



Make-in-India: Managerial Challenges

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Abstract

Mission Make-in-India has been promoted as a panacea for all the ills of the manufacturing sector of Indian economy. This paper is an attempt to understand 'Make-in-India,' distinguish it from 'made-in-India', explore its relevance in the current context of India, explore the sectors that can make a difference through the mission and explore the managerial challenges of making the mission a reality.

Key Words: *Make in India. Import Substitution. Export Promotion. Value capture. Value addition.*

Preamble:

In the post-2014 context of India, 'Make-in-India' (MII) has emerged as a mission or buzzword synonymous with the initiatives of making India a manufacturing hub, of enhancing the share of the Indian manufacturing sector in the GDP of the economy, of increased employment opportunities to teeming millions of Indian youths and many more. This paper is an attempt to unravel the meaning and relevance of the phrase, to explore its difference vis-à-vis the earlier initiatives of export promotion and import substitution, to explore its relevance in the context of India's current stage of economic development, and to assess the managerial challenges of achieving the goals envisaged through the 'Make-in-India' mission.

Meaning and Relevance of MII:

The concept of import substitution envisaged making of products for domestic consumption using domestic resources thereby conserving the precious foreign exchange. The concept of export promotion envisaged use of domestic resources to make products of demand in the external markets so that the country is able to earn foreign exchange. Both the concepts envisaged better utilization of domestic resources on one side; the former envisaged conservation of the foreign exchange while the latter envisaged earning of the foreign exchange¹. Both concepts envisaged making goods domestically - made-in-

India. The higher the indigenous content in the product, the more made-in-India it would be. In the MII concept, place of manufacture or the percentage quantum of indigenous content is not the prime factor of significance. The prime factor of significance is the percentage value addition within the country.

"... When Apple started selling smart-phones for \$300, China's share from assembly was just \$7. Apple got \$150 of the value through innovation, marketing and profits. The remaining value was split among component suppliers, transporters and other minor partners."²

The essential difference is the focus being given to value-addition or value-capture happening within the country. In the above example, the smart-phone may be manufactured in China; but significant share of the value-addition is grabbed by Apple, a US firm making Apple a make-in-USA story. Micromax, Karbon and Lava are Indian smart-phone firms trying to replicate the Apple strategy. Micromax has already replaced Samsung as the largest seller of smart-phones in India. The phones are manufactured in China, but they are conceptualized and designed in India and the major portion of the value-capture also is taking place in India.

The significant value-capture happens through innovations in



technology, innovations in product-design and innovative marketing. In the battle for value-capture the competitive asset that comes into play is the capability for innovation. This phenomenon is quite in sync with Porters theory on the stages of economic development³. When an economy shows signs of the innovation-driven stage of development, its capability for innovations should be high and at this stage the economy and the firms within it would be competent to achieve significant value-capture. India and its firms now need to stretch wings in this direction.

What happens to the firms in an economy that has not reached the innovation-driven stage of economic development? What happened to China in the case of Apple smart-phones cited earlier? Since China was not competent or equipped to compete with Apple in the business of smart-phones, for the present it needed to be satisfied with huge volumes of business it got from Apple even though the per unit value-addition was meager. At this stage its competence was in manufacturing the product at a low cost. May be over the years it would acquire competence to grab higher percent of value-addition; at that time it would gradually move up the value chain. What happened to Maruti Udyog Ltd (MUL) when Suzuki Motor Company collaborated with it for the first time? In the early 1980s, when Suzuki collaborated with MUL, MUL was in no position to grab any value out of the final product being churned out. Most of the components were imported and the designs were literally owned by Suzuki⁴. Over the years MUL developed competence to make most of the components indigenously and the production capacity also had grown. Today, even though Suzuki owns most of MUL, the facilities in India are fairly developed and Suzuki can possibly consider making automobiles for third country exports from India. Significant part of the value-capture, in such a situation, could happen in India.

