The Future of the Toner Industry in China, India and other Asian and Emerging Economies

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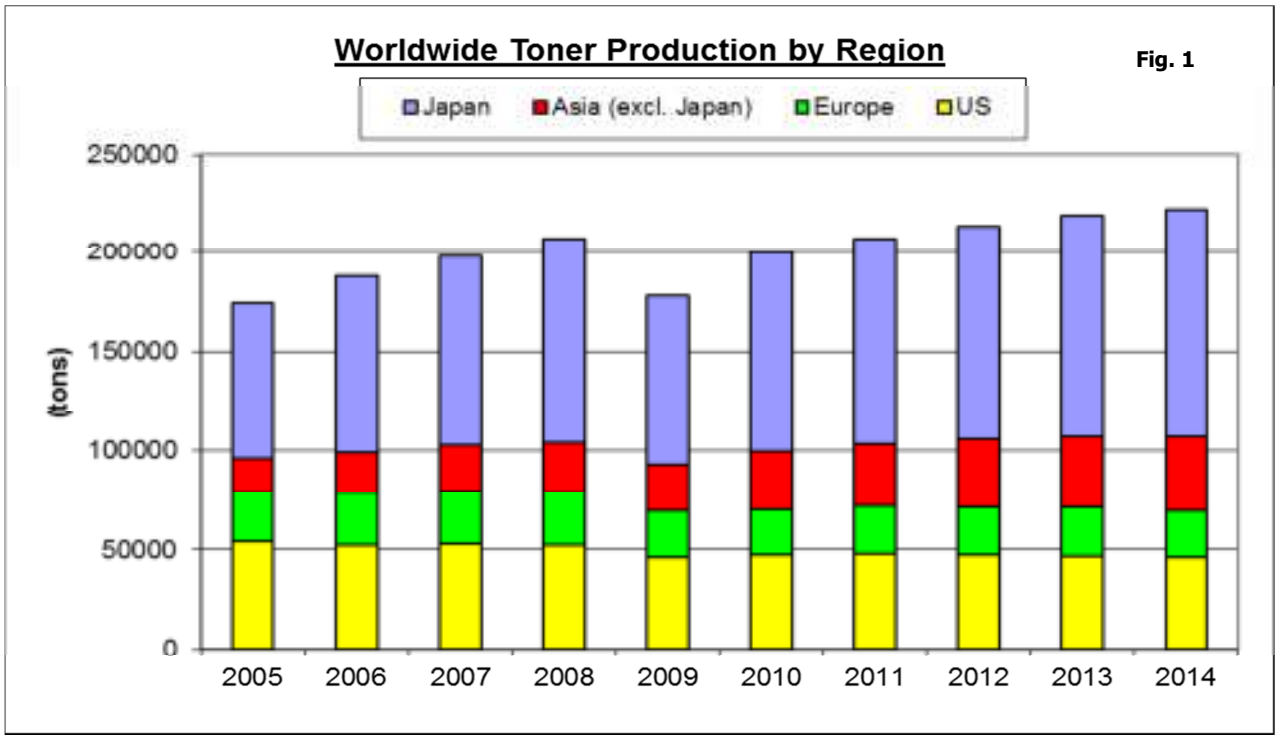
Last year was another interesting year in the toner industry. There has been a recovery since the reduction in Global production in 2009. There has been the continuation of the subtle but important shifts in technology, manufacturing and focus within this small but global community of companies involved in the manufacture of toner. The market for toner is one of "derived demand" and the global shifts in demand center and the demand for higher quality and colored toner have driven the changes that continue to take place. Overall the market for toner and toner related materials is expected to continue to expand with a continuation of growth in demand from color applications and new applications. However changes in demand, the growth of new, changed technology and altered the structure of the industry geographically have had a big influence on the global industry.

The Shape of the Industry

There has been a recovery in production of toner since the downturn in 2009 and the demand in 2011 has just about recovered to the 2008 level. The growth from 2009 to the present has however not been universally seen in all regions or companies. There have been withdrawals from the business by some manufacturers in some regions notably in North America and Europe and the growth of toner manufacturing in Asia particularly in China.

