADMAP PLAN



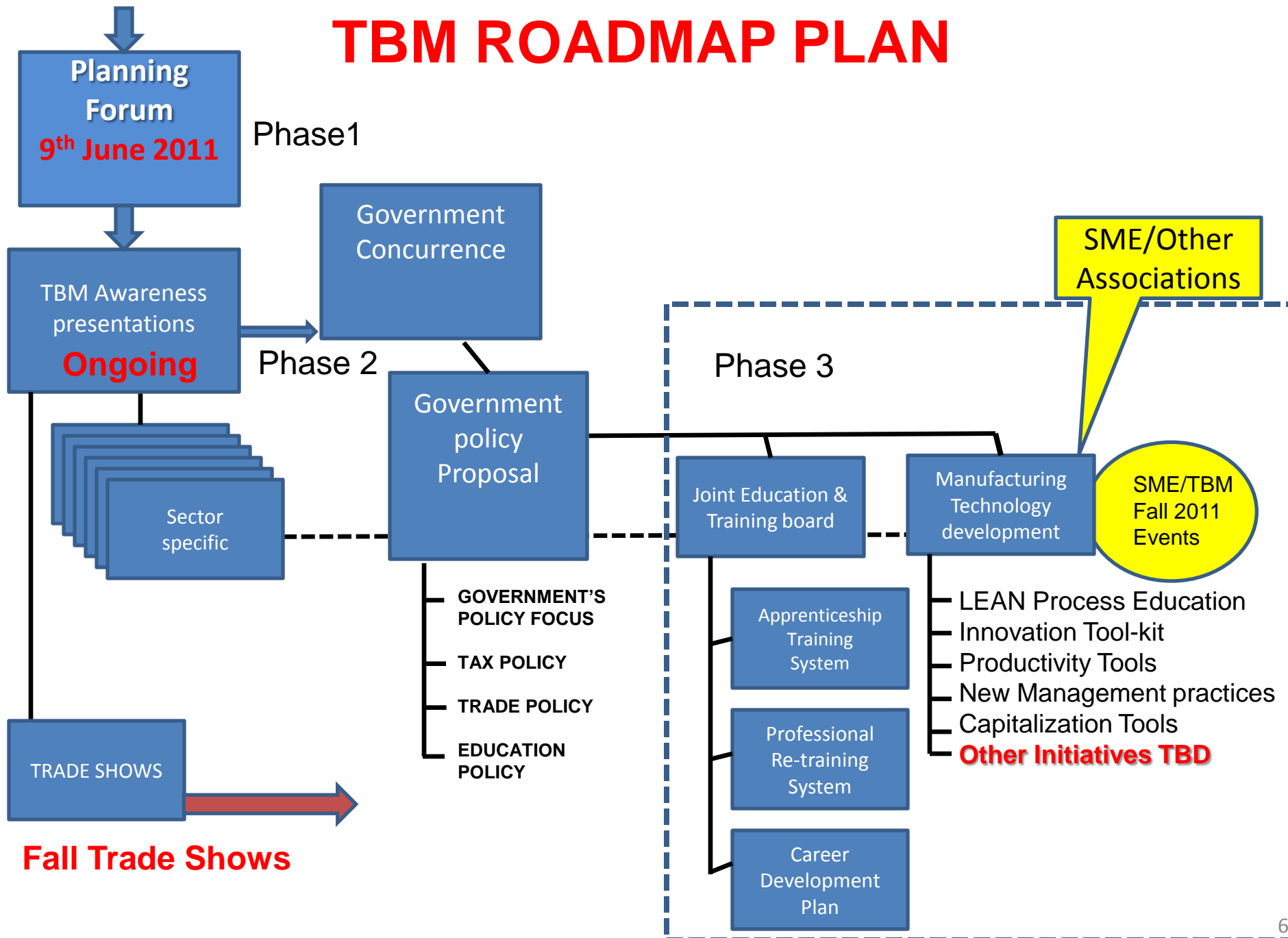
# Recommend: New Apprenticeship Training VISION

- Integrated Career Pathway



- Industry Recognized Skills Development Progression
- Apprenticeship Pool From The Best, the Brightest And The Most Talented
- Starts In High School And Recognized As Most Valuable Component Of Workforce Development By Industry And Community
- Become The Learning/Occupation Destination Of Choice By High School Students
- Corp Apprenticeship Courses Are Transferrable And Articulated To Other Post Secondary Colleges And Universities, Supporting Lifelong Progression In Learning As Shown In Career Pathway Above

# TBM ROADMAP PLAN



# **Manufacturing Technology Development**

## **The SME Knowledge Roadmap.....**

**MEET | KNOW | GROW.....Take Back Manufacturing**

SME and the TBM forum members offer this Evolution Roadmap for your TBM quest.

Sign-up for TBM as an SME member and Take Back Manufacturing for your business.

We will guide you through a “Self positioning survey” to get your team involved in the journey.

We can assist you define how your organization should approach its own specific TBM Evolution plan.