One of the triggers for initiating MII as a mission was the hope that it would help balance the structure of the economy. In the last quarter of the twentieth century, the IT boom had boosted the share of the services sector in the Indian economy to 59.93% of GDP in 2013-14 while the manufacturing sector accounted for 16.80%. Most of the Asian neighbors had more robust manufacturing sectors: China (32%), Malaysia (24%), Thailand (34%), Indonesia (24%) and Philippines (31%)⁵. Policy makers and economists had a suspicion whether the skewed growth of the services sector would be sustainable in the long-run. At the same time China was emerging as the manufacturing

hub of the world. They wanted the Indian manufacturing sector to be more robust and hence they thought of MII as a policy initiative. It was hoped that this would also generate significant employment opportunities for the teeming millions of young Indians.

Has India entered the Innovation-driven stage of economic development?

To be able to take full advantage of MII as a policy initiative, the economy must have entered the innovation-driven stage of economic development. Has India reached this stage? Has Indian firms acquired enough knowledge assets to be significant in the domain of innovation?

A cursory look at the history of economic development of India would indicate that India has been in the factor-driven stage of economic development in the pre-independence era and right through the 1950s. India started entering the investment-driven stage of economic development in the early 1960s and this continued till the late 1980s. The gradual emergence of innovation-driven stage of economic development can be seen in the post liberalization era when economy became open and the fresh air of competition started blazing through⁶. Globalization, emergence of global firms and competition based on knowledge assets etc commenced only since the 1990s. Indian economy definitely is not homogenous; but it is reasonable to presume that some segments and layers of it have entered the innovation-driven stage of economic development. Evidence of this can be seen from the innumerable instances of innovations happening in the economy.

Use of second-hand machinery in the sectors of textiles, pulp& paper etc were quite common among Indian industries for decades. European manufacturers discard their facilities after certain specified years of working life. Such facilities were available at throw away prices; Indian businessmen and their technologists used to find them useful for the Indian conditions and the market for another span of a decade or so with necessary reconditioning besides such facilities and equipments being far more affordable to the domestic purchasing power. Very often the European manufacturers were discarding the facilities not because they had lived out their productive lives, but advanced and upgraded versions had come into the market and replacement was inevitable due to competitive pressures. In the 1970s



the entire plant of Scooters India Ltd, near Lucknow was established on the basis of acquiring the discarded facilities of Innocenti in Italy⁷. In the late 1980s Essar Gujarat⁸ established its first sponge iron plant near Surat based on imported second-hand machinery from Germany. Arvind Mills Ltd⁹, a leading firm in textiles with significant presence in denim had time and again availed second-hand machinery from Europe. Many of the mid-sized paper and pulp mills had imported their basic production machinery by way of second-hand imports. In fact in the 1970s and 1980s when machinery imports were controlled through licenses and permits of Govt of India, there was a distinct policy to allow second-hand machinery in many of the sectors. The only pre-condition was that the domestic buyer must obtain Chartered Engineer's certification regarding the residual productive life of the machinery¹⁰.

In the early 1990s when washing machines became popular in India, rural entrepreneurs of Punjab contrived the machine to mass-produce consistent quality of 'lassi'¹¹. This boosted the sale of washing machines across Punjab. Close on the heels, the villagers of Punjab found a new application for Godrej Hair-dye¹²: using the hair-dye to give a shine to the buffaloes being taken to the cattle market; possibly the buffaloes looked younger and healthier and fetched the owner better prices! Swaminathan Aiyar describes about a mobile charging station found on a small town on the highway near Berhampur in West Bengal that did not have electricity supply. On inquiry it was found that the vendor of the shop operated the facility out of power drawn from an old automobile battery. During the night he would take the battery to a nearby town that had electricity supply and get it charged¹³.

A doctor in Jaipur designed and created a prosthetic foot, nick-named Jaipur Foot¹⁴, customized to the rugged conditions in India at a cost of \$30 whereas a comparable product in US was costing almost \$8000. A retired eye-surgeon, Dr G Venkatswamy together with a group of friends, in 1976 started a non-profit entity in Madurai, Tamil Nadu, to provide eye-care at affordable prices and revolutionized the concept of eye-care in India. Today this venture has facilities at multiple locations in southern India, it has handled 32

million patients and has carried out 4 million eye-surgeries till 2012. It has the world's largest facility for making IOLs (Intra Ocular Lens) in the world¹⁵.

