

Indian Telecom Equipment Manufacturing



Current State and Potential Future Opportunities

Context:

Knowledgefaber through a series of articles and reports will try to showcase the Indian telecom equipment manufacturers. Be it home grown active, core infrastructure companies or mobile device players. Knowledgefaber is very optimistic about the success of some of these players and their local manufacturing efforts.

Current State of Indian Telecom Equipment Industry:

In the last decade, India has witnessed an exponential rise in its mobile subscribers. Subscriber base has grown at a CAGR of over 95% from less than 6 million at the end of 2001 to over 750 million at the end of 2010. The growth of Indian telecom market has also enabled various telecom equipment companies to flourish in India. Whether it be passive or active infrastructure in telecom or mobile devices, the growth has been phenomenal. While on the mobile devices side, there are a number of Indian companies such as Micromax, Karbonn Mobiles, Lava, etc that came up in recent years, a few Indian companies such as HFCL, Coral Telecom, Tejas Networks, VMC, etc., had ventured into core telecom space much before the handset companies. These telecom equipment companies offer various Transmission, Access and Core network equipment such as SDH-based multiplexers (STM-1, STM-4, STM-16 & STM-64), Carrier Ethernet solutions, RF & Microwave antennas, Repeaters, Switches, Testing & Measurement equipment, etc.

Initially, most of the Indian core telecom equipment companies operated as resellers for foreign companies. Global players, with an intention to enter the fast growing Indian telecom market partnered with local companies who acted as Indian subsidiaries or local partners to these players. Companies such as Fibcom, Anda Telecom, GOIP Global Services, Tirumala Seven Hills, Savitri Telecom, etc. have all started (and most of them are still continuing as resellers) of SDH-based transmission equipment in India.

Key Growth Drivers:

A decade or so earlier, India was identified as the ideal location for telecom MNC R&D centers with some of the top companies in the industry getting embedded design and software development work done from here. From NSN, Ericsson to Huawei, many global telecom companies used India as an R&D destination through both, captive and/or vendor models. This development also acted as another enabler for the growth of Indian home grown telecom equipment companies. Leveraging their access to increasing availability of skilled professionals (powered by the growth of R&D centers) along with their experience as telecom equipment resellers, Indian telecom equipment companies started developing their own products. A few of these companies such as VMC and Tejas Networks (apart from Indian government owned ITI Limited) have invested in their own manufacturing facilities along with building R&D capabilities. Currently, VMC has five manufacturing plants (in and around Hyderabad) while Tejas has two manufacturing plants (in Bangalore & Niani).

As a part of research for this report, Knowledgefaber team has also visited one of the manufacturing facilities of VMC in Hyderabad.



Description: Automated Pick & Place Component Insertion Line for Using SMT at VMC's Manufacturing Facility at Maheshwaram (Hyderabad)

VMC's current manufacturing capabilities include High End PCB Assembly, Magnetics, Power Supply, CPEs and Transmission Equipment Testing and Assembly. Soon, VMC plans to move from their existing 100,000 sft facility to a bigger 400,000 sft facility and start end-to-end design and manufacturing of components and equipment from PCB onwards.



Description: VMC's Upcoming 75,000 sft Manufacturing Plant at Maheshwaram, Hyderabad

Barrier - Lack of Government Support:

Apart from few companies such as VMC, Tejas Networks, UTL, ITI Limited, VNL, HFCL, Teracom, there haven't been any

significant efforts or investments in telecom equipment manufacturing by Indian companies. One of the key reasons for this is government's lack of support. While the Indian government has offered various incentives such as extended tax holidays, full tax exemptions for exports from STPIs, etc. to facilitate the growth of IT services industry in India, there are no such incentives rolled out for telecom manufacturing companies in India. So far, Indian government has done little to aid the Indian telecom companies other than sporadically imposing import duties on telecom equipment and banning Chinese manufacturers' equipment (citing security concerns).

