

Globalisation research programme

The IfM is actively developing a programme to explore how globalisation is impacting the nature and spatial distribution of manufacturing activities. Our analytical framework is the manufacturing value chain from R&D, through production and supply to end of product life management.

The early country focus has been on China, Germany, India, Japan and the USA. For the initial phase of the India study we met with representatives from the following:

Industry

- Godrej & Boyce Manufacturing Co. Ltd (Chairman)
- Hindustan Unilever (Executive Director Supply Chain)
- Lafarge (Director Production)
- Tata Motors Ltd (Managing Director)
- Ultra Motors Ltd (Chief Executive Officer)

Industry associations

- Federation of Indian Chambers of Commerce
- Confederation of Indian Industries

Policy makers and government

- Council of Scientific & Industrial Research (Acting Director General)
- Department of Industrial Policy and Promotion (Permanent Secretary)
- Department of Scientific & Industrial Research (Permanent Secretary)
- National Manufacturing Competitiveness Council (Chairman)
- British High Commission (Deputy High Commissioner and teams in Delhi and Mumbai)

Resurgence of manufacturing in India

Viewed from the perspective of international manufacturing, the Indian economy is seeing a dramatic resurgence.

- India sees itself as having 'missed-out' on manufacturing (high-tech and high volume) and is determined to build its capabilities here, no-longer accepting a 'services' only dimension to its internationally-engaged economy.
- Central controls on the economy have been relaxed for most sectors in respect of both production and distribution. The relaxation of foreign currency restrictions and of controls on borrowing by private firms has allowed Indian manufacturers to engage fully with the global economy.
- Manufacturing is expected to grow between 12-14% over the next few years with a two track strategy involving a 'high-tech production & services' economy and in parallel a jobs-creation driven 'mass production' agenda that includes an emphasis on food processing and distribution.
- Development of an efficient food processing supply chain supporting a developing modern retail trade sector is seen as crucial to reducing current high levels of wastage that result from a fragmented distribution system. Agriculture remains of great importance to GDP and employment throughout India.
- Infrastructure investments are on the increase; in line with projected growth but unlikely to meet demand (given uncertainty on implementation capability). The upstream supplier base has improved and OEMs are benefiting from both domestic and Asian-wide component sourcing. Current demands on water and energy resources may question the sustainability of India's growth as it outstrips infrastructure expansion programmes. State governments play key roles in future growth and are natural platforms for promoting industrial development.

Going global: *Several major, family-owned Indian corporations, able to operate swiftly and flexibly, have used international M&As to access new markets, technologies and brands. The US and the UK have been top destinations. Examples of acquisitions include: Sudanese oil, German metal forge, South Korean truck maker, British tea and textile companies, French television manufacturer, Singapore paint company, Spanish pharmaceutical firm, Chinese chemicals, Australian coal mine. Recent press coverage has featured possible interest in Land Rover Jaguar.*

- R&D Capability is currently limited:
 - inadequate capabilities in universities especially at postgraduate level; Indian Institutes of Technology providing limited number of high quality graduates with management retention widely reported as problematic
 - restrictions on overseas academic institutions (or at least uncertainties as to what is permitted) preventing rapid development.
- The booming economy means that there are shortages in the supply of graduate manpower, though the Prime Minister recently announced the intention to establish new universities in each state.

Implications for UK companies

- The UK's research and design strengths, which support established brands, complement India's IT and cost effective component production capabilities - yielding opportunities for collaborative working and further M&A activity.
- There are continuing opportunities to benefit from BPO and back-office capabilities in India taking advantage of language skills and IT infrastructure.
- Major growth in energy capacity will offer opportunities in the sector, in particular clean energy technology and related services.
- Postgraduate skills gaps provide for opportunities in both education and executive training.

