

CIO – Corporate innovation online

Innovation management best practices

Op-ed

NAFTA is not the problem. The focus of discussions should be how to optimize and enhance this fundamentally strong trade agreement and bolster innovation throughout NA

A perspective on innovation and its status in three countries

Overview

Responding to the changes initiated by the NAFTA agreement is the main issue

NAFTA came into effect on January 1, 1994, 32 years ago. While there have been disputes on trade arrangements over the years, the Act has been seen by most to have met its objectives; more trade and investment amongst the three partners to the agreement.

The Act is a classic example of international economics; reduce trade barriers, specialize in what one does best, encourage trade, and everybody's better off over the longer term. All of this has happened except for the 'better off' part. Jobs have been gained and lost and it is the unevenness of the latter that has not been well managed.

As with any complex problem, the fix is not in throwing the whole arrangement out the door but rather it is identifying

the root causes of the problems which have surfaced because of the changes initiated by the Act.

To this extent, the manner of handling the repercussions of NAFTA are similar to any other trade arrangement among nations or even among regions. How to handle the impacts or outcomes of any trade arrangement is the challenge.

This perspective is not about the agricultural, automotive nor soft-wood lumber issues it is about innovation in the three countries and a need to focus on improving innovation.

Innovation is the issue in the U.S., Canada and Mexico. Manufacturing jobs, the current centre of attention, have moved to Mexico because of cheaper labor and now acceptable quality. The shift to 'smart manufacturing' however, represents an even greater threat to jobs and employment in NA. As robots, with the innards of AI, take over simple jobs, the challenge now is to get into the business of making robots that make the cars and other manufactured products. Innovation never ceases.

Summary

The NAFTA trading bloc should be optimized, not aborted, as it represents a powerful example of how trade can lead to economic prosperity and improve peoples lives but its impacts have so far not been well managed.

Innovation will continue to impact jobs perhaps even more so than over the 32 years of operating under the Act. Job retraining, re-employment, mobility are the consequences and these are the issues to be addressed.

Competition for trade is more with emerging power blocs than from within NA.

	United States	Mexico	Canada	Totals
GDP as % of world	15.81	1.96	1.44	19.21
GDP per capital	\$ 55,805.5	9,009.3	43,332	
Population in millions	\$ 321.6	127	35.8	\$ 484.4

Building, sustaining and articulating innovation management best practices

CIO – Corporate innovation online

Innovation management best practices

Perspective on innovativeness amongst the three partners

The U.S. is highly ranked, Canada is 24th but falling and Mexico has a big challenge.

Each year the WEF¹ reports on its assessment of global competitiveness by ranking, for 2016-2017, 138 countries. What do the World Economic Forum reports tell us about innovation in each of the three countries which make up the NAFTA?

Overall, the U.S. ranks 3rd in the world, Canada 15th and Mexico 51st. Only two countries stand ahead of the U.S.; Switzerland and Singapore. America is great by this standard!

CIO²'s interest is mainly in those rankings which relate to innovation and innovation management practices. The 12th pillar in this comprehensive and user-friendly report is entitled 'innovation' and is comprised of seven factors.

12th pillar: Innovation	U.S.	Mexico	Canada
<i>Overall rank in 12th pillar³; out of 138 countries</i>	4th	55th	24th
Capacity for innovation	2	67	26
Quality of scientific research institutions	5	44	17
Company spending on R&D	2	76	29
University-industry collaboration in R&D	4	52	23
Gov't procurement of advanced tech. products	11	88	67
Availability of scientists and engineers	2	55	6
PCT patents applications/million pop.	10	60	19

The U.S. ranks fourth behind three smaller countries⁴. Canada's ranking has fallen over the past decade or so and now ranks 24th. In all other categories, the U.S. outranks its NAFTA partners by significant margins.

The areas identified as a priority for the U.S, at least as indicated by this analysis, would be to increase its level of patent applications (intellectual property) and, to increase its government procurement of advanced tech. products. The standing in the latter category is almost unbelievable given the extent of military and other spending on technical products. Other than these two factors, the U.S. is viewed as highly competitive.

The 9th pillar of the study, which has to do with 'technological readiness' shows a low rating for the U.S. at 14th, below thirteen other nations but well above both Canada which is ranked at 21st and Mexico at 73rd. Technological readiness is a broad category which covers the availability of latest technologies, firm-level absorption of technology, internet users, band width availability and the use of same. Of the thirteen countries ranking above the U.S., nine are from Europe, in this case, including the U.K. and Ireland. Hong Kong, Iceland, Singapore and New Zealand rank higher

¹ World Economic Forum

² Corporate innovation online

³ Switzerland, Israel and Finland

CIO – Corporate innovation online

Innovation management best practices

than the U.S. Pervasive access to the internet and the shift to mobile networks falls short within the NAFTA group.