In comparison, Chinese government has clearly focused on telecom equipment to cater to its domestic and global markets. Chinese equipment manufacturers such as Huawei and ZTE compete with global MNCs, including Alcatel-Lucent, Cisco, Ericsson, Nortel and Siemens. A major factor behind the success of Huawei and ZTE (two of the leading Chinese telecom equipment companies) is the facilitative role played by Chinese government. The Chinese government launched programs like China 863 (the State High-Tech Development Plan) to develop and test new technologies in the country. Government initiatives such as tax breaks and providing loans at nominal interest rates (of approx. 3%) went a long way into ensuring success of these Chinese companies in the International markets. These companies also took advantage of these low cost loans to make huge investments in R&D. Huawei spends up to 10% of its investments for R&D in order to compete in the fast changing telecom environment. Huawei has also received close to \$10million in research funding from Chinese government since 2003. Apart from this government played a key role in ensuring that the equipment contracts are bagged by the Chinese players, thus increasing their topline. Another reason for Chinese manufacturing companies like ZTE and Huawei for being successful is the support provided by Chinese banks like CDB who extend very attractive credit terms to the buyers of products from these companies. For telecom operators (which is a CAPEX intensive business) with long gestation for returns, these credit terms become the drivers even if the equipment from the Chinese in some cases is technically inferior. In India, clearly more support is needed from Government and banks.

Increasing Investor Interest:

Indian government is currently mulling over a proposal to provide cheaper loans to Indian telecom equipment manufacturers and also allotting preferential status to 'Made in India' products in the New Telecom Policy, 2011 (NTP'11), based on recommendations from ongoing TRAI consultations. Indian telecom equipment manufacturing sector is slowly, but surely attracting some investor interest as well. Tejas Networks has attracted \$73 million PE funding from Mayfield funds, Intel Capital and Battery Ventures. They have also raised a further \$24 million from Goldman Sachs and \$20 million from Sandstone Capital in 2008. VMC has raised approximately \$25 million from Fidelity international in 2008. Karbonn mobile is in talks with PE funds Mount Kellie Capital and Accel Partners to raise \$50 million. Karbonn intends to use these funds for setting up a handset manufacturing facility in Bangalore capable of producing 400,000 units per year. While PE firm TA Associates has invested approximately \$45 million in Micromax in late 2009, Sequoia Capital, Madison India and Sandstone Capital have invested in excess of \$ 40 million acquiring 10% stake (in 2nd round funding) in 2010. Micromax plans to invest 35% of its capital infusion in setting up its manufacturing facility.

3G & BWA Rollouts – Opportunities for Indian Core Telecom Equipment Companies:

According to Knowledgefaber research, for the current 3G network rollouts, the carriers are expected to spend in excess of Rs 18,000 crores between 2010 & 2013. Of this, approximately Rs 1,500 to Rs 1,800 crores are expected to be earmarked for SDH-based transmission network equipment. Going forward in 2012-2013, as the BWA networks are rolled out, data optimized services are offered to the consumers and the demand for capacity enhancement increases, carriers are expected to rollout Carrier Ethernet networks and high end transmission elements such as DWDMs.

As for business opportunity for Indian telecom equipment companies is concerned, although most of the 3G network rollout contracts have been awarded by the carriers to MNCs such as NSN, Ericsson, Huawei and ZTE, there still exist potentially two options – 1) To partner with STel, who is yet to award 3G rollout contracts in its three circles and 2) To partner with the MNCs (who already have 3G network rollout contracts from various carriers) as sub-contractors.

As for BWA rollouts are concerned, the Indian telecom equipment companies should initiate their account planning exercise and participate in 'Proof of Concept' rollout, post which they can partner with carriers for full fledged rollouts.

Opportunities for Indian Mobile Handset Companies:

According to Knowledgefaber estimates, about 145 million mobile handsets have been sold in India in 2010. With increasing rural penetration and decreasing replacement cycle, we estimate this number to range between 180 million to 200 million by the year 2014. This is a good opportunity for Indian mobile device players who have been successful in establishing their own brands and catering to Indian market Micromax, Karbonn, Maxx, Videocon, Spice, Lava, etc to invest in their own manufacturing facilities in India. This will not only allow them to customize the devices as per Indian market requirements, but also impact their Time-to-Markets significantly. Device players should first start with low end devices and as they strengthen their R&D capabilities, can get into designing and manufacturing high end devices as well. Captive manufacturing facilities will also allow these players more flexibility to operate in other markets such as SAARC countries, Middle-East, Africa and Lat-Am where the market requirements and conditions are similar to that of India.

Conclusion:

Knowledgefaber believes that with conducive regulatory environment, support from the government and efforts of the industry, India can get a substantial boost in the telecom equipment manufacturing sector, which can lead to the creation of an industry that will compete with the best in the world.