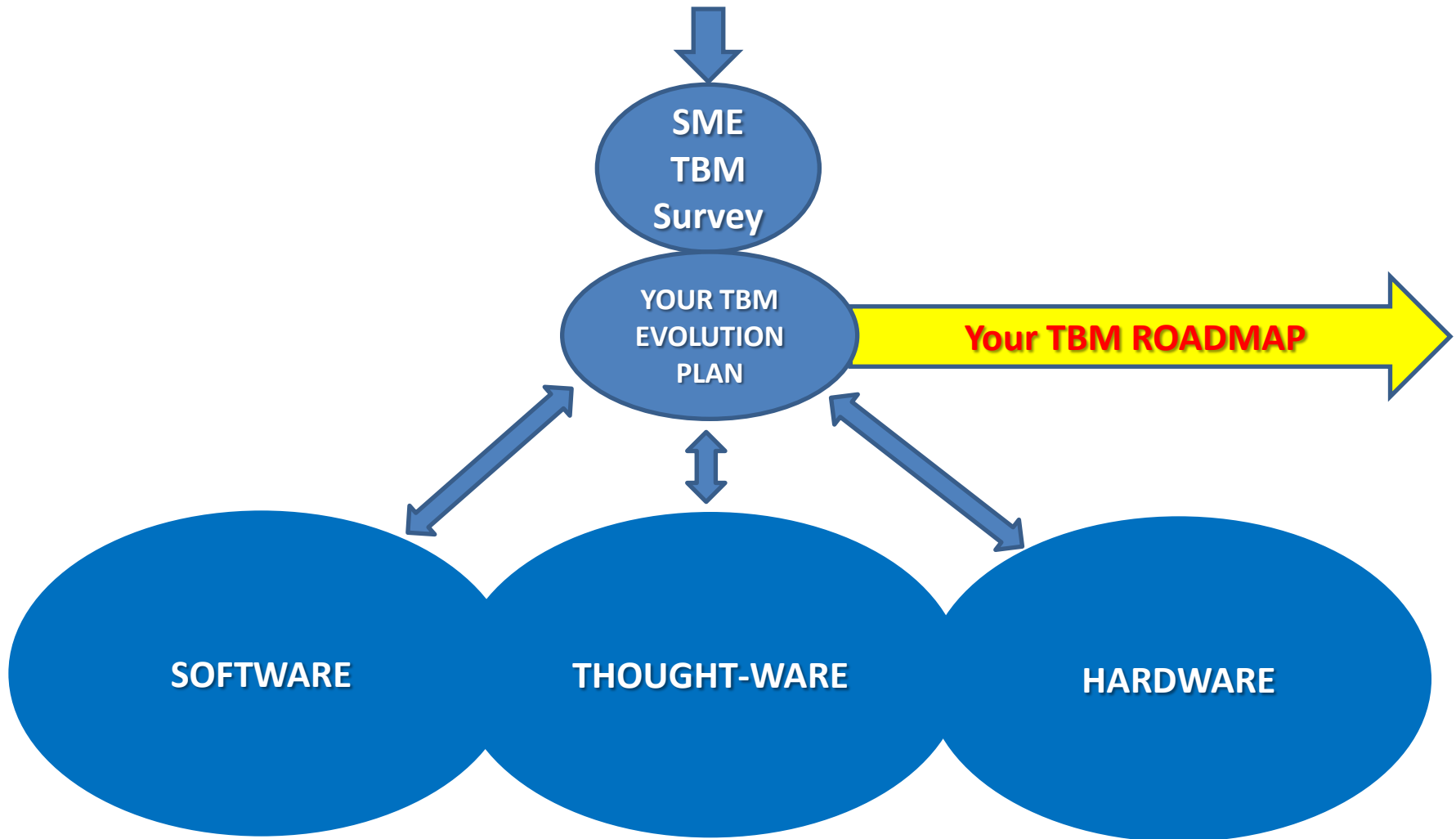
We ask ...do you have the Thought ware / Software / Hardware to be successful!!!!

Then you decide how to engage your team in the TBM knowledge Roadmap.