Banking sector in India, with the introduction of computers, internet technology, mobile telephony and the ubiquitous Aadhar Card (Universal Identification No.) has been undergoing a silent revolution in its processing capability, speed of transaction, access to the smallest customers and above all inclusiveness¹⁶. Cancer immunotherapy¹⁷ is one of the latest research areas in fighting cancer; lot of progress has been made in US and UK. Surprisingly there is a start-up firm, Western Region Pharmaceuticals P Ltd working on this area, in Ahmedabad, and it has reached a stage of clinical trials. If this firm succeeds in its attempt it would have far reaching impact on the success-rate of cancer treatment and the cost of handling chronic cases. Similarly an SME named Sahajanand Laser Technologies Ltd, Gandhinagar is engaged in making laser cutting machines for very precision applications including the diamond industry. This firm also is a start-up and is yet to bloom to its full potential. These start-ups would sooner than later unleash an avalanche of innovations and transform the industrial scenario in the country.

Tata-nano is another example of innovation in the country¹⁸. In 2009, Tata Motors launched the Tata-nano at a price-tag of Rs 100,000 (\$2,500 approx at the prevailing exchange-rate). The economy car with the lowest price-tag produced till that time was the one produced by Renault at \$5000. Tata-nano did not succeed in the market; but its achievement lay in producing a car at an unimaginable price-tag. Tata Motors have introduced a modified version in 2014 at a price-tag of Rs 240,000 (approx \$4,000 at the current exchange of 2015). Tata Motors has demonstrated marvelous technological and managerial feat by holding the cost at such levels. Could it use this capability to manufacture Jaguar and Land rover, which are also in the stable of Tata Motors, at distinctly low costs? If it could, then Tata Motors would emerge as a global leader in the automobile sector.

The much publicized Mars Mission¹⁹ of the Indian Space



Research Organisation (ISRO) during 2013 and 2014 was accomplished at an overall cost of \$74 million. A similar mission of NASA (Mission MAVEN) has been accomplished at a cost \$671 million. ISRO has been successful at the first try while such an achievement has eluded NASA. Based on this technological achievement and the inherent cost advantage, ISRO has started getting inquiries from many countries to launch their space missions.

Vijay Govindrajan defined the concept of 'reverse innovation'²⁰ as a process of developing innovative products and processes in the developing countries and taking them to the rest of the world. He argued that the necessity for such innovations is more poignant in the developing countries. The series of examples only form a testimony to the concept propounded by Vijay Govindrajan.

Be it telecom, insurance, banking, bio-technology, medicine, space science or consumer goods individual Indians as well as Indian institutions and organisations have been displaying enormous capability in innovations all across the country. It is also worthwhile to note that such innovations are not confined to the urban centres; they are happening in rural areas and among moderately educated persons also. One reason could be that in order to survive in an environment full of constraints people and organisations have to think out of the box and they are compelled to innovate. Jugaad is the Indian word that describes an improvised solution born out of ingenuity, cleverness and resourcefulness. Many such innovations have been documented and analyzed in the book, Jugaad Innovation.²¹ There need not be any doubt about India ushering in the innovation-driven stage of economic development. India is definitely on the threshold of this stage. Today the challenge is how to harness this sense of innovativeness among the large number of its people to take the country forward.

Scope of MII in the current Indian Context

What is India's competitive advantage to push the MII mission? Can this be sustained over a long period – at least for the next ten years? Which of the industry sectors would be more amenable for the MII mission?

All along India's competitive advantage revolved around low manpower cost and the depreciating Indian Rupee. The IT boom of the past few decades is an example to this. Over the years increasing per capita income and rising wages have been eroding the advantage of low wages; but this was invariably offset by the depreciation of the Rupee. When Rupee appreciated between 2004 and 2007 most of the IT companies felt erosion in their profitability and competitive advantage. In the context of MII, most of the competitive advantage is expected to be created out of the innovative capabilities. In the coming years, wages in India are expected to rise with improving per capita income and standard of living. If the performance of the economy improves, Indian Rupee should appreciate. In such situations the only tangible basis of sustaining the competitive advantage would be those arising out of our innovation capabilities. So the real challenge will be to keep the cost of production low through innovative products and processes and through scale economies.