In the calendar year 2008, worldwide production of toner reached about 205,000 tons, declined as a result of the global recession in 2009 to about 175,000 tons and volume has slowly recovered regaining the same level as in 2008 in 2011. (See Fig. 1)

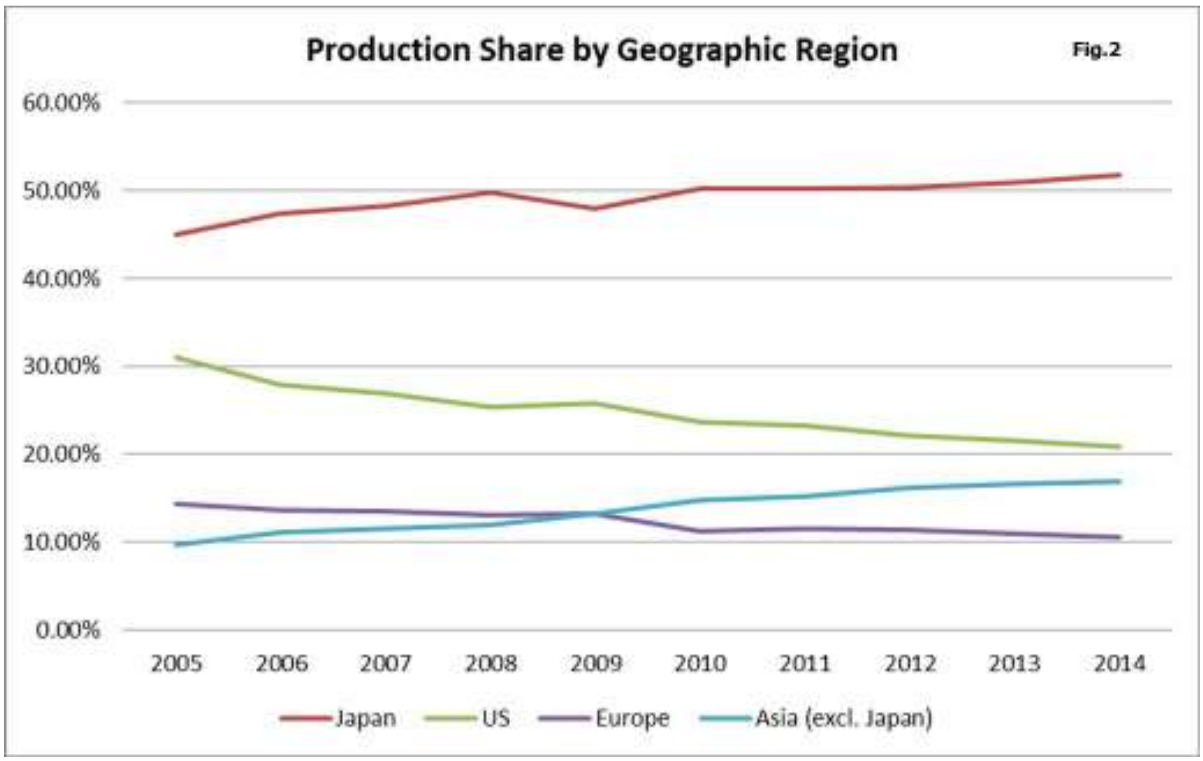


Global growth over the reviewed period (2005 – 2014) is forecast to be about 1.9%. During that period, it is predicted that there will be a continued decline in overall US and European production. It should be noted that US and European production is predicted to grow slightly after 2014 but may not quickly regain volumes that were experienced in 2007/2008 in the short term.

The volume of production in the US and Europe is growing at a rate lower than that of toner consumption, indicating an increase in the importation of toner to these regions. There has and will continue to substitution of Japanese overseas production with Japanese domestic production which has an important effect on this trend. There continues to be, of course, significant production of toner by Japanese manufacturers in Europe and the USA. However, as there is no investment in CPT production at Japanese manufacturing locations outside Japan, and with the change of toner technology used by Japanese OEMs moving ever more to CPT, there is a loss of production in the US and Europe as a result. Looking at estimates of production by Japanese manufacturers by company and region of production over the forecast period, the growth in Japanese manufacturing volume in outside Japan is lower than Japanese domestic production growth with CAGR% of – 1.09% vs. 2.98%. Globally Japanese production is expected to grow annually by about 2%. The growth in Asian (non- Japanese) production will be about 8% but of course this is of a global production share which currently stands at about 15%. (See Fig.2) These forecast trends mean volume growth leading to global annual production of about 220,000 tons in 2014.

