

Rise and Fall of Japan's Electronics-Semiconductor Industry: Will India take lead?

Japan was the World leader of semiconductor industry in 1980's. Japanese Semiconductor companies had 50% Market share in world market, World's Top 3 companies with highest sales were from Japan and 6 out of 10 top world companies were Japanese, displaying the overwhelming strength of Japanese semiconductor expertise. This statistics since then has not been matched by any country or region in Semiconductor Sector.

The semiconductor devices were invented, developed and emerged as a major industry in America during early 50's-60's. In mid-1980's, through inexorable determination Japan caught up with the United States, emerging as new leader of the Semiconductor market.

In late 50s, semiconductor devices were imported from US to Japan, the importing model led to startup of several Japanese general trading companies, (Marubeni, Nissho Iwai, Kanematsu, Sumitomo Corporation etc.) due to lack of after-sales service from American companies then, there was huge need for domestic manufacturing. Japan Trade and Industry Ministry took the responsibility of semiconductor manufacturing equipment development. Invested heavily in R & D and many policies were implemented along with Private companies business plans, during the period the industry took off rapidly.

The country also determined that the use of domestic semiconductor devices should be implemented throughout the country for rapid growth of this industry. All the imported devices were replaced by the domestic manufactured companies. The engineers were trained to develop, Produce and repair as well, thus making devices reusable. A plan for mass production of a number of semiconductor devices was achieved. Very soon approximately 70% of Japanese market used Japan-made semiconductor equipment. This also led to Domestic mass production of wafer processing system while achieving its unique position in the World Market.

The Japanese Semiconductors expertise was seen in almost every product of electric home appliances, a high degree semiconductor was incorporated that were launched anywhere in the world. With constant demand of new features, the number of new products were development based on micro technology, new circuit of semiconductors, resulting into a highly functional appliance at a reasonable price. The Japanese firms rose to market dominance for longer period was dynamic random-access memory (DRAM), the memory chips used in computer hardware, and a technology area where almost an autonomy was seen.

As the Japanese Government and manufacturing industries together celebrated the golden age in home appliances, a new era arrived for Japanese skill. The much awaited success was achieved in the form of "digital home appliances". Or as analysts call as the three sacred treasures; "digital cameras", "flat-screen TV" and "DVD recorder". But these 3 key segments also led significant role in changing the look of the World Semiconductor industry. Japanese companies were unable to catch up the speed and pricing of market. Japan's electronics and semiconductor industry has been undergoing a major change in recent times. This is best illustrated by the evolution of the smart phone. Japanese Manufacturers developed and successfully brought the smartphone and tablet to market long before than US Manufacturers.

But, Japanese manufacturers positioned the smartphone as a telephone device and exclusively focused on the Japanese market, and also they failed to respond to the new demand or new wave and failed to produce attractive products for the global market. As emerging market countries has much advantage in producing such as mobile semiconductors, and as a result Japanese producers Market share has declined, The Japanese makers in smart phone market is totally unseen with few exceptions.

Currently Japanese Manufacturers are facing immense pressure not only on the high cost of manufacturing but also consolidation demands domestically. Japan's presence and influence in the semiconductor marketplace is being reducing Year on Year. Japan's largest chip companies have been undertaking organizational restructuring in response to their decline in Market share.

As the nature of industry demands the need for flexibility and innovation in order to constantly adjust to the rapid pace of change in the market. At the same time, the constant price-performance pressure is to be kept on scale. Hence new

producer's new manufacturers with less cost and high skill are emerging as start-ups. There has been new influx of Japanese firms who are following fables manufacturing model typically outsourcing manufacturing to low cost countries. Many Japanese companies are looking at India and Skill in India to develop, produce their Semiconductor Products. Few of them also looking at to set up an R & D center in India, while there are some concerns raised such as R & D Lab to patenting and to Market mechanism. But those are every company's challenges. Hope Japanese companies and Indian companies work together to bring new products, new technology to the ever changing Electronics and Semiconductor Industry. As Emerging market Not only India has its own demand to full fill the consumers requirements but also engineers in India can take lead to Collaborate with Japanese companies to learn the processes that could be incorporated for new fusion of development to cater to the World Market.

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