Knowledge sector is one of the sectors that can contribute significantly in the MII mission. Indian talent has made its mark in the IT and ITES sector already. New innovations in this sector and sharpening the talents and skills required in the higher echelons of this segment would help sustain India's competitive advantage. Business analytics, design, animation, digital technology are some of the emerging areas where India can acquire skills and sharpen its talent to the highest order. Life sciences, bio-technology, pharmaceutical sciences etc is another segment where focused research would help create newer, more affordable, more effective solutions to health-care problems of mankind. Focused research and educational efforts would enable the country achieve and sustain competitive advantage in these segments.

Engineering, automobiles, material science and aerospace form another cluster where India can create and sustain competitive advantage. Fair amount of expertise is already available in India. If Tata Motors can make the most economical car in the world or if ISRO can carry out its Mars Mission for less than what the Hollywood producers spent on making the movie 'Gravity', there is no reason why Indian entrepreneurs, businessmen, technologists and ancillary firms cannot meet the stringent specifications of global firms. India spends substantial resources in defense procurement. Railway modernization is another area of vast potential. If the tables are turned to make much of these in India and make India a manufacturing base for the rest of the world on these products, there will be

tremendous technological skill up-gradation in India besides the impacts on employment, wealth generation etc.

The above examples are only indicative. Such possibilities exist in almost every sector – textiles, garments, electronics, chemicals, entertainment, affordable housing, food-processing, organic vegetables etc. There is scope for the MII mission in every sector as long as we maintain the capability of innovation to come up with new products and processes to cater to the ever changing needs of the society and as long as we are able to keep the costs under control and ensure the overall competitive advantage.

Managerial Challenges of MII

Facilitations required to make MII a reality have been articulated by various consulting groups and professional bodies²². Prominent among them have been scrutinized to arrive at the common ground and an attempt has been made to build a framework of analysis. The emerging insight is outlined in the following paragraphs.

i. Stake-holders in the MII Mission: The prime stake-holders and their expectations are outlined in the next page,

Stake-holder	Expectations
Govt (Central and State)	<ul style="list-style-type: none"> • Wealth generation • Employment • Tax revenues • Technology enhancement of the country
Entrepreneurs/Investors (Foreign/ Domestic)	<ul style="list-style-type: none"> • Profitable business opportunity • Easy entry, easy exit • Hassle-free operation • Autonomy in operation
Employees	<ul style="list-style-type: none"> • Gainful employment • Professional and career growth • Hassle-free employment • Social security
Vendors/Suppliers/ Ancillaries	<ul style="list-style-type: none"> • Profitable business opportunity • Technological growth and up-gradation • Hassle-free transactions
Local Community / Population	<ul style="list-style-type: none"> • Get a share of the wealth generation • Opportunities for growth • Hassle-free co-existence

ii. Investors/Entrepreneurs: The core of the MII mission is to attract investors who bring in the investible funds and technology and initiate the business ventures. Hence it is imperative that we look at their expectations to engage in the business in detail. These expectations are in three dimensions – Infrastructure, Policy matters and Ease of Doing Business. These are further split into elements and each of them are outlined in Table-2

Though all critical elements have been dealt in the table, the most complex and critical element has been acquisition of land.

To minimize the hardships and to the entrepreneurs and the unpleasantness to the leaders of the government the following guidelines will be helpful

- State governments should identify areas of industrial townships and acquire the land well in advance to create land banks. These could be partially or fully developed to attract the prospective investors. Presence of land bank helped attract Tata Motors to Sanand in Gujarat while absence of land bank resulted in the unpleasantness that Tata Motors had in West Bengal²³.
- In acquiring land, it is desirable to acquire land that is less fertile and that is sparsely populated. This is a lesson from the experience of Nandigram in West Bengal.
- While there are many models of land acquisition, Chandrababu Naidu in Andhra Pradesh, in 2015, has created a milestone in acquiring fertile land for the development of the capital city of Amravati. In this model the state made the land-owners partners in the development and wealth-creation process.
- When land is given to an entrepreneur or a company for industrial purpose, it would be worthwhile to give the land on lease basis rather than outright purchase. This has the following benefits: (i) The cost of land does not get added to the cost of project, (ii) There can be a clause to take back the land if the project does not take off in reasonable period of time say 2 or 3 years. (iii) The lease rentals can be structured to increase over the years so that there is no undue burden on the project in the initial years.

