

THE ROLE OF RUBBERS IN A MANUFACTURING ECONOMY: EMERGING OPPORTUNITIES AND CHALLENGES FOR INDIAN INDUSTRY

S. Sivaram,
CSIR Bhatnagar Fellow,
Polymers and Advanced Materials Laboratory,
CSIR-National Chemical Laboratory,
Pune-411 008, INDIA.

Tel : 0091 20 2590 2614
Fax : 0091 20 2590 2615
Email : s.sivaram@ncl.res.in
Website : swaminathansivaram.in

ABSTRACT

Rubbers, natural and synthetic, play a key role in a manufacturing economy. The engines of economic progress literally ride on rubbers in diverse sectors of an industrial economy.

Rubber is a global commodity and has achieved maturity in less than seventy five years since this industry first began, in the mid forties. With increasing use and production volumes, rubber transformed from a specialty to commodity, with price being the only market differentiator.

However, several rubbers have retained (or elastomers) their lure as high performance, high value and low volume materials useful in specialized applications. Such high performance elastomers have emerged from entirely new materials or innovative modification of existing materials.

The global megatrends and the emerging domestic opportunities are bound to throw many challenges to the Indian rubber manufacturing industry.

The lecture will trace the emergence of synthetic rubbers as commodity and specialty materials and examine India's position both as a producer of rubber and consumer of products derived from rubbers. The area of specialty elastomers will be highlighted with potential applications in non-tyre sectors. Significant high value opportunities exist for specialty elastomers as engineering materials, adhesive and sealants, materials for low and high temperature applications and materials capable of withstanding oxidizing environments, weather resistant elastomers and rubber composites with unusual properties. High performance elastomers are an "invisible" part of many advanced materials applications. Success in application and market development will require close collaboration of processors with end product developers and tailoring cost-performance specifications to meet customer expectations.

I believe we are not on the threshold, but we are very much in the midst of global competition. As we look at manufacturing in India with great optimism, we need to recognize that Indian manufacturing is likely to face extreme turbulence in the years to come. As completion

intensifies, Indian organizations must be ready to face the Schumpeterian tenet of “creative destruction and reconstruction”.

As Darwin taught us two centuries ago, it is impossible to create something new without destroying the old. Organizations and institutions are no exceptions to this law.

Indian manufacturing will need three ingredients to survive this challenge. One, innovation, two reach and scale and three talent. Obvious as they are, these three ingredients are also the most difficult to acquire and manage.

I will share a few thoughts on innovation specific to Indian rubber industry with special reference to micro small and medium scale (MSME) manufacturing. In my lecture later today, suffice to say at present that we need a new paradigm for innovation in MSME. We have to shed the excessive secrecy that is characteristic of MSME, we have to encourage “cooperative innovation” rather than “competitive innovation”. In this respect we have much to learn from our Eastern neighbours, namely, China, Korea and Japan. I believe that if Indian MSME’s have to survive the global competition, they have to learn to survive collectively. Individually, we will not survive.