# The SME Knowledge Roadmap.....

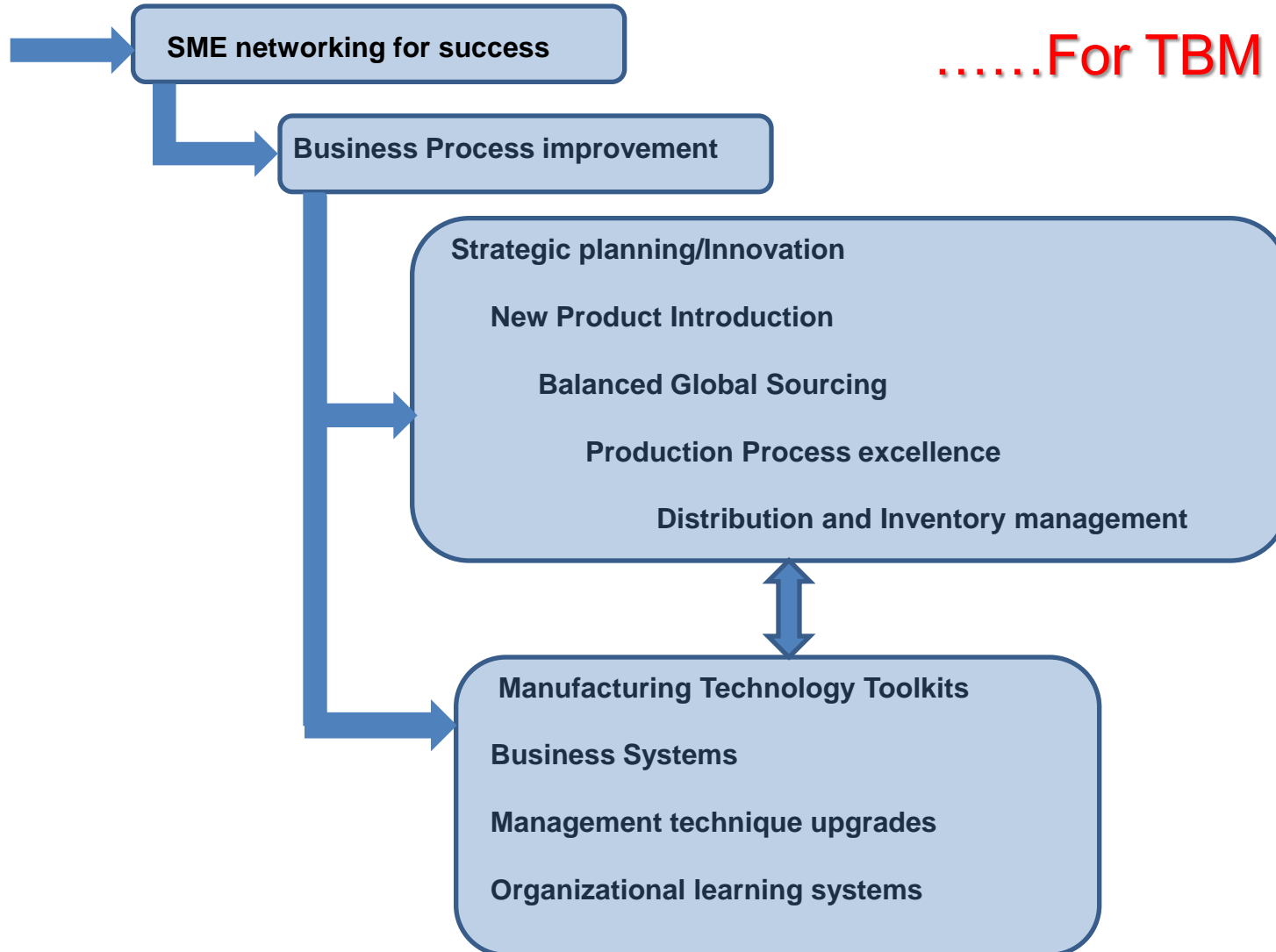
**MEET KNOW GROW**



# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....

.....For TBM advantage



# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....

.....For TBM advantage

SME networking for success

Business Process improvement

Planning/Innovation

## SME networking for success

SME positioning survey for TBM..... *Self calibrating your organizational capability.*  
SME Evolution planning for success....*The journey to Meet /Know /Grow*  
How to attend a trade show for strategic advantage...*rediscover the art form.*  
SME swop meet... *an online debating environment for our new MFG Practitioners*  
Emerging New Manufacturing Technologies... *an open forum to MEET/KNOW/GROW*  
SME Student chapter symposium... *let's get the new blood involved.*

Management technique upgrades

Organizational learning systems

# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....

.....For TBM advantage

SME networking for success

Business Process improvement

Strategic planning/Innovation

Product Introduction

## Business Process improvement

Lean benchmarking and workshop... *where are YOU on the curve?*

Lean operational tours... *what others are doing?....what can we learn?*

Lean certification and beyond... *formalizing the improvement journey.*

New interactive performance measurements ..... *The driver for business excellence.*

LEAN accounting and Cost estimating seminar..... *Making the better cost decisions*

Cost Of Poor Quality systems for measured improvement..... *Essential tools*

Organizational learning systems

# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....



## Strategic planning/Innovation

Executive workshop for Global success.... Join others to hone your own strategic plans.

Lean Business awareness building workshops... how to get started or restarted

How to improve the operation of a small business..A 6 step process for owners

Market and business planning.... a way of life across the organization

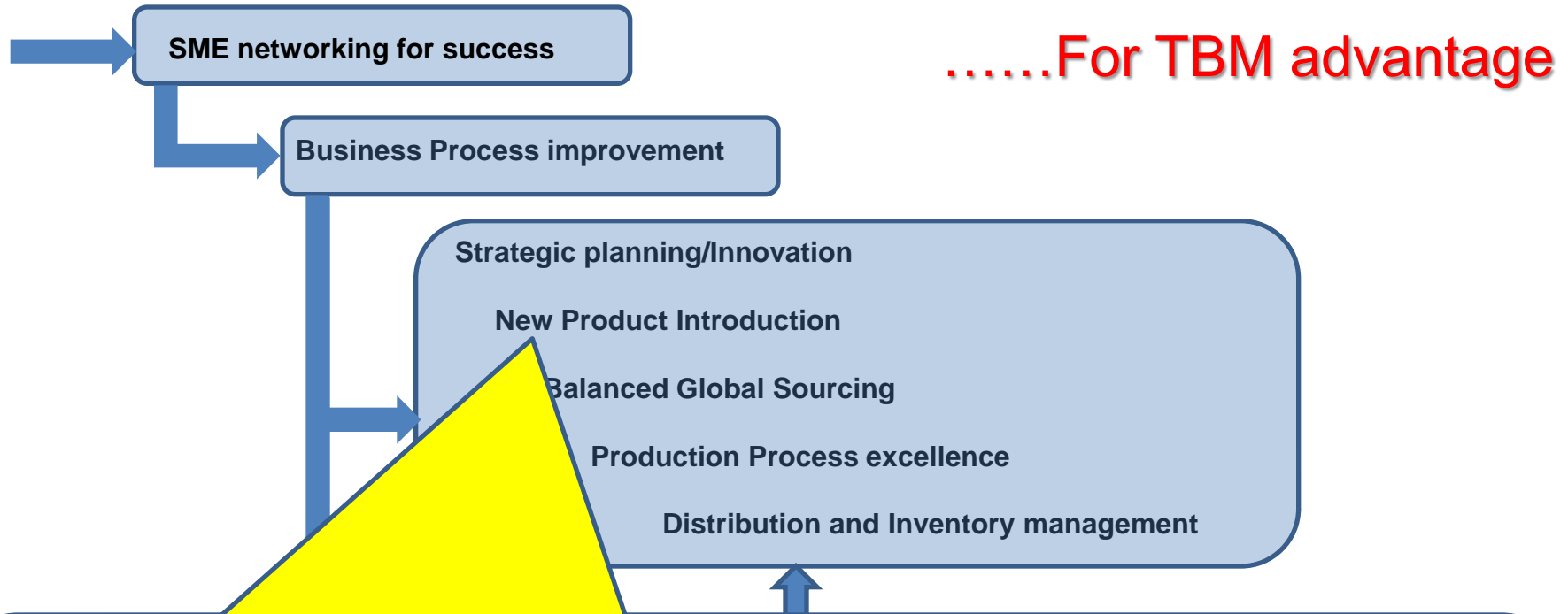
Innovation 101 .....and how to implement.