Brief Profile of Indian Telecom Equipment Companies (Illustrative list)

1. **Aishwarya Telecom** - Aishwarya Telecom is Hyderabad based company manufacturing Fiber optic test equipment and Cable fault locators. It has close to 100 employees across four cities in India. Aishwarya's customers include leading public & private telecom operators such as BSNL, MTNL, Airtel, Vodafone, Tata Teleservices, Reliance Communications, etc. Its revenues for 2009-2010 were Rs US\$ 10million

2. **Coral Telecom** – Coral Telecom is a 15 year old Noida-based company with strong presence in Enterprise Switch Market in India and abroad. Their brief product range include IP NGN Systems, Private GSM networks, PBX systems, PD Mux, GSM Gateways, IP Mux, Wireless Point to Point Links, Wireless Access Points, SWAN solutions, etc. They export telecom equipment to 14 countries and have presence in UAE, West & East Africa. Coral has in-house R&D center and also manufactures data and video switching equipment. The company revenues for 2010 are estimated to be in excess of US \$ 100 million.

3. **Fibcom** - It is part of the telecom wing of Suri group and is involved in integrated network solutions, optical transmission products and telecom infrastructural projects. It has a technical collaboration with Tellabs Denmark. It is mainly involved in technology selling and customized solutions for its customers. It has employee strength of about 300 and has annual turnover close to US\$ 55million.

4. **HFCL** – Himachal Futuristic Communications Ltd (HFCL) is a 24 year old New Delhi based telecom equipment company. The company offers wide range of telecom equipment including Carrier Ethernet Access & Metro transport solution, IP Microwave Backhaul, High Capacity Optical Transmission Systems and WiMax BTS & CPEs. The company has two manufacturing plants in Solan (H.P) and Goa that manufacture Optical Transmission Systems (PDH - 8 Mb to 565 Mb, SDH - from STM1 to STM16 & DWDM), Radio Transmission Systems (2, 6, 11 & 18 GHz), Wireless Access Systems (CDMA, DECT & MARR), Wireline Access Systems (DLCs, DSLAM) and wide range of CPEs.

5. **Kavveri Telecom** – Kavveri is a listed Telecom Equipment Manufacturing company which has its own R&D capabilities and manufacturing in Bangalore. Apart from Telecom it also serves defence and space industry with its solutions. Kavveri Telecom has been acquiring North American RF products and Antennas manufacturing companies (4 of them so far). These acquisitions would enable it to launch products in 3G and LTE space soon. It also does contract manufacturing.

6. **Ordyn Technologies** – Ordyn is a 10 year old, Bangalore-based company which designs and manufactures Optical Transport, IP and WiMax equipment. Their products include STM-1, PDH, WiMax base stations and a slew of CPEs. Ordyn was one of the first Indian companies to indigenously develop STM-1 in 2002. They also have strong international presence in ASEAN & Middle East regions and in India, BSNL is one of their leading clients.

7. **Tejas Networks** – Tejas Networks is a Bangalore based company offering various core telecom solutions such as SDH/SONET, Carrier Ethernet, High Capacity Multiplexers (C/DWDMs) and Network Management Systems. Apart from the leading telecom operators such as Bharti, Aircel, Tata Communications, etc, Tejas also works with many PSUs such as Railtel, Gailtel, PGCIL. Tejas has two manufacturing facilities (in Bangalore & Niani) in India. Tejas's revenues were in excess of US \$ 155 million last year

8. **Teracom** – Teracom is a 9 year old Noida based company operating in Power and Telecom infrastructure sectors. In telecom, the company offers wide range of products including With comprehensive strengths in Optical Fiber Cable, Wired & Wireless (based on CDMA 1X, EVDO, 3G, Wimax and TD LTE) broadband CPEs Microwave based Backhaul solutions, Optical Transmission Equipment. Teracom's manufacturing plant based in Goa manufactures Broadband CPEs, Optical Transmission and Microwave equipment. The company's revenues for 2009-10 were in excess of US \$ 175 million

9. **Tirumala Seven Hills** – Tirumala Seven Hills is a telecommunications company based in Kolkata which is into marketing of products of companies such as ACCELINK, AFL telecom, Metrotech, Sierra Wireless and the like. It has over 1000 customers including Indian telecom giants like BSNL, MTNL, Reliance and Bharti group. It specializes in fiber optic industry for telecom companies and has employee strength of close to 250.