The state has to keep in mind the objective of keeping the overall cost to the entrepreneur/company at a low level so that its competitiveness is not jeopardized. The state has to consider the macro-picture of the overall revenue to the state and the economy rather than the micro-picture of the land deal in isolation. Contrast the case where govt. of Andhra Pradesh gave free land to Indian School of Business at Hyderabad in 1992 and the case where Govt. of West Bengal refused to budge on the price of land offered to Infosys in 2008.

iii. Nurturing Innovation: Earlier it has been concluded that the success of MII mission depended on the country's ability to



sustain innovation continuously in every sector. It has also been stated that India is on the threshold of innovation-driven stage of economic development and that Indian individuals, institutions and organisations have been innovating enormously. Further it has been stated that the real challenge of taking the country forward lay in nurturing the innovations continuously and thus sustaining the country's competitiveness. Every innovation is a

bright spark and it needs to be hand-held and nurtured before it can become a tangible product or process or a business proposal. This process of hand-holding and nurturing is the process of incubation.

“Incubation is a highly unique and flexible combination of business development processes, infrastructure and people, designed

Dimension	Elements	Expectations	Facilitations
Infrastructure	Land	<ul style="list-style-type: none"> Fast acquisition Clear title Low cost to keep investment low and ensure higher competitiveness 	<ul style="list-style-type: none"> Each state to create land bank Develop industrial townships complete with roads, power, water, connectivity etc. Give land on long-term lease at low rent so that the overall investment comes down enhancing the competitiveness.
	Power	<ul style="list-style-type: none"> Turnkey power connection to start operations quickly Low price to have higher competitiveness 	<ul style="list-style-type: none"> Create adequate power distribution infrastructure at every industrial township so that connections can be provided quickly Pricing to be innovative to make it easier on the customer initially. Stagger the upfront cost
	Water & Drainage	<ul style="list-style-type: none"> Turnkey water and drainage connection Adequate, reliable and appropriate water supply. Low to moderate price to ensure competitiveness 	<ul style="list-style-type: none"> Same as in power
	Transport	<ul style="list-style-type: none"> Rail and highway connectivity Presence of logistics suppliers/facilitators. 	<ul style="list-style-type: none"> Same as above
	Telecom/Connectivity	<ul style="list-style-type: none"> 24x7 info highway connectivity. 	<ul style="list-style-type: none"> Same as above
Policy Matters	FDI	<ul style="list-style-type: none"> FDI cap as high as possible 	<ul style="list-style-type: none"> Benchmark with other investment destinations and create a policy commensurate with the country's needs.
	Taxation	<ul style="list-style-type: none"> Steady tax regime No retrospective tax Comparable to best investment destinations 	<ul style="list-style-type: none"> Reform tax structure benchmarking with those of faster developing countries. Let it be futuristic Introduce GST
	Labour Laws	<ul style="list-style-type: none"> Should facilitate hiring and firing easily End of inspection raj Standard reporting protocol 	<ul style="list-style-type: none"> Reform labour laws lock, stock and barrel. It is a state subject. Encourage states to act. Replace 'inspection -raj' with self declarations and external due diligences wherever required. Standardize reporting protocol.
Ease of Doing Business	Initial Entry & Clearances	<ul style="list-style-type: none"> Clear rules and easy procedures of entry Speedy decision making 	<ul style="list-style-type: none"> Reform the procedures On-line applications Time-bound clearances Third party, independent due-diligence where required.
	Administrative Environment	<ul style="list-style-type: none"> Professional, business-like approach Customer-friendly attitude Corruption-free environment 	<ul style="list-style-type: none"> Single window approach Engage professionals, professional agencies Time-bound clearances On-line applications, processing and tracking facilities Introduce the concept of 'Escorts'
	Regulatory Environment	<ul style="list-style-type: none"> Inspections not desirable; other forms of verifications (due -diligence) to be designed. Single window clearances 	<ul style="list-style-type: none"> Introduce self -declarations when values are not too large. When values are large introduce due -diligence by third/independent parties/agencies Time-bound, single window clearances
	Financial Regulations	<ul style="list-style-type: none"> Easy and free access to sources of finance Well-defined, customer -friendly rules and procedures Fast decisions & processes 	<ul style="list-style-type: none"> Define rules and procedures Time-bound clearances, on -line applications Professionalize banking sector.



to nurture and grow new and small businesses by supporting them through early stages of development and change.” [Definition by UK Business Incubation]