There continues to be, of course, significant production of toner by Japanese manufacturers in Europe and the USA. As there is little or no investment in CPT production at Japanese manufacturing locations outside Japan, and if the toner technology used by Japanese OEMs shifts ever more to CPT color as well as monochrome, then there is likely to be a loss of production in the US and Europe as a result. Looking at estimates of production by Japanese manufacturers by company and region of production, the growth in Japanese manufacturing volume in outside Japan is lower than Japanese domestic production growth – 1.67 CAGR% vs. 7.91CAGR%.

The result of these changes, particularly for the OEMs and OEM contractors that are investing in new technology and colored toner technology, will be a continuing shift of market share from the independent manufacturers to these OEM and OEM-contractors.

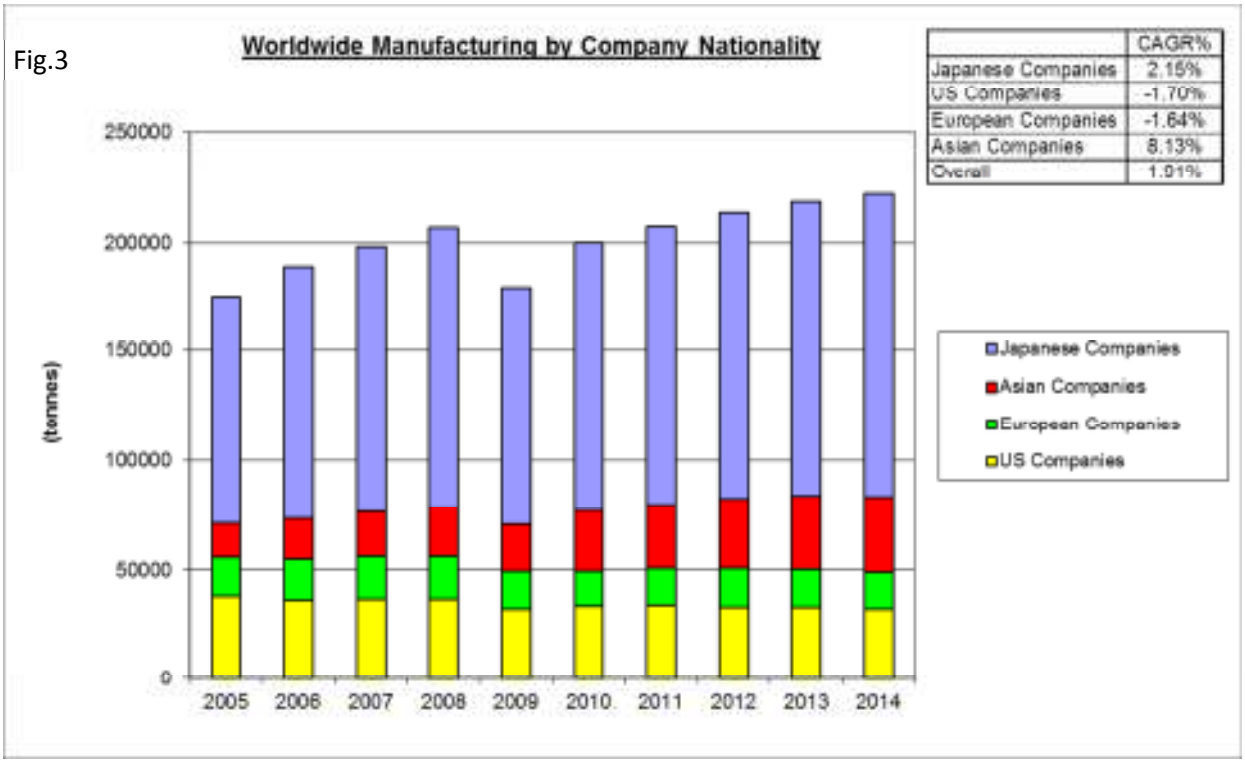


The Japanese toner manufacturers produced about as much as the rest of the global industry combined and this share will increase slightly over the remainder of the reviewed period up to about 52% in 2014. Asian production volume exceeded European production in 2009 in its continued pattern of growth. The production share of the Asian toner industry including China is growing both in number and capacity of manufacturers.

When analyzed by producing company nationality the picture is changed slightly. There is still domination of production by Asian companies including Japan with a global production share of about 75%. (Fig. 3) We can also see that the production by Japanese manufacturers accounts for about 62% of world production and this share is set to continue to grow in the

coming years. From a smaller base Asian (non-Japanese) company production will grow at over 8% rate annually increasing share from 13% to nearly 16%. This is all against a background of declining production share of US and European manufacturers.

