



TBM Take Back Manufacturing 2017

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How can Canada Take Back Manufacturing?

Globalized Manufacturing with efficient Supply Chains supported by liberalized free trade agreements has been the business norm for the last 3 decades, but now many experts predict a significant change in direction.

Although economists are having great trouble agreeing, liberalized free trade is now being significantly challenged as a failed and non-practical ideology, with some governments pursuing a new balanced trade model with nationalistic trade blocs. This will demand consumers make much more of what they consume. This will modify current globalized manufacturing supply chain decisions and force a rethink toward more balanced and local Sourcing, Reshoring, local manufacturing closer to the customers, greater job stability, improved inventory flexibility and more effective innovation in home markets.

It's also now clear that globalized manufacturing is far less sustainable due to the realization that off-shoring is getting much more expensive, with the landed cost tipping point between low cost countries and onshore sources now being close to parity.

Manufacturing in the future will also have to utilize far more sustainable supply chains with a far lower carbon footprint to satisfy escalating ecological concerns. We cannot continue to move wasteful, dirty and environmentally destructive container ships around the world to chase a transient labor advantage in countries that are ill equipped to manufacture in a safe and ecologically compliant manner.

This all means Manufacturing organizations who want to compete in mature markets, and probably all markets in the future, must focus on a different productivity plan. They may move away from utilizing labor in so called low cost labor countries using long and unsustainable supply chains, and focus on gaining productivity closer to the customers through LEAN Business practices in all forms that may include recapitalizing using new disruptive technologies.

Taking Back Manufacturing (TBM) in Canada... The 3 Major Imperatives

How Canada with currently an ailing resource sector will stack up in this future of nationalistic and sustainable supply chains will depend on political will, new and yet to be defined trade agreements, effective industrial policies, legislations and national competitive factors.

For those that wish or need to manufacture in Canada we define 3 major imperatives for Canada to Take Back Manufacturing and this will demand government, the educational organizations, and industry work much closer together to develop a combined roadmap to make it happen.

1st TBM Imperative... Government Industrial policies to assist manufacturing

Canada's government/s at all levels must take stock of the new economic balanced trade model and realize that although we have an abundance of natural resources, we must have a balanced economy of resources, services and manufacturing that must make things more locally rather than continue to import them. They must also realize we won't get rich on services or just shipping raw resources out of our economy without adding value to these resources.

Our government must have sound industrial policies to ensure that Canada gets integrated and aligned with the reshoring efforts happening in our closest and largest trading partner with an economy that is 10 times our size, and find a way to assure business leaders that the Canadian dollar will never get over inflated by resource growth as we experienced in the last few decades.

Local Governments must focus on industry support including upgrades and maintenance of energy, logistics and communication infrastructure.

They must improve regulatory efficiency and remove waste from product and process compliance requirements and better assist business "Entitlement funding".

Technology development plans must be driven by industry but integrated into local academic centers to jointly undertake R&D projects to better access funding and talent that can take the business to the next level.

So, we need government to communicate and align with our major trade partner/s and undertake a compatible and winning trade policy and support for industry.

2nd TBM Imperative.... A New Industrial Learning system

We have national unemployment measured using a real job value index well above 12% And yet due to uncertainty for investing and maintaining learning in manufacturing at all levels of our society it should be no surprise we now have a critical skill shortage in manufacturing.

So, we need to rebuild the workforce and install a solid Industrial Learning system for our manufacturing Industries like those now being installed in the UK and already in place in Germany.

We need one central government organizing body for joint industry education and training that will engage our citizen students while they are still in school and propel them through an integrated learning process to create trade, engineering, and management skills. This must place them into a stable career journey early in the process with progressive companies that will embed ongoing education and training into the career plans.

We also must take significant action to attract young people to manufacturing careers to combat the increasing skill shortages but the public image of manufacturing needs work, it's still perceived as dark dirty and dangerous and risky and unstable employment, etc. The next generation must see manufacturing as sexy and something to build their future upon.

To achieve this, we must deploy knowledgeable industrialists into our school system to re-educate everyone, including the front-line educators who may not have a good grasp of manufacturing as a career... This is a must, and we are talking a culture change in our society about the value and respect for manufacturing.