The 11th pillar addresses ‘business sophistication’ where the U.S is fourth, Canada 24th and Mexico at the 45th slot. U.S rankings for all nine factors which go into this pillar are much better than either Canada and Mexico. Interestingly, the final factor in this group has to do with one of the ‘best practices’ of innovation management; the ‘willingness to delegate’⁵. Under this factor, the U.S. ranks 9th, Canada 11th and Mexico at 67th. By this criterion, Mexico has a long way to go to have the appropriate best practices for managing (and encouraging) innovation.

The lack of willingness to delegate is a measure of not just the desire to ‘delegate’ but pervades several other measures of ‘best practices’ for innovation management such as; decentralization, lack of a hierarchy, and willingness of management to use project teams which have authority. Most importantly, the willingness to delegate is a proxy for trust in an organization. One delegates if there is trust. The rating is therefore a bell weather of broader management problems which can inhibit innovation.

The Nordic countries score high on the ‘willingness to delegate’; on top is Denmark followed by Norway, Sweden and Finland in the top 5 with the Netherlands coming in third. Qatar is 7th and Switzerland is eighth. It is significant, and probably related, that the Nordic countries also score high on the quality of education and the provision of on-the-job training.

Insights into innovation management

- In Mexico, delegation – a key to best practices in innovation management – is rated very low. Nordic countries score high. Canada is 11th, the U.S. is 9th and Mexico is 67th.
- More so than either the quantity or quality of education, it is the on-the-job training provided by employers that correlates with a higher ranking. European countries rank high, The U.S. is at 14th, Canada 22nd, and Mexico much lower.

⁵ For more information on this factor and its importance to innovation management best practices, please visit the web site; www.corporateinnovationonline.com

CIO – Corporate innovation online

Innovation management best practices

Perhaps more telling of the factors which impact competitiveness are what is referred to in the report as the ‘most problematic factors for doing business’. There are striking contrasts between the countries for the top seven factors for each country.

U.S.	Canada	Mexico
Tax rates	Insufficient capacity to innovate	Corruption
Tax regulations	Inefficient government bureaucracy	Crime and theft
Inefficient government bureaucracy	Access to financing	Inefficient government bureaucracy
Restrictive labor regulations	Tax rates	Tax rates
Inadequately educated work force	Tax regulations	Tax regulations
Poor work ethic in national labor force	Inadequate supply of infrastructure	Access to financing
Insufficient capacity to innovate	Inadequately educated work force	Inadequate supply of infrastructure

The list while not complete – only the top seven are listed for each country – does make the point that tax rates and regulations are a common problem as is ‘inefficient government bureaucracy’ and an ‘inadequately educated work force’.

Probing further into the issue of the an inadequately educated workforce, it would appear that the ‘quantity of education matters much less to international competitiveness than does the ‘quality of education’. Perhaps what is more enlightening is that the most significant component is neither quantity nor quality but rather the on-the-job training provided by companies. The Nordic countries rank high on this list with Singapore being the not-from-Europe entry and in third spot. The U.S. ranking is 14th, Japan is 17th and Canada in 22nd. On-the-job training, long a characteristic of European – and the U.K. – companies appears to be a differentiating factor.

Ranking the U.S. as fourth in the area of ‘business sophistication’ will come as a surprise to American management. More surprising is that the fourth ranking is behind Switzerland, Japan and Germany. America, the birth place of the MBA degree and education for business, has clearly lost ground – if one is to believe the ranking.

The opportunity for the three partners in NAFTA is to mutually address the issues of tax rates, tax regulations and the education of its combined work force to create a trading bloc that is second to none in terms of competitiveness.

The United States has, on paper, the highest tax rate of the three countries at 38.9%. Canada is at 26.5% and Mexico at 30%⁶. The Corporate Tax Rate in the United States stands at 38.90 percent. Corporate Tax Rate in the United States averaged 39.21 percent from 2000 until 2016, reaching an all time high of 39.30 percent in 2001 and a record low of 38.90 percent in 2016. The Corporate Tax Rate in Canada stands at 26.50 percent. Corporate Tax Rate in Canada averaged 38.79 percent from 1981 until 2016, reaching an all

⁶ Trading Economics. January 2017

CIO – Corporate innovation online

Innovation management best practices

time high of 50.90 percent in 1981 and a record low of 26.10 percent in 2012. The Corporate Tax Rate in Mexico stands at 30 percent. Corporate Tax Rate in Mexico averaged 34.43 percent from 1981 until 2016, reaching an all time high of 42.00 percent in 1982 and a record low of 28.00 percent in 2007.

Access to financing inhibits investment in Canada and Mexico but is not an issue in the U.S. There is nothing new here.

What can be learned from the WEC report

The U.S. and to a lesser extent Canada, are so far ahead of Mexico in terms of economic development and even the manner of managing innovation that, on first reading, one could question any attempt to bring the U.S. along with Canada into a trade agreement with Mexico. The rankings clearly indicate the close trade relationship, technology transfer, and state of economic development between Canada and the U.S. Both countries have lost jobs to Mexico.