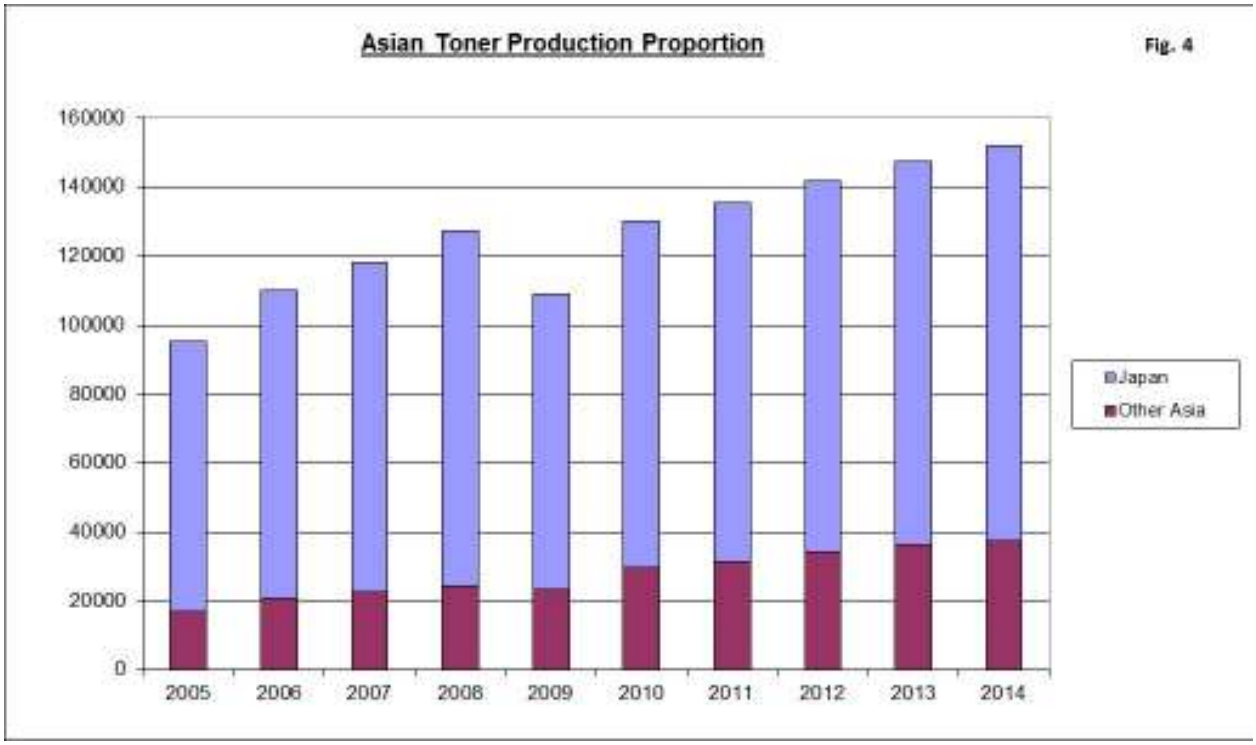
Fig.3



Asian Toner Industry

The major growth in production in the global industry is in Asia including Japan. It is in this region that there continues to be major investment in technology and production facilities. Implementation of increased production capacity of existing and new technology toner and advanced colored toner production facilities in Japan combined with a steady increase in investment in both conventional and chemically prepared toner production in Asian countries including China is the reason for this trend. There has been some investment in colored toner manufacturing in Europe and the US but on a smaller scale than in Asia.

Viewing just Asian production we can see the trends and split between Japan and Asia excluding Japan in Figure 4.



