Globalization and the Indian Manufacturing Industry

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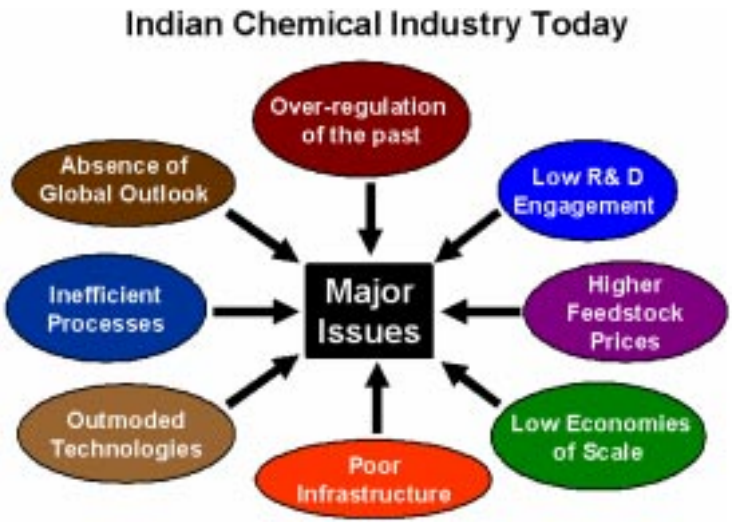
In the wake of economic globalization and the emergence of Information Technology as a "Business Solution Provider", the manufacturing industry is undergoing major restructuring worldwide. Business paradigms, fuelled by these forces of change, are proliferating rapidly, and perhaps the profusion of management theories, concepts and fashions that co-exist today are symptomatic of this change. The principal issues confronting the industry now are: deregulation, the challenge of global operations, increased competitiveness, heightened eco-sensitivity**,** and the volatility of the markets. The goal facing the industry today is one of achieving a balance between *business innovation* and *technical innovation*.

This accelerating change is a product of transformation of technology, markets, products and processes. Multiple technological breakthroughs, especially in the domain of communications and information processing; greatly reduced product cycles, and rapidly changing markets have together forced a change in the way business needs to be conducted today. In the face of rising uncertainties, organizations today are increasingly dictated by the need to reduce business risk, and to meet pressures of short-term financial expectations.

Under the present regime, the opportunity of global operations implies coming to terms with and taming human resource flights and new markets. The challenge of enhanced competitiveness has forced the industry to focus on curtailing cost of production. There is a shift towards concentrating on "core-competencies", and hence on *focused competition* as a survival strategy. Coupled to this is the emergent stringency of safety, health and environmental (SHE) regulations that has made the search for newer, efficient technologies imperative. There is a far greater pressure today – especially on the process industry - to meet SHE goals commensurate with low individual, societal and environmental risks. Finally the market instabilities, recognized as inherent to the process of globalization, now need organizations to cultivate flexibility in management of their business.

The net result of the above trends is that there is today a greatly enhanced competition for *capital, material resources, talent and customers*. As G Hamel and C K Prahalad have pointed out in their book *Competing for the Future*, the companies most likely to succeed under these challenging conditions are those that can most effectively rethink their organization, business and technologies in the most creative ways to respond to the new market environment. A balancing act between short and long-term goals appears inevitable.

The manufacturing industry in India has played a significant role in the country's ongoing metamorphosis – although a slow one - from an agrarian to an industrialized economy. Until the economic reforms in the early 1990s, our economic policy focused on a drive for self-sufficiency with a minimum of foreign participation in the manufacturing industry (MI). Reforms have proceeded slowly — today a large public sector co-exists with a sizeable and diversified private sector. The contribution of the MI to the country's economic transformation has been a reasonable one, given that its performance in the pre-reform era was hamstrung by the plethora of rules and regulations in the form of industrial licensing and import controls. The reforms in the 90's were welcomed by the industry leaders, but unfortunately the gains have not been quite commensurate with the expectations. Although for a good part of the 90's the industry grew almost at the rate of 10% annually, the figure today has plummeted to far lower values. The rate of growth of employment in the manufacturing sector dropped from more than 1.7 per cent per annum in the late 1980s to 1.2 per cent in 1991-92 and to 0.6 per cent in 1992-93. No doubt, the present crisis in the MI is in part due to the current global economic slowdown, but there are deeper reasons behind the symptom.



The heavily regulated macroeconomic framework of the pre-reform period basically allowed the manufacturing sector as a whole to insulate itself easily from *both* internal and external competition. This relative isolation can be seen to be almost the *generic* cause behind the various lacuna and weaknesses that plague the industry today. For one, it has prevented the industry from acquiring a "global outlook", as it has more or less depended on domestic markets, coupled with low export volumes for its sustenance. Due to this, today when it has been rapidly exposed to global competition, the industry increasingly finds itself faced with the problem of inherently low economies of scale, and a consequent unfavorable price structure. In addition, the insularity had, in the past, compelled a situation where there was little incentive for R&D investments by way of quality improvements. As a consequence, the industry today is saddled with technologies whose cost-effectiveness is increasingly compromised. Operationally, the organizations have also not been challenged to improve their efficiencies. Add to this the poor state of infrastructural support from the government, the story of the current state of the Indian manufacturing industry may be complete. Its lack of a competitive edge in the international trade today is largely due to this situation.

There is today then a compelling need for cost-competitiveness on the part of the industry through upgrading of workplace and manufacturing facilities. In this context, a gradual shift towards "complete" automation / computer-integrated manufacturing is inevitable. Also, in the process sector in particular, this improvement in technologies is imperative under the new regime of stringent safety and environmental regulations. There also has to be emphasis on enhancing exports. And finally there is a need to gear up to meet the new challenge of the GATT regulations ushering in a stricter IPR regime.

The key driver in the process of change would have to be a focus on continuous reduction in production costs. Apart from the measures mentioned in the forgoing paragraph, by way of lowering costs the MI will need to explore technology intensification through in-house development (as opposed to purchasing it in the global market) as well as energy integration.

Additionally, these measures will need to be integrated with the rapidly emerging, information management and e-commerce tools that permit enhanced performance and productivity.

For India in particular, one of the key strategies that this scenario may demand is breaking of the relative insularity between the industry, the academia, and the national laboratories. There is a need for preparing new roadmaps for collaboration between the trio for sharing of capital and human resources towards successful technology development and business operations. On the other hand, the academia also needs to reorder its academic and