Innovation incubation.....Integrating the internal organizations together

Recapitalizing the business process for flexibility and maximum payback

# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....



## New Product Introduction

**NPI collaboration and control systems.....** The forgotten yet critical business process

**New product/New manufacturing process integration..** A step by step process

**Six Sigma/DFM .....**getting results but keeping it simple!!

**Rapid prototyping and product launch systems.....** Essential to beat the competition.

### Balanced global sourcing

Balanced sourcing.... *Getting it right..This time!*

Re-shoring trends in the Tooling and mould making industries

Supply-chain management and optimization

Supplier certification and scoring systems.

Balanced Global Sourcing

Production Process excellence

Distribution and Inventory management

Manufacturing Technology Toolkits

Business Systems

Management technique upgrades

Organizational learning systems

# THE SME K... Framework

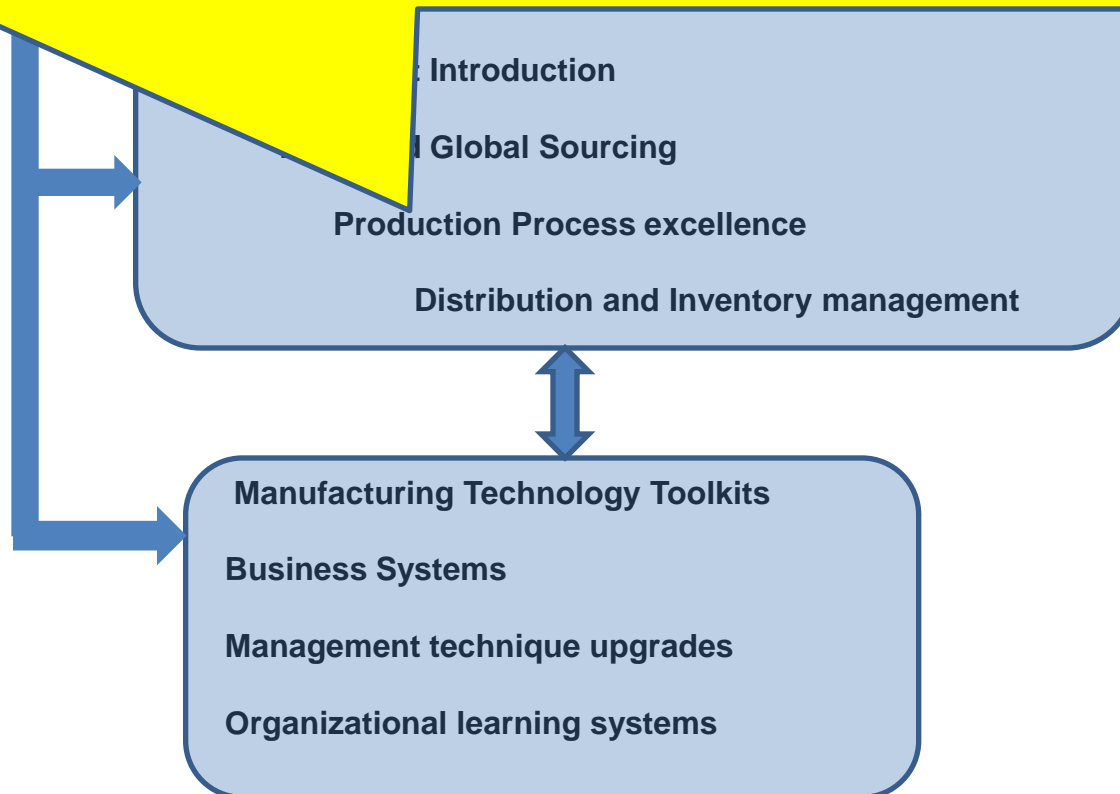