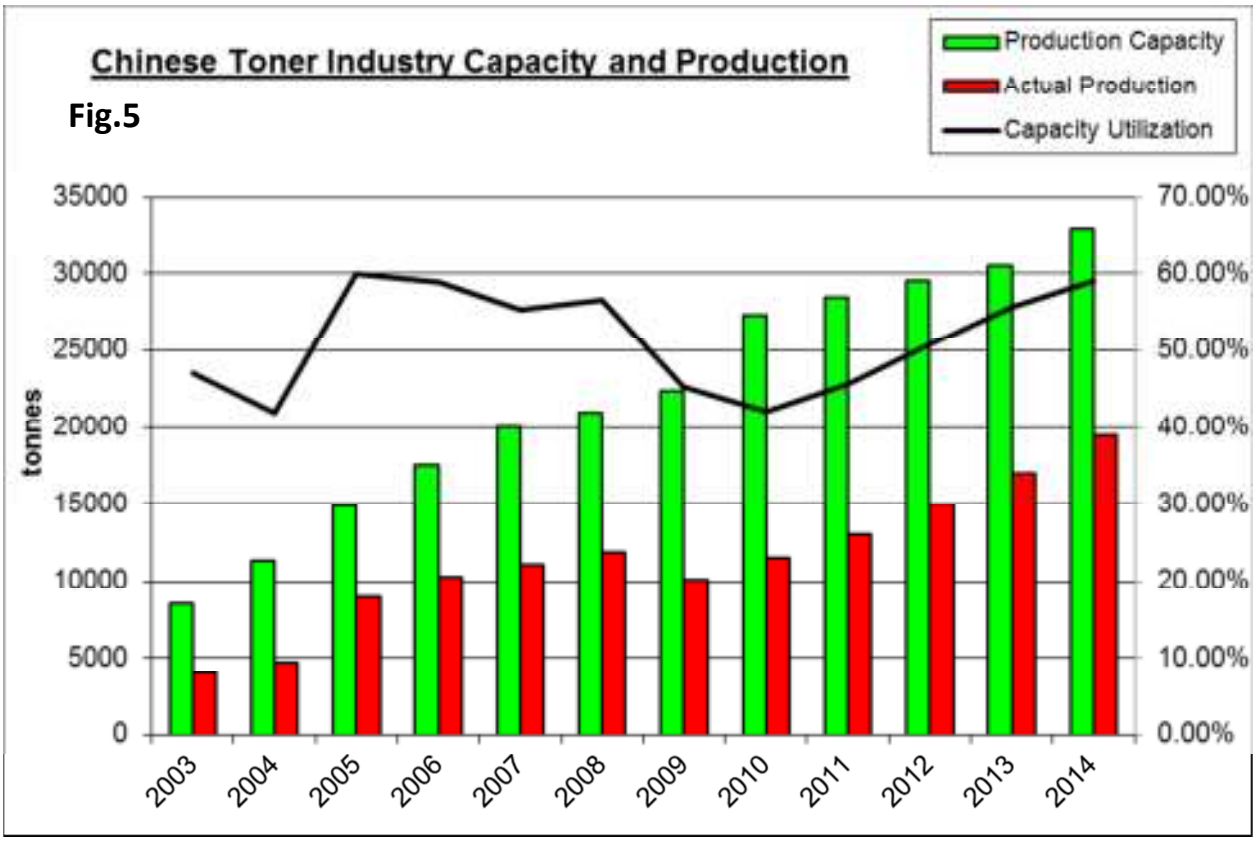
Greater Asia Industry Trends

There is a proliferation of manufacturers particularly in Asia with some new entrants starting their enterprises focused on color and CPT from the outset. This growth is particularly strong in China. There is already conventional monochrome production capacity in China which is also being enhanced by investment in either new plant or acquisition of used plant from the USA. The growth in cartridge production in China and the region to satisfy growing domestic as well as export demand is the driver for much of this investment. China is in particular having an influence on many levels including that cartridge remanufacturing / manufacturing is moving to China and other low-cost areas now with an estimated 20% of USA demand for remanufactured laser cartridges being produced in China. Consequently Chinese laser toner cartridge production is growing rapidly to satisfy both domestic market demand growth and the demand from export regions. A not inconsiderable part of the demand for toner is for new compatible cartridges as well as remanufactured cartridges. This is of course bringing close attention regarding the Intellectual Property (IP) violation concerns of the OEMs and their partners particularly in the USA and Europe. To satisfy demand in particular there is growth in production capacity being installed in China at existing and new produces. This is against a background of existing available capacity for conventional toner production in the USA and Europe creating global conventional toner production overcapacity.