Research & Development

Design

Supply management

Production

Distribution/
route to market

After sales services

Value chain: key findings and highlights

R&D and Design

- Company investment in R&D is generally restricted to incremental development projects with limited funds for fundamental research. Notable exceptions are in the IT Industry and the application of Information systems (as embedded systems) in capital goods.
- The historical context, where Privately Owned (and to some extent State Owned) Indian enterprises were self-reliant has resulted in well developed design capabilities. However these capabilities are limited largely to incremental design improvements and the ability to internalise component manufacture.
- Domestic design capabilities have also benefited from more recent JV partnerships e.g. Tata Motors with Fiat, resulting in a rapid catch-up on modern manufacturing technologies.
- IP protection is seen as reasonable with cases being successfully brought to court although the process can be very protracted.
- Current legislation restricts the entry of OEMs into certain downstream processing sectors that are 'protected' for SMEs; e.g. Petrochemical firms cannot develop actively into plastics. This mitigates against these firms moving into higher-value and higher-volume products; rather they chose to operate in niche markets (e.g. polymers). The fragmented nature of the supply chain makes partnerships with many SMEs impractical.
- The rapid increase in overseas acquisitions appears to have two main drivers; the acquisition of technology and the internationalisation of domestic firms to access overseas markets. Capabilities in R&D and design are likely to increase dramatically as a result.
- R&D support for public private partnerships is open to all, but in practice tends to go to the Pharma, Bio/plant sciences, chemicals and electronics sectors.

Supply management

- Historically there has been an over-reliance on internal supply of basic components, both within India and within the firm. Backward integration was regarded as being necessary to meet quality and service requirements.

- The trend for internal component manufacture, coupled with improvement in capability, has resulted in many Indian firms now exporting routinely to international markets. Consequent improvements in quality and service demanded by international customers, and scale volumes that they generate has resulted in India becoming a leader in key components supply in several industries especially Automotive.
- The recent developments in supplier capabilities, in terms of cost, service and quality and the ambition of OEMs to grow quickly is resulting in a rethink in outsourcing strategies. Previous approaches that favoured in-sourcing are now being questioned. In some cases there is a complete reversal of previous practice (e.g. Tata Motors 80/20 in-source/outsource ratio moving to a more conventional 20/80). Others have, after indifferent experiences, adopted more selective make-buy approaches e.g. Godrej.
- Indian firms are benefiting from the development of the supplier base but also source more widely as Asian supply chain capabilities from China and SE Asia provide a rich source of low cost components.

Production

- Industrialisation and support of manufacturing is a declared priority of the Government, on a par with the development of IT and services
- Rapid increase in importance and growth of manufacturing (14.3% last year), on a par with the service sector
- Low cost manpower; approximately 70% skill to skill in comparison with China provides for cost efficiency
- National policies are focused on job creation and key sectors that support this activity; electronics, textiles and leather although many target domestic markets (e.g. 97% of textile outputs are for the Indian market).
- A twin track approach is being adopted as part of a new manufacturing strategy; high-tech for global competition, low tech for employment
- Systematic development of Manufacturing in 58 'second tier' cities
- Emphasis is on food processing near point of production to soak up people and improve proportion of food to mouth (some 30% is wasted in the food supply chain to urban populations.)

- Second/third generation of Industrial families are western university educated, more ambitious, adopting more core product focused and international strategies.
- India is a rich source of new low-cost business models developing products at new low cost thresholds e.g. Tata's "1 lakh 4 door car".

Distribution/route to market

- The traditional Indian 'Own' Distributor model serving a fragmented retail sales structure is set to face radical change. Although foreign retailers remain blocked from entering the Indian retail sector, many large domestic manufacturers (e.g. Reliance, Birla) have announced massive entry plans into the organised trade sector. Walmart too have entered by adopting an upstream large warehousing position as a key supplier to Domestic Retailers.
- The development of the organised modern trade, including retailers, equipment dealerships and national repair service networks is set to develop the after-sales service dimension in the coming years. In several cases studied, the business model was predicated on significant revenue and value creation emerging from after-sales service, repair and supply (information, parts, and power).

After sales services

- IT and services sector is seen as a major and distinctive strength of the Indian economy and takes an equal priority to manufacturing. Indian service industries are well supported by an established and growing business process outsourcing industry, with a predominantly Western customer base. Thus far this has targeted international consumers but is likely to influence the development of domestic industries in areas such as banking and health care.
- India's IT industry, despite contributing significantly to its balance of payments, accounted for only about 1% of the total GDP. Excellent infrastructure in the service sector and low communication costs have helped India to be a dominant player in these sectors.
- Within the high-tech services area, the integration of strong domestic manufacturing and IT capabilities may support the development of 'intelligent' embedded systems, e.g. in Automotive and White Goods where such systems are being considered across the product range.