## Production Process Excellence

LEAN Manufacturing Process design and simulation workshop

Total Productive Maintenance... the essential for reliability

Process flexibility design and improvement workshop

Point meetings / 5S





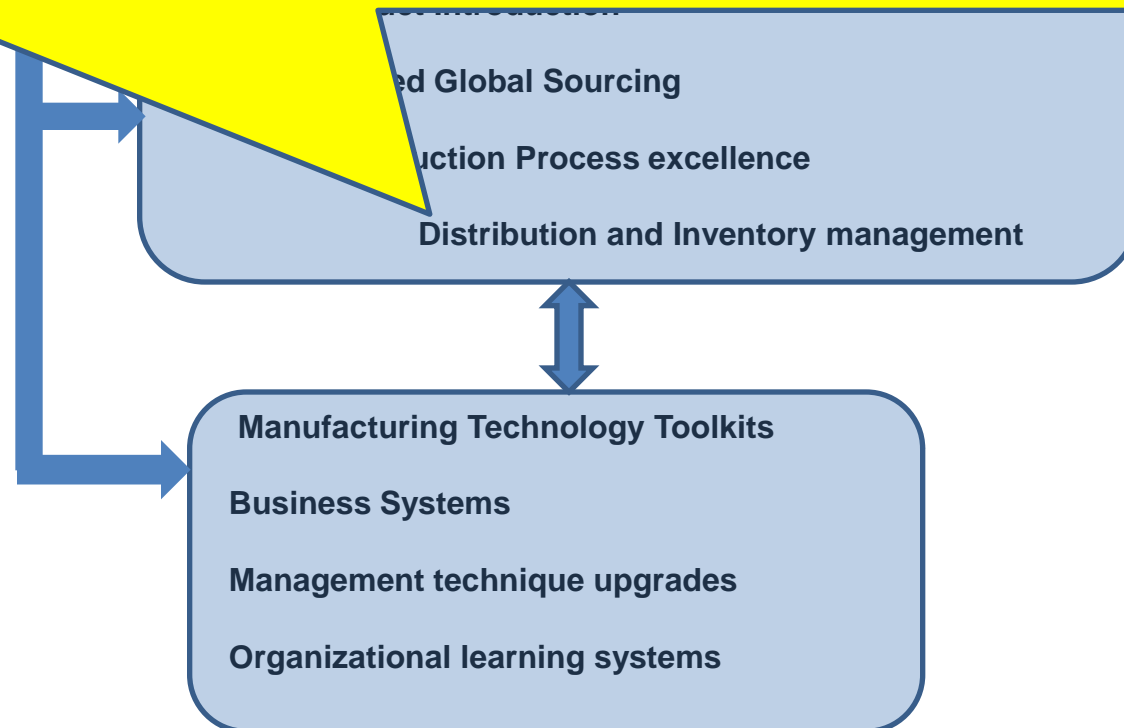
# The SME Knowledge Evolution Plan

Organizing your Thought-ware Software and Hardware

## Distribution and Inventory management

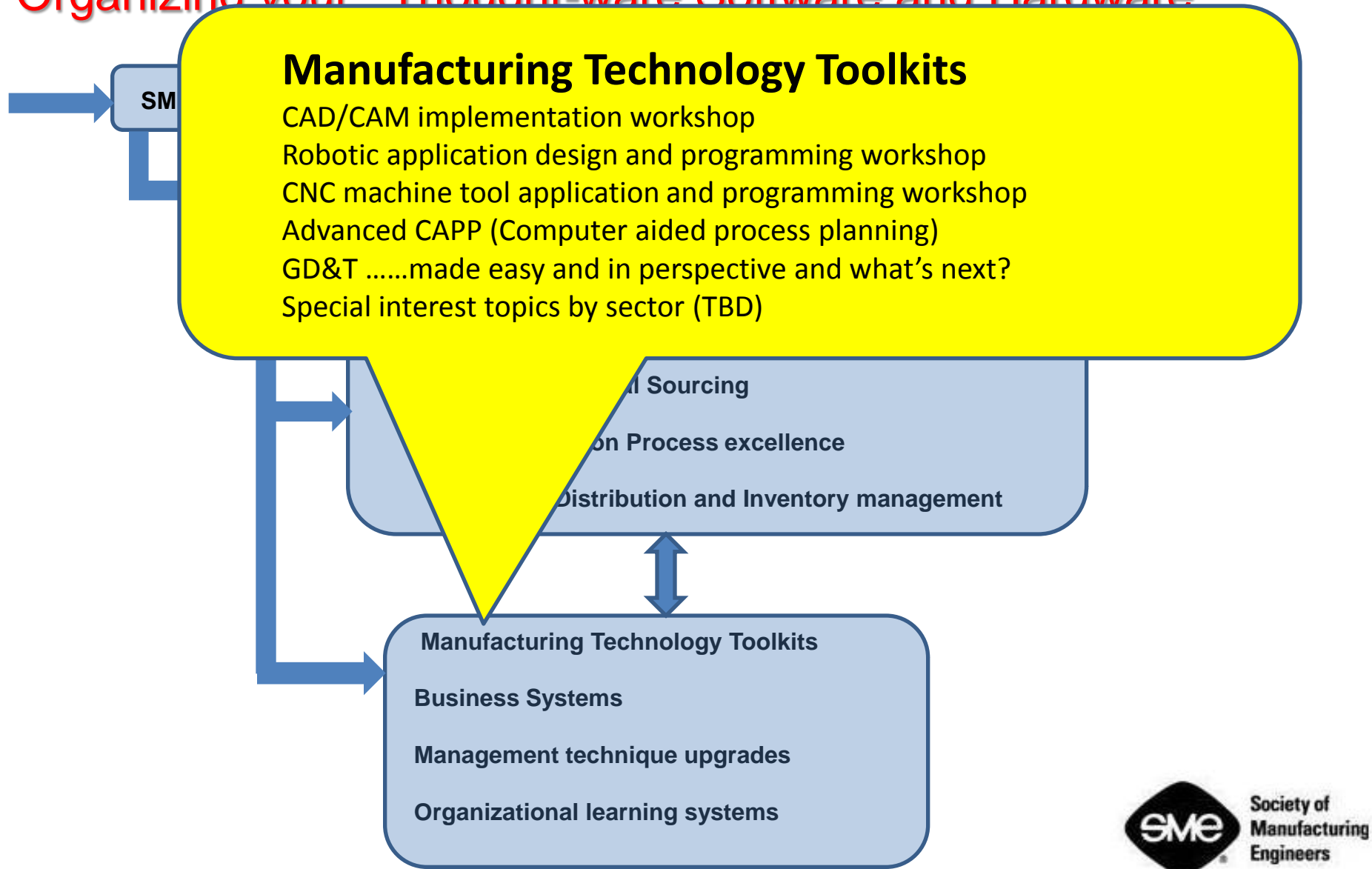
Global logistics systems

Inventory management systems



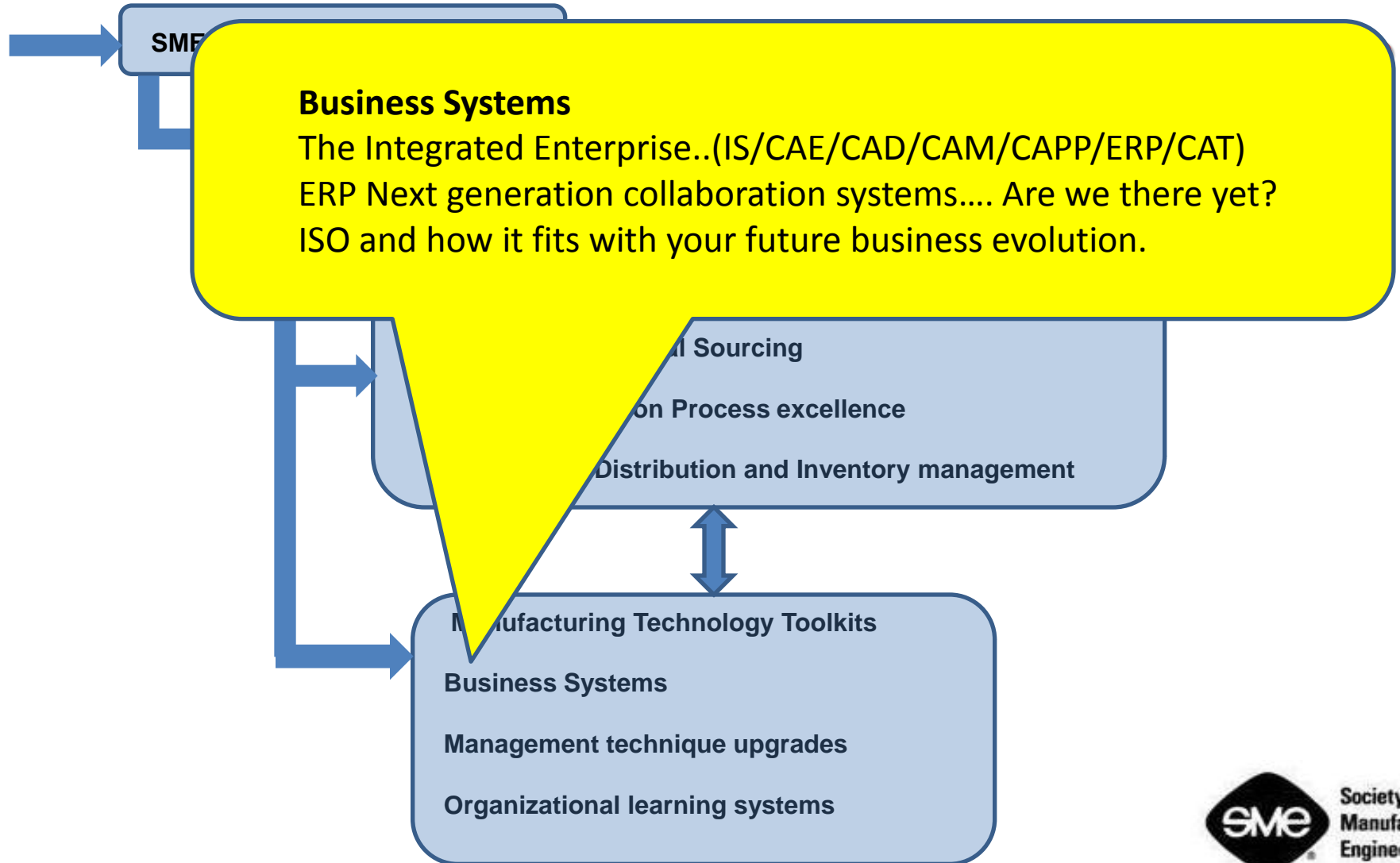
# The SME Knowledge Evolution Plan

Organizing your · Thought-ware Software and Hardware



# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....



# The SME Knowledge Evolution Plan

## Management technique upgrades

What is TBM and how to understand the economic trends ..... and how they affect us all..  
The new role of the Manufacturing Engineer..... Become the pivot point for TBM  
Organizational engagement systems... what and how?  
The new role of the management/bargaining unit team for TBM  
Continuous Improvement culture.... A complete 24/7 environment for flexibility and success  
The Evolution planner ... A Coordinator-for-Change Training Package  
Supervising in a LEAN environment... the new role/tools/techniques/operating practices  
Organizational team building workshops  
Creative problem solving and analysis tools  
Project leadership training

The diagram consists of two overlapping rounded rectangular boxes. The top box is yellow and contains the text 'Management technique upgrades'. The bottom box is light blue and contains the text 'Manufacturing Technology Toolkits', 'Business Systems', 'Management technique upgrades', and 'Organizational learning systems'. A blue arrow points from the bottom of the yellow box to the top of the blue box, indicating a flow or relationship between the two.

Manufacturing Technology Toolkits  
Business Systems  
Management technique upgrades  
Organizational learning systems

# The SME Knowledge Evolution Plan

Organizing your Thought-ware Software and Hardware

## Organizational learning systems

How to approach and utilize an apprenticeship system for your business

How to build a formal employee training program.