Chinese Toner Industry

Analyzing the Chinese toner manufacturing industry (excluding Taiwan) we have a situation where the capacity currently exceeds demand and that will continue to be the case in the near future. This

has not however dampened the trend in the Chinese industry of continued investment in productive capacity. (Fig.5)



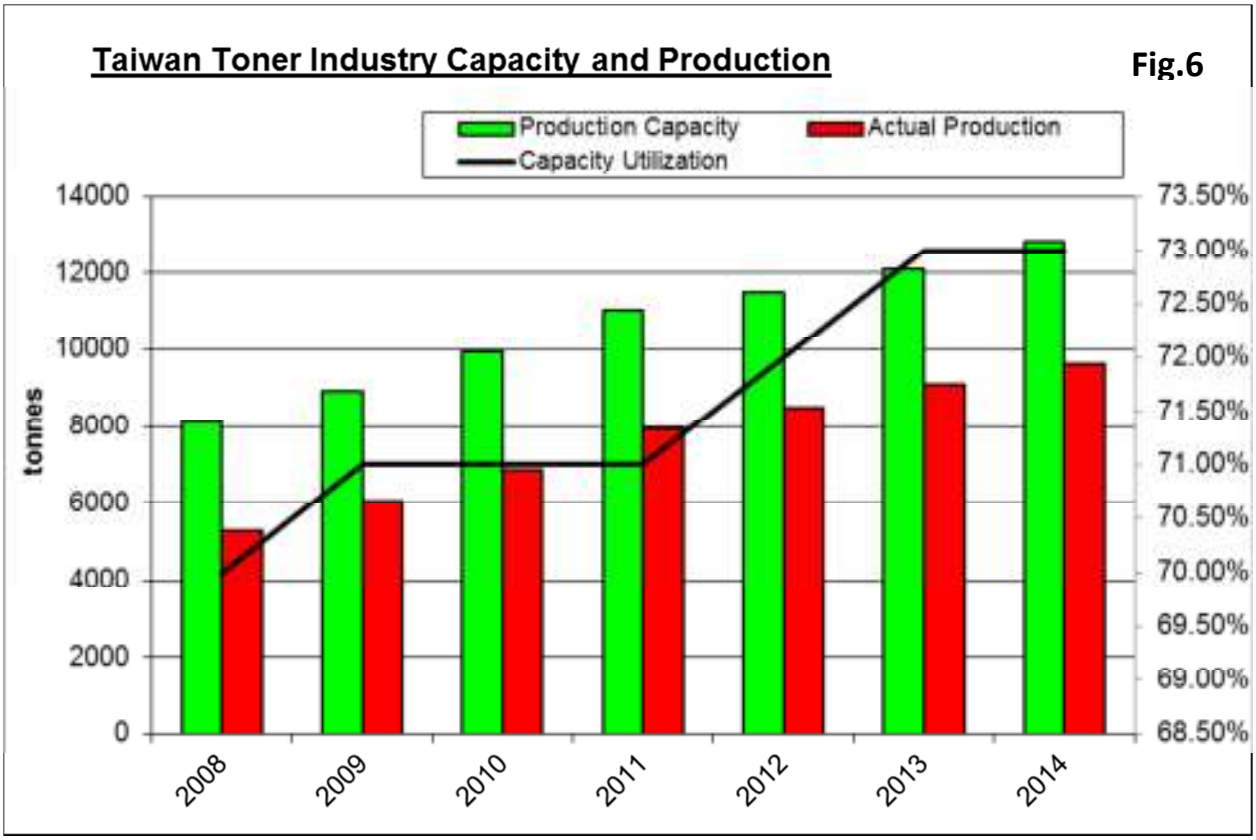
There are currently more than 35 domestic manufacturers in China. Some of these companies are quite small but there are some substantial production facilities in operation. Amongst the largest manufacturers are Handan Hanguang OA Toner Co., Ltd., Wuhan Pointrole Information Technology Co. Ltd, Tianjin Zhonghuan TCOA Electronics Company Limited, Wuxi Jiateng Magnetic Powder Co,, Ltd, WuQiao HuiKe Office Consumables Co.Ltd. and ICMI (China) Ltd. Most domestic production is "non-captive" and therefore the production capacity is directed at the aftermarket not only domestically but also in export territories. The strongest export territories for Chinese production is in Asia and the Middle East but Chinese production continues to make inroads into the US and European markets either as cartridge fill or as bulk. The total domestic production capacity in 2011 is expected to be about 28,500 tons. Capacity is forecast to grow on average by 9.4% per annum between now and 2014 and domestic production is expected to grow by 14% per annum in the same period. There is currently significant spare capacity but this is not deterring industry participants form continued investment in capacity. The cost of manufacture to the domestic toner producer is lower than the producers in the USA and Europe and this is of course not specifically as a result of lower manufacturing direct labor costs but lower facilities operation costs.