“A Business Incubator is an organisation that accelerates and systematizes the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including: incubator space, business support services, clustering and networking opportunities..... [and]..... a successful business incubator will generate a steady flow of new businesses with above average job and wealth creation potential.....” [Definition by EU Centre for Strategy and Evaluation Services]

In the process of incubation the entrepreneur as well as the business is nurtured to be competent to face the turbulent world. During this process the incubator facilitates to provide a range of inputs which would include the following: Technological guidance to perfect the product and processes, business modeling to arrive at a tangible business proposal, market evaluation and planning, commercial and legal aspects of the business, organisational aspects of the business, funding the project all through its stages etc. In order to support the innovation process, it becomes necessary to create large number of business incubators in the country. In USA and in Israel the business incubators have contributed significantly to the nurturing of innovative ideas²⁷. In India this is in a nascent stage and the following critical challenges are observed:

a. Technological aspects: Most of the technological products require elaborate technological development before they can be put into the market. For instance any chemical product will have to be developed initially at lab scale; then it is produced in a pilot plant and later at commercial scale. The product so developed will have to be tested for its performance at every stage. If it is a pharma product then the stages of trials are many: tested on animals, then clinical trials and only then can it go for test marketing. In the case engineering products proto-types have to be made first, then performance is to be tested through field trials, then

samples are given to customers to try out. Only if they are accepted does the product go for test marketing. The time required for this process is quite long and the conventional banking system would not offer any financial assistance at this stage. The entrepreneur has to depend on himself, or find an angel investor and seek a research grant. The path is never smooth. This is a major challenge being faced by the mentors and incubators.

b. Structuring of projects (Business Modeling): Most of the innovative ideas emerge from scientists and technologists. Before these ideas become tangible products, they require fair amount of commercial, legal, financial, marketing and strategic inputs. So it is necessary that these ideas (and the innovators) are mentored by persons who are well-versed in all the aspects of business. To find persons who are well-versed in all the aspects of business is really a big challenge before the incubator. Very often they engage a team of experts to complement the inputs and help build the enterprise. In any case structuring the project is very crucial aspect and hence a major challenge before the incubator.

c. Sourcing finance for the start-ups: In the current context the innovator and his/her business entity has to rely on own resources primarily. There are research grants available from GOI sources, but if an innovator waits for the grants to be available before the commencement of his/her venture, the venture will be a non-starter. This situation can be salvaged if only there are ample business innovators across the country and they are endowed with adequate funds to support innovators and innovative business ventures.

d. Accelerating the SMEs: Among the SMEs there is a significant percentage struggling to grow up or even to survive. They are deficient in many resources including funds. In the present context they do not get diagnosed for their problems. Many can be rehabilitated with proper care and mentoring while some are beyond redemption. The banking system is not designed for this diagnosis either because they are not equipped or because their primary concern with the NPAs does not permit them to rehabilitate the poorly performing SMEs. This is an area the business incubators



could make significant contribution and lift many of the SMEs from the sub-optimal operations. Today an institutional structure to enable such an acceleration process is conspicuous by its absence.

Conclusion

Mission 'Make-in-India' is a well thought out program, very timely because India is on the threshold of the innovation-driven stage of economic development; it has tremendous potential to take India forward to a \$ 5 trillion or \$ 8 trillion economy. But the challenges to make the mission a reality are enormous, but not insurmountable if worked upon systematically.

End Notes

1. Srinivasan, H C (1989): *Handbook of Development Economics*, Vol II. B V. Elsevier Science Publishers.

2. Aiyar, S A (2015): 'Make in India' and 'Manufacture in India' are two different things. *Times of India*, 31st May

3. Porter, M E (1998): *Competitive Advantage of Nations*. New York. Free Press.

4. 'Maruti Suzuki- Reigning Emperor of Indian Automobile Industry' a case written by Gunjan Malhotra & Soumyadeep Sinharay, Journal of Case Research, Vol.4, No.1, 2013. <http://www.home.ximb.ac.in/~jcr/cases/case01-Jue2013.pdf> Also see BM: *Message of Maruti Suzuki, Economic & Political Weekly, Sameeksha Trust Mumbai Vol.XVII, No.38, page 1524-25.*

5. Talwar, Saurabh (2014): How can the New Government make India a Global Manufacturing hub? CRISIL Young Thought Leader. http://programslive.iimcal.ac.in/sites/programslive.iimcal.ac.in/files/pgpex_3.jpg

6. Papola T S (2012): Structural Changes in the Indian Economy. Emerging Patterns and Implication. *Working Paper No. 2012/02 New Delhi*. Institute for Studies in Industrial Development. <http://sidev.nic.in/pdf/WP1202.pdf>

7. Krishna Kumar (2005): Scooters India Ltd – The Case of Extraordinary Turnaround, Indian Institute of Management, Kozhikode.