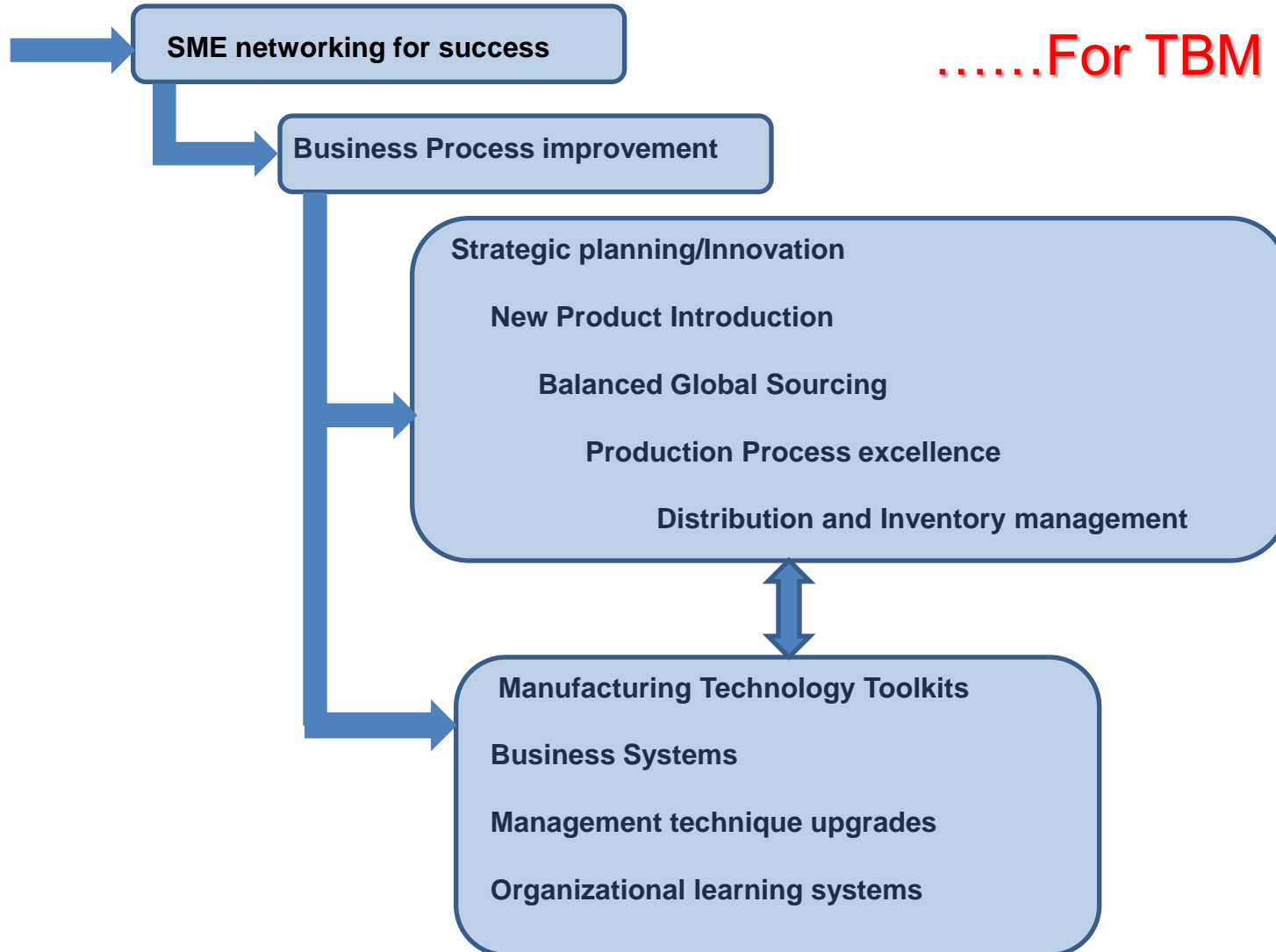
Understanding the latest government assistance programs for industry.



# The SME Knowledge Evolution Plan

Organizing your : Thought-ware Software and Hardware....