There are some foreign manufacturers that are currently present in China taking advantage of proximity to the Chinese market and lower operating costs. Companies with manufacturing operations in China are Ricoh Asia Industry S.Z. Co. Ltd. in Shenzhen, Fuji Xerox in Shanghai, Tomoegawa Imaging Technology Huizhou Co. Ltd., Trend Tone Imaging Ltd. (a member of the Everlight Group) and Jadi Imaging Technologies (Suzhou) Ltd. There is continued investment at these companies.

In the Chinese industry however even with the installation in some companies of new advanced production lines the quality of production is still a problem of top importance in most of domestic enterprises. There are limitations in the availability of qualified personnel including R&D staff and an immature raw material supply to the industry. There is some improvement in the latter especially with the investment in technical and production facilities by some Western suppliers. The exception is in the area of resin manufacture where there appears to be no attention paid by Western or Japanese resin makers. However there has recently been some significant effort by domestic resin makers. There are five domestic toner resin makers but hitherto the quality of products has been questionable especially for the use in making products for supply to sophisticated markets like Europe where quality, environmental and health factors are of prime importance. The major issues regarding toner polymer have been concerned with consistency of quality and volatile organic compound (VOC) content.

Mainland China is becoming an important production base for imaging supplies because of the favorable investment climate, lower potential production cost and the growing domestic market.

As part of the picture of the Chinese Toner Industry of course there has for long been production of toner in Taiwan particularly at Taiwan Fuji Xerox though the continued production is in jeopardy of reduction or elimination with transfer of production back to Japan. There are however domestic manufacturers in Taiwan namely Royal Precision Technology Co., Ltd., Trend Tone Imaging, Inc. and Sinonar Corp. The latter is a manufacturer of solely CPT colored toner products. There is strong production growth in these companies as the Taiwan and mainland consumers increase their demand. This trend is expected to continue and there will be growth from the current production level of just less than 7,000 tons per annum to a level of just less than 10,000 tons in 2014. Capacity utilization is expected to continue to be around slightly more than 70% over the ensuing period. (Fig. 6)



Indian Toner Industry In common with many industries the potential for the Indian toner industry is very favorable. The potential is currently second only to China with the country's large workforce and an education system that graduates 2 million proficient English speakers with strong qualitative and technical skills each year. The rapid rise in literacy rate, decline in poverty and an exploding urbanized middle class domestic demand is set to show corresponding growth. One of the biggest hurdles to the growth is the ability of India to handle the needed improvement and enhancement of the country's infrastructure to enable this growth prospect to be fully realized.

There are by contrast to the industry in China only a handful of toner manufacturers. The industry currently is comprised of six manufacturers which are **I**ndian Toners and Developers Ltd. in Rampur, Uttar Pradesh, Rathi Toners Ltd.in Bhiwadi, Rajasthan, Pure Toners Pvt. Ltd. in Vadodara, Gujarat, Sheishin Advanced Material Technologies Ltd. in Hyderabad, H.S. Easwer & Company in Faridabad, Haryana and Navran Advanced Nanotechnology Development International Pvt. Ltd. in Dhamandri, Una, Himachal Pradesh. The latter company produces only colored CPT products.

Total production of the Indian toner industry is forecast to reach 1900 tons in 2011 and that represents a capacity utilization of just less than 60%. Production is forecast to increase to about 2500 tons in 2014 and there is anticipate to be continued growth in both production and capacity. (Fig. 7)

