Onshoring of Manufacturing

Ever wonder when, or even if, America will start growing its manufacturing base in the USA again, and bring back those jobs that went overseas? So have I…and I was a part of America's and the world's manufacturing scene over the last thirty years. To answer this simple question, allow me to reflect on a little history lesson, reveal the complexities, and then suggest a pathway to onshore manufacturing in America.

What led the offshoring trend in the last 20+ years?

- At the most basic level, US consumers are unwilling to pay the high cost of goods manufactured in the US, whether those goods are consumer, commercial, or technology based. As Asia in general and China in particular became more capable of producing high quality low cost goods in the 80s and 90s, consumers were more than happy to enjoy lower prices. As a direct result, manufacturing jobs transferred out of the US, as parent companies chased lower cost locations.
- As transportation costs were not hugely significant in the build-up of product cost, the moderate fuel and energy costs enabled offshoring to Asia primarily.
- The strength of the US dollar has made foreign made goods more competitive and attractive to the US and global markets.
- Another reason for the rapid offshoring trend has been the readiness of Asia Inc. for the wave of manufacturing coming their way. For example, China creates a central plan that identifies the industries, technologies and the capabilities that are important and strategic to China as a country, and they are now on their 14^{th} (or so) 5 year economic and industrial plan. The plan, with its 5 years increments, represents a strategic framework for industrial development that spans decades. In the past, China has focused on such global markets as the information technology sector (95% of the world's notebooks and PC are manufactured in China) and on the more recent wave of consumer, mobile and internet devices.

What has made China so compelling as a manufacturing location?

As an example of China's strategic planning, energy generation and energy management have been considered critical for China and as such are treated favorably in the recent 5 year economic plans. Foreign companies who offer such technologies and solutions are encouraged in multiple ways to invest in manufacturing in China. In short, the centrally planned Chinese industrial economy has been very thoughtful and purposeful in aligning a range of government incentives needed for success. These incentive programs address many if not all the aspects of cost, as well as local market access, and help companies achieve scale and return on investment. For example:

- Labor costs for preferred industries are underwritten in many cases for years to promote inward investment. Also training schemes and costs in the required skills and technologies are underwritten for up to 2 years.
- Educational institutions are strongly encouraged to align the content of their (technical) courses to the needs of preferred industries.
- Energy costs in China are high. However, encouraged industries have access to lower cost clean energy (from the Three Gorges region in Western China, for example).
- Access to debt and venture funding is also provided through state sponsored programs. This enables encouraged industries to bypass many of the traditional hurdles and challenges of rapid growth.
- Critical supplier infrastructure is also encouraged and enabled through aligned policy and programs.
- Effective and easy-to-implement legal entity structures are supported.
- Favorable tax treatments are offered, and
- Ever easier methods for foreign companies to repatriate cash have been created.

The history of offshoring offers many valuable insights. What needs to change in the US for onshoring to be successful? Change must occur in four primary areas: Government policy, Capital Investment and Financing, Skills and Capabilities, and Infrastructure and Support.

Government Policy:

Government policy in the US today is biased towards the notion of a free market economy. Given this free market pre-disposition, many believe that less government is needed, not more, in today's partisan political debate. The US Federal and States governments will have to become more involved to enable US manufacturing industry to compete with China (primarily). In China the governments (central, regional and local) are supportive, aligned and very influential in industrial and fiscal policy. This directly enables China Manufacturing Inc. to be much more competitive than US Manufacturing Inc. The changes that must occur in the US include:

- Government policy must proactively support manufacturing to reverse the decades' long trend of offshoring. This policy should address, for example, access to capital and debt financing, taxation, regulatory policy, labor skill and competencies planning, etc.
- Though unpopular with economic purists, a review of international trade policy including sanctions, tariffs, taxation policy, etc. is long overdue, if only for the express purpose of reducing similar barriers to US manufactured goods in large, high growth but still protected markets around the world.

Capital Investment and Financing:

The return of manufacturing to the US will require significant investment in manufacturing facilities, equipment and tooling. This investment is required up front and sometimes years in advance of any return on the investment. Today's investment culture in the US is dominated by the relatively low cost of entry and the immediacy of return in the internet/digital industries. Venture Capitalists indicate they will invest $20M in 25-40 digital companies, and if 2-3 are successful they can make very good returns within 12 months. This investment culture will not support manufacturing industries with their higher up front capital needs and much longer returns cycles. The merchant capital industry/capital free markets will not provide the strategic investments needed to onshore manufacturing in the US. Rather:

- Government policy must ensure that the required capital is available to these manufacturing companies, as they need it and as they meet a predetermined business case.
- The banking and finance industries must also be aligned to support the working capital and debt needs of manufacturing industry in order to support growth and scaling, which is critical for manufacturing to become cost effective.

Skills and Capabilities:

The manufacturing jobs that went to Asia 20 years ago are not the jobs that need to be repatriated to the US in this decade. The new manufacturing jobs will require a much different skillset to compete in the future. The new skills include:

- the incorporation of automation into all aspects of manufacturing
- the design and integration of information technology into the manufacturing process
- information technology systems management
- decision support systems, and
- rapid analytical and decision making skills.

Also, greater collaboration is needed between industry and the feeder academic institutions:

- The syllabi of technical schools and universities must be aligned with the future needs of manufacturing industry. Industry and educational institutions must continually collaborate on what skills, capabilities and competencies are required and by when.
- The appropriate work experience/outplacement programs should be incorporated into academic courses, so students 'hit the ground running' when they graduate and join the industrial workforce.

The US has lost a valuable skill set in those people who have spent their entire careers in manufacturing industry and have acquired a valuable 'how to' set of skills and capabilities throughout their work lives. This infrastructure of talent has been largely lost in the US throughout the period of benign industrial neglect, but can be restored in the following way:

- A plan needs to be created in the US to repatriate such experience-based skills. No surprise, those skills largely exist in Asia today.
- Incentives must be provided to encourage such talented manufacturing professionals to return to the US and educate the next generation of manufacturing engineers and manufacturing professionals.
- Society has to value the manufacturing profession in a way that it does not today. Certainly, incentives are key to attracting the right people to work in manufacturing. However, in order to attract 'the best and brightest', society must genuinely value these skills and capabilities and restore the societal appreciation of such skills to at least on par with today's engineering, legal and financial skills.

Infrastructure and Support:

One implication that was not fully anticipated in terms of its negative impact of offshoring was the loss of a whole infrastructure of hardware and services suppliers who vanished from the US as a result of the migration of manufacturing to Asia. This capability and infrastructure was painful to lose and will be even more painful to restore. The critical web of suppliers and services needed to support manufacturing companies requires the same level of government, investment and skills support as outlined above for manufacturing industry. Without it, manufacturing companies will not be able to scale and achieve the economies needed to be effective local and global competitors.

Conclusion:

Continuing what we have been doing in the US will not work. Change must occur as the current US free market system will continue to have an undesirable effect on US manufacturing.

A solution other than that offered by the free market system is recommended in this paper. The free market system in itself will not support onshoring of US manufacturing to the level that is needed to restore manufacturing to a significant and vibrant role in today's economy. Of course, manufacturing companies must continue to reassess:

- their long term production strategies and needs
- the value of their intellectual property
- the requirement to protect it
- the taxation and regulatory environment within which they reside
- their workforce talent needs and its availability, and
- ultimately the feasibility of US manufacturing.

Government has both a role and a responsibility in the promotion and support of onshoring.

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