8. Essar Gujarat Ltd set up its Sponge Iron plant at Hazira near Surat with second-hand plant imported from Emden, West Germany. In assessing the technical and economic aspects of the plant the company had availed

services of M/s Dastur & Co P Ltd, Kolkata, Voest Alpine Germany and MECON, the public sector metallurgical consultant affiliated to SAIL. The plant was purchased on 'as is where is' from Germany at a price of DM26 million; the company had contracted to incur another DM20.75 million in dismantling, shipping and commissioning the plant at site make the total investment on the plant to DM46.75 million. It also had contracted Larsen & Toubro Ltd in the erection and commissioning of the plant.

9. Arvind Mills Ltd is listed as prominent customer of second-hand/used machinery at the site of Vardhman Trading Corporation.

<http://www.vtctextile.com/>

10. Even today Govt of India allows import of second-hand machinery. For the latest guidelines the reader is directed to the following document.

<http://www.dgft.gov.in/exim/2000/ftp2015-20E.pdf>

11. "...Hardeep Singh Sidhu, a retired maintenance engineer with Swaraj Tractors in Mohali, has been interested in how electrical gadgets are modified and used for unintended purposes. He informs that the washing machine doubling up as a lassi maker became the rage in the late eighties, especially with semi-automatic and locally produced washing machines that came quite cheap. 12. "...It is a bit like Godrej Hair Dye being used to blacken buffaloes in the cattle *mela* held at Sonapur in Bihar every year, where the targeted user of the product is not always the real user."

<http://www.dnaindia.com/blogs/post-fair-and-lovely-kaale-ko-gora-bana-de-1581513>

13. Aiyar, S A (2015): 'Make in India' and 'Manufacture in India' are two different things. *Times of India*, 31st May

14. Jaipur Foot Challenging Convention. A report prepared by Scott Macke, Ruchi Mishra and Ajay Sharma under the supervision of C K Prahlad. The University of Michigan Business School, 2003. <http://www.bus.umich.edu/FacultyResearch/ResearchCenters/ProgramsPartnerships/IT-Champions/JaipurFoot.pdf>

15. Joe Tidd, John Bessant and Keith Pavitt : Aravind eye Clinics. <http://218.248.31.202/librarymain/files/casestudies/AravindEyeClinics.pdf>

16. DNA, 23 October 2015: Raghuram Rajan asks banks to use new technologies to bring down costs. <http://www.dnaindia.com/money/report-raghuram-rajan-asks-banks-to-use-new-technologies-to-bring-down-costs-2137847>

17. One of the newest treatment pathways is the use of cancer immunotherapies as either a monotherapy or, as is most often the case, as a combination treatment with existing chemotherapist or other immunology products. Immunotherapies have work by making your immune system more efficient. By reducing the ability of cancer to hide from the immune system and/or enhancing the search capacity of T-cells to destroy foreign cells, immunotherapies have demonstrated early signs of prolonged progression-free survival and even overall survival in certain instances. <http://www.fool.com/investing/general/2015/10/14/the-name-of-this-relatively-new-cancer-immunothera.aspx> The start-up of Sahajanand Laser Technologies Ltd has been supported by Venture capitalists like GVFL and it



[has ambitious expansion plans.](#)

http://www.moneycontrol.com/news/business/gvfi-investssahajanand-laser-technology_309264.html

18. See (a) Sirkin, Harold L (Feb14,2008): Tata's Nano: An Ingenious Coup. http://www.businessweek.com/globalbiz/content/feb2008/gb20080214_228455.htm And (b) Sirkin, Harold, L, Bhattacharya, Arindam (June1,2007): India Moves Beyond the Back Office., Business Week. http://www.businessweek.com/globalbiz/content/jun2007/gb20070601_51439.htm