.....For TBM advantage

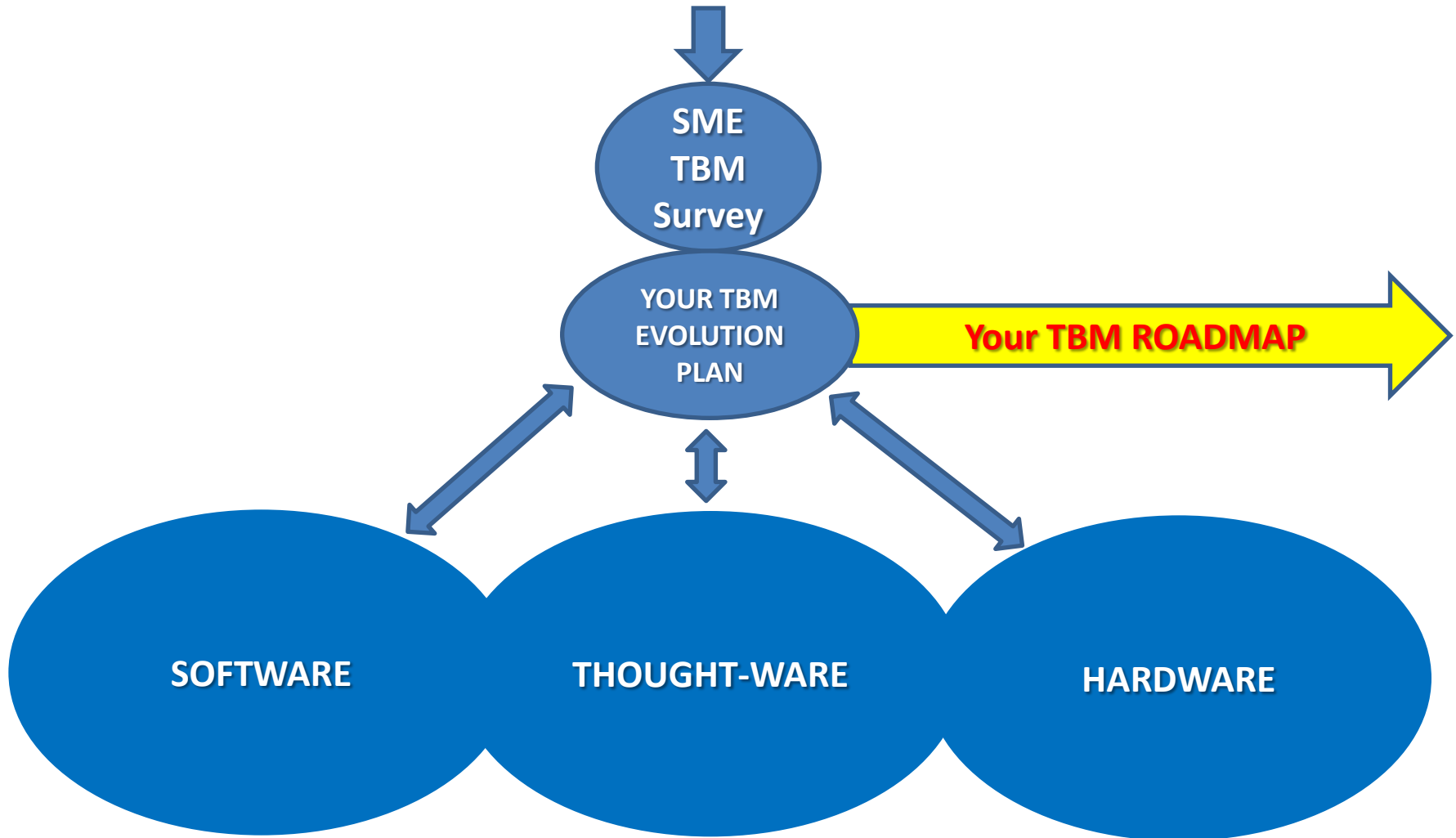




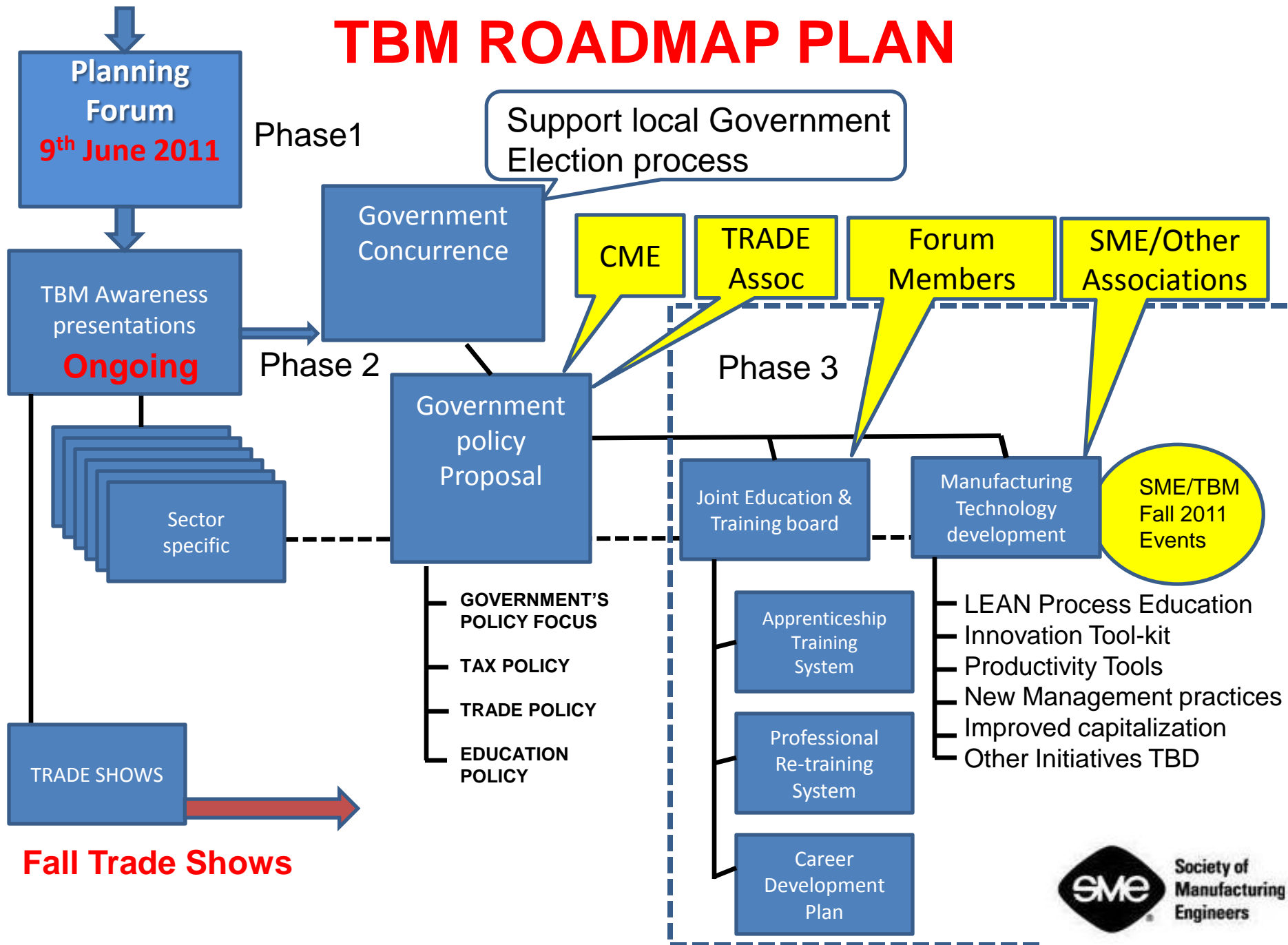
Society of  
Manufacturing  
Engineers

# The SME Knowledge Roadmap.....

## MEET KNOW GROW



# TBM ROADMAP PLAN





# THANKS

## Your Job to help TBM?

Enter “Thumbs up” for TBM

Study the Information package. *(more at <http://sme-tbm.org> )*

Sign up for the TBM survey and TBM Roadmap

Get your sector Society/Association to join the TBM Forum.

# HELP US HELP YOU!!!