10. **Tulip Telecom** – Tulip is a leading data telecom services & IT solutions provider headquartered in New Delhi. It is also India's largest MPLS VPN player and offers innovative IP based infrastructural solutions to its customers. Tulip provides network integration, IT consultancy services and has also worked on various government projects. It has revenues in excess of US \$423 million in 2010. It has close to 2800 employees.

11. **UTL** – United Telecom Ltd. is a Bangalore based ICT solution company with experience in Setting up telecom networks and e- governance networks. In the field of Telecom, UTL has products covering the entire gamut of Switching, Transmission, Access and Terminal equipment. UTL is engaged in Design, Manufacturing, and Software development in the areas of telecommunications.

12. **VNL** – VNL is an innovative telecom company whose main product is the award winning WorldGSM system. This is a solar power GSM system which can be used for remote regions with less than \$2 ARPU. This is very effective for companies which want to increase their rural penetration as OPEX and CAPEX requirement for this system is very low. It is headed by Rajiv Mehrotra of Shyam group.

13. **VMC India** - VMC is a Hyderabad based company that offers end to end equipment solutions for Telecom Operators and ISP, such as ADSL2+ Modems, Interface Converters, WiMAX CPE, STM, and DWDMs, including specialized Power

Conversion equipment. Set up in 1998, VMC has worked with various Indian and global companies such as BSNL, LG, Huawei, NSN, etc. With its first plant set up in 2003, VMC currently has five manufacturing plants in Hyderabad. VMC's manufacturing capabilities include high-end PCB assembly, magnetics and power supplies, product engineering, final assembly and test. In 2008, VMC received funding of ~\$25 million from Fidelity Capital.

Brief Profile of Indian Mobile Handset Companies (Illustrative list)

1. **Karbons** – Karbons Mobiles is a mobile handset manufacturer based in Bangalore and manufactures both GSM and CDMA mobile phones. It was formed as a result of merger between UTL and Jaina Marketing in 2009. Karbons has collaborations with leading semiconductor companies for their handsets and its main differentiator is low pricing. The company also exports its handsets to Africa, South Asia and Middle East countries.
2. **Lava** – Lava is a Uttar Pradesh based mobile handset company. The company also has a manufacturing plant and intends to start end-to-end manufacturing of mobile phones soon. Lava is also planning to set up a full-fledged R&D center in Bangalore soon.
3. **Micromax** – Micromax is a mobile handset manufacturing company located in Gurgaon. It has over 23 national and international offices. It is the 3rd largest mobile handset player in India with revenues in excess of US\$ 360 million. In the last 18 months, Micromax has raised close to US \$ 90 million and is expected to start manufacturing of mobile phones soon.
4. **Spice** – Spice is one of the first Indian mobile device players. It has also launched the first Dual SIM device in India. Spice Mobility is a part of Spice Group, which has multiple interests in the telecom, media and retail space.
5. **Videocon** – Videocon mobiles is a part of Videocon group which has interests in consumer electronics and telecom space. Videocon Mobiles is headquartered in Gurgaon and offers various GSM devices in retail

Sources:

1. Knowledgefaber internal databases, interviews with key industry participants, and internal reports on the sector.
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2. http://voicendata.ciol.com/content/service_provider/110080510.asp
3. http://voicendata.ciol.com/content/vnd100_2010vol-I/110060807.asp
4. <http://www.tele.net.in/trends-a-developments/item/7563-manufacturing-hub-india-emerges-as-a-key-telecom-equipment-market>
5. Company Websites

Indian Companies Not Covered in this Report:

Bharat Electronics (cater to Defense/Govt.), Bhansali Cables & Conductor Pvt Ltd, Birla Ericsson Optical Ltd, BYD Electronics India Pvt Ltd, FASTECH Telecommunications (I) Pvt. Ltd, FCI OEN Connectors Ltd, Fiber Optika, Microqual Coverage Solutions, Paramount Communications Limited, Pramod Telecom Private Ltd, Prasha Technologies Ltd, Prayaag Technologies, Sai Info System Pvt Ltd, SFO Technologies Pvt Ltd, Spring Convergence Services Private Ltd., SPX Communication India Pvt. Ltd, Sumeru Microwave Communications Pvt. Ltd, Synergy Telecom (P) Ltd, Telenet Systems Pvt Ltd, Unleash Networks, Virtela Communications and some fiber optic manufacturing companies.

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