19. See <http://blogs.wsj.com/indiarealtime/2014/09/23/how-india-mounted-the-worlds-cheapest-mission-to-mars/>

20. Vijay Govindaran and Chris Temble: Reverse Innovation: Create far from Home, Win Everywhere. www.s4.amazonaws.com/ebps/pdf/reversedinnovationo.pdf

21. Navi Radjou, Jaideep Prabhu and Simone Ahuja (2012): Jugaad Innovation – Think Frugal, Be Flexible, Generate Breakthrough Growth. Jossey Bass (Wiley). SanFrancisco.

22. See (a) Boston Consulting Group(2014): Make in India : Turning Vision into Reality. CII 13th Manufacturing Summit November, 2014; (b)Ernst & Young (2012): India Attractiveness Survey 2012; (c) Gupta, Dr S P (2002): Report of the Committee on India-Vision 2020. Planning Commission, Government of India, New Delhi; (d) OECD (2012): India – Sustaining High and Inclusive Growth. OECD- Better Policies Series. October 2012; (e) Price Water Coopers (2014): Future of India – the winning Leap. <http://www.pwc.in/thewinningleap> and (f) T V Mohandas Pai & Sharad Sharma(2015): Make a Google in India. The EconomicTimes, Bangaluru. 18th February 2015.

23. See (a) PTI. (2008, October 7). *Tatas to set up Nano car project in Sanand, Gujarat*. Retrieved January 4, 2012, from The Economic Times: http://articles.economicstimes.indiatimes.com/2008-10-07/news/27706161_1_nano-car-mother-plant-cheapest-car and (b) Times News Network. (2008, October 4). *Singur not OK, Tata reverses Nano out*. Retrieved January 4, 2012, from The Times of India:

http://articles.timesofindia.indiatimes.com/2008-10-04/india/27896168_1_singur-tata-group-chairman-ratan-tata

24. Nandigram says 'No!' to Dow's Chemical hub <http://www.iacoston.org/india/1207-nandigram-says-no.html>

25. Indian Express, Guntur, 29th Oct 2015. Land acquisition: A new capital city in farmland <http://indianexpress.com/article/india/india-news-india/land-acquisition-a-new-capital-city-in-farmland/>

26. The background of land allotment to ISB is described in three documents (a) Anonymous. (2007, September 1). *How ISB was established at Hyderabad*. Retrieved January 4, 2012, from Blog at WordPress.com: <http://archanaraghuram.wordpress.com/2007/09/01/how-isb-was-established-at-hyderabad/>; (b) Knowledge@Wharton. (2009, July 30). *ISB Founding Dean Pramath Sinha: Over the Years, I Have Become a Student of Leadership*. Retrieved January 4, 2012, from Knowledge@Wharton Network:

<http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4399> and (c) Talgeri, K. N. (2009, May 16). *The McKinsey Way*. Retrieved January 4, 2012, from outlookbusiness.com : The McKinsey Way: <http://business.outlookindia.com/inner.aspx?articleid=2716&editionid=74&catid=1&subcatid=262> The background of land allotment to Infosys campus at Kolkata is described in other set of documents : (d) Banerjee, S. (2009, September 17). *Buddha has his way: 50 acres each for Infosys, Wipro in Rajarhat*. Retrieved January 1, 2012, from The Indian Express Limited:

<http://www.financialexpress.com/news/buddha-has-his-way-50-acres-each-for-infosys-wipro-in-rajarhat/518143/> (e) Infosys Technologies Ltd. (2008, April 24). *Infosys Technologies to set up Campus at Kolkakata*. Retrieved January 4, 2012, from Infosys Limited: <http://www.infosys.com/newsroom/press-releases/Documents/2008/campus-kolkata.pdf> (f) Times News Network. (2006, July 29). *Infosys keen on Kolkata campus*. Retrieved January 4, 2012, from The Economic Times:

http://articles.economicstimes.indiatimes.com/2006-07-29/news/27424889_1_infosys-technologies-debesh-das-kolkata-campus

27. Dan Senor and Saul Singer (2009): Start-up Nation – The Story of Israel's Economic Miracle, Hachette Books, New York.

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