3rd TBM Imperative.... Industry improvement

Our Industry leaders need to ensure their management teams "run the numbers" and do balanced sourcing reviews within their sectors to consider the sourcing strategy for the next generation of products.

The products that will return will not be the products that were off-shored, they will have new technology in both the products and the manufacturing process, and will demand new facilities, capital, knowledge and skills to undertake this journey.

Industry must also be ready for action with a reinstalled mindset for Continuous improvement and LEAN thinking which many experts agree we have lost due to the distractions of an offshoring focus over many years.

Typically, Lean business thinking and sustained continuous improvement in all facets of the business tends to be a business cultural advantage and should breed not only strong operating performance, but also a more robust innovative environment that will attract capital and growth investment. This requires a very stable and visionary management capability, and this is where strong business leadership can make the difference.

There are three LEAN business strategies that should be followed...

1. Use lean thinking to eliminate the waste in the non-value-adding parts of the overall business process, and reach a simplified and much leaner version of the new business process, including re-developing a supply base organized in a close geographical cluster that will feed local manufacturing and distribution loops.
2. Undertake a formal review of what new disruptive technology and science can be applied to this business model and new products using innovation strategies.
3. Apply automation in all forms to the output of the two strategies above. Recapitalize to automate the latest disruptive technologies into the remaining value-adding business processes to support the most advanced and integrated product set. This approach will possibly make the business the benchmark in the industry.

The new future vision of global manufacturing...

Although in some cases the importing and exporting of physical products and components and raw materials from one trade bloc to another over long supply chains will continue for quite some time to come, it's fair to say that based on trends already mentioned the future global trade slogan may eventually become *"Future products will be transmitted more than transported"*

This looks like a future vision some technologists share about where emerging additive manufacturing technologies using such devices as 3D printers will provide the dream of consumer level push button manufacturing in the same way we order coffee from a dispenser or download a movie.... It's taking local manufacturing to the limit, but it does show a LEAN vision that we should start toward, with the reshoring and balanced sourcing journey early new steps toward waste free customer focused manufacturing that is more sustainable in a world demanding more responsibility for its environment.

This may force the need to franchise or license new manufacturing centers in new markets across the globe to be closer to customers and avoid wasteful transportation using more portable and transferable manufacturing technologies and better developed IP and technology transfer systems via global partnerships.

The challenge for the manufactures, exporters, investors and the many support agencies and groups will be to combine efforts to adjust to this future change and challenging trend and learn how to reinvigorate and in some cases, reinstall local manufacturing capability that will be highly portable and transferable yet competitive.

In Summary

To ensure we can Take Back Manufacturing in Canada we will need Government, Educators and Industry to follow a common roadmap to support these Three TBM Imperatives.

We will need an industrial policy and plans that are better coordinated and integrated with a strong team of experts able to provide our businesses with such a vision and the tools to undertake it. We also see far too much fragmentation of effort for both planning and executing such a vision within the business and industry support groups within Canada.

We must strive to avoid such duplication and better pool all our efforts and harmonize the many plans and initiatives if we are to move Canadian businesses forward effectively, so that the correct decisions are made, so they can thrive in this new economic model and more sustainable approach to doing business.

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Author of **CYCLE TIME MANAGMENT ...Fast Track to Time Based Productivity Improvement** *A ground breaking LEAN Thinking text book on the concept and implementation of Business Cycle Time reduction and Continuous Improvement.*

Provides consulting, coaching and education on Business Productivity Improvement and Advanced Manufacturing Engineering to all types of business sectors and helps develop a Vision, Strategy and Evolution plan to attack waste, capture productivity improvements, increase profits, and become more competitive in the global market.



He is an architect of change for many major organizations across many industrial sectors on improvement and organizational change and is currently coaching, consulting and educating worldwide on Business Continuous Improvement Initiatives, Joint Ventures, New Product Introduction Systems, Global Technology Transfer projects, Disruptive Technologies and Sustainable Supply Chain Management.

Nigel is Society Manufacturing Engineering Toronto Past Chair in 2012-2013 and holds the SME Presidents Award.

He is currently lecturing at Canadian learning institutions and to Industry Associations on the theory of Sustainable Supply Chains.

He is the leading advocate for the **Take Back Manufacturing** Forum and the North American Reshoring initiative in Canada.