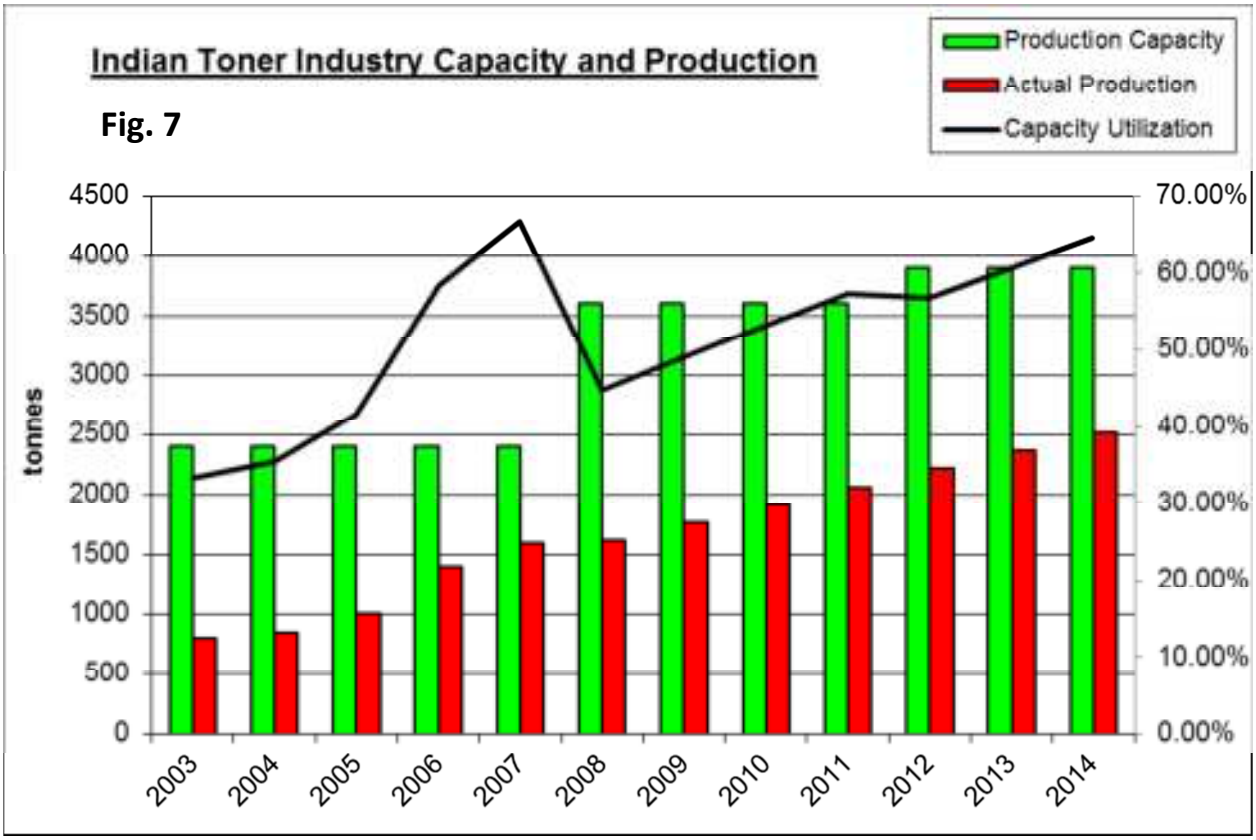


Fig. 7

Malaysian and Thailand Toner Manufacturers

Jadi Imaging Technologies Sdn. Bhd. is the sole manufacturer of toner in Malaysia. This company was established in 1993 and the company currently has five production lines in Malaysia with an estimated capacity of 6000 tons per annum. As already mentioned the company has a plant in Suzhou in Mainland China with two production lines with a capacity 2000 tons per annum. The Malaysian production in 2010 was reported to be 3770 tons. The company currently produces conventional monochrome and colored toners. In 2011 Jadi is set to introduce bio-mass based conventional and chemically prepared toners utilizing raw materials derived from Palm Oil under the trade name Palmotone. The research on palm oil-based CPT began in 2005 as a joint-collaboration between Jadi and the Chemistry Department of University of Malaya, a premier university in Malaysia. This company has invested in Research and Development consistently over its relatively short history to good effect.

There is one small manufacturer of toner in Thailand called Dynatec Co. Ltd. which was founded 1992. The company manufactures black and color toners for use in analog and digital copiers as well as in laser printers. They produce both monochrome and colored toners but their production volume is quite small.

South Korea Toner Industry

The toner industry in South Korea is substantial and well founded. The participants in the industry in South Korea are LG Chem Ltd., Union Chemicals Ltd., Baiksan OPC Co, Ltd., Saehan Media Co.Ltd., Creative Imaging Technology Co., Ltd., Samsung Fine Chemicals Co., Ltd and eXaX Toner, Inc (which was DPI Solutions). The last two companies produce only CPT colored toner products by their own patented technologies.

The production of the South Korean industry currently is about 11,000 tons per annum and with a capacity utilization of about 70%. The pattern of growth in the industry is expected to mirror other Asian industry with relatively strong growth as demand in the Greater Asian Region steadily grows.

The Bottom Line

The global shift in demand has created a shift in production. Lower costs and a will to invest in development of new production facilities and in new technology have together established a pattern of growth and healthy prospects for the toner industries in the Greater Asia that bodes well for the future in the region.