Mexico, however, is within NA, and has a population of 127 million persons, four times the size of Canada and is on the border. NAFTA was conceived of after the The Canada-United States Automotive Products Agreement, know as the Auto Pact, signed in 1965, had cemented the trade relations between the two countries in the auto industry and led to the belief that the two countries could work together to fashion a more competitive industry. The auto-pact was abolished in 2001 but NAFTA had already superseded the early trade arrangement. Now Mexico, by all reports, has improved its quality of manufactured goods, is very much a part of this integrated community; an illustration of what trade agreements can bring about.

Currently, it is the jobs such as assembly line labor which remained in Canada which will be most impacted by new robotics and other developing manufacturing technologies. According to Wikipedia;

The jobs created by the new market conditions under the pact were almost exclusively [blue collar](#); administration, research and development remained in the United States. This transfer of control of Canadian auto making operations to their US parent corporations substantially reduced the autonomy of the Canadian operations with respect to vehicle and component specification, design, and sourcing; manufacturing and production, branding and marketing, and corporate policy,

It is precisely these jobs that the industry in Canada is desperately seeking to get back so that, for example, the innards of autonomous vehicles will be designed and developed in Canada. Blackberry is an example.

An examination of the 12th pillar provides further insight into what should be done.

- The quality of scientific research institutions, while very good in the U.S. is not so good in Canada and lags dramatically in Mexico.
- Company spending on R&D, a perennial problem in Canada is even worse in Mexico.
- University-industry collaboration is lacking in both Canada and Mexico.
- Government procurement of high tech. products is minimal in Canada and almost non-existent in Mexico.
- Scientists and engineers abound in the U.S. and Canada but numbers seem minimal in Mexico.

Building, sustaining and articulating innovation management best practices

CIO – Corporate innovation online

Innovation management best practices

These five areas identify some of the priorities which should be on the table as one examines enhancements or modifications to the NAFTA.

On the plus side, at least over the next four years, the focus of the U.S. will, as recently announced, be to reduce corporate tax but more importantly reduce the complexity and increasing the fairness of tax regulations. The U.S. is likely to provide the lead in this area and should do so. Canada and Mexico will necessarily follow to remain competitive.

The ninth pillar, ‘technological readiness’, comes as a shock more to the U.S. than in Canada. Canada has a well-recognized oligarchy in the telecommunications industry but competition should be thriving in the U.S. While competition thrives in the U.S., the pervasive use of IT has yet to take hold – at least when compared to thirteen other countries.

For all three countries, the top seven ‘problematic areas’ set out include an ‘inefficient government bureaucracy’; a stated priority for the incoming regime in the U.S. but less so in Canada. Both the U.S. and Canada apparently have a problem with their ‘insufficient capacity to innovate’, which rating for the U.S. is difficult to believe.

Both Canada and the U.S. have an ‘inadequately educated workforce’. For Mexico, one is sure the same comment applies but the even greater issues are ‘corruption’ and ‘crime and theft’. Mexico has more basic issues to address than just focussing on educating their workforce. The U.S. and Canada, with the same problem could do well to both address the workforce issue with the objective of creating a NA-wide well-educated work force.

Driving forces of innovation and employment in the future

The content of ‘manufacturing jobs’ is about to change dramatically

It is clear from the above analysis that there are areas in which innovation can be improved in all three countries. The job disruptions which have taken place will continue apace if not even faster.

AI, robotics, brain simulation, neuro sciences all have implications for how we work and make a living and the future impact will be profound. Most of these new sciences are just starting to have their impact and the picture for the work – employment - cannot be ignored.

Much has been already being written about the impact of AI, just to take a few examples⁷,

- ‘universal language translation for free,
- self driving cars (impacting cab drivers and delivery services),
- self driving fleets (displacing truck drivers),
- health care (medical community particularly general practitioners),
- finance (brokers and financial advisors replaced by intelligent robots),
- agriculture (laborious tasks in farming),

⁷ AI is the future, and Canada must seize it. Globe and Mail, January 7th, 2017

CIO – Corporate innovation online Innovation management best practices

- aerospace manufacturing (manufacturing jobs in Ontario and Quebec replaced by robots as in the auto industry),
- weapons development and the combat troops (minimal need for troops on the ground).

Every one of these industries and others will see a decline in employment. AI's impact is only one of the developing sciences which will drastically alter the way in which people work. This is the challenge facing the three countries.

Employment increases will take place in those industries making use of AI, robotics, drones, management of big-data, etc. Significant re-training will be required to respond to these impacts. On-the-job training, as noted earlier, should be the most important component of managing the transition and the source of this is companies themselves. Community colleges, trade schools and universities will require program adjustments to train for new vocations and lessen the negative impact of innovation.

CIO – Corporate innovation online Innovation management best practices