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Parallel growth of Indian economy, healthcare & it with medical technology

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Abstract
The opening up of the Indian economy during the early nineties heralded an era of unprecedented industrial growth in India. The growth rates seen match those of the fastest growing economies. A confident and resurgent Indian Industry is making forays into almost all the sectors of economy. Lately, the huge opportunities for growth within the domestic and global healthcare sector have attracted the attention of Indian industry. The Indian Healthcare system has notched up several significant achievements over the last 50 years particularly in terms of life expectancy, infant mortality rate and success in dealing with various dreaded diseases. However, easy accessibility of quality healthcare and affordability to the citizens at large are key concerns.

Keywords: healthcare, medical technology

1. Introduction
Technology in the last two decades has revolutionized the way healthcare is delivered worldwide. It has greatly aided patients and providers alike by enhancing the quality of delivery, reduction in turnaround time of workflows and thus the overall cost, besides bringing in higher accountability into the system. Advancements in medical technology are playing a positive role in saving lives. The influence of medical technology is all pervasive - its positive impact is not only limited to the upper crust of society but has also helped the poorer lot e.g. reduction in IMR/MMR due to usage of right technology e.g. incubators, warmers, better OT equipments. The Confederation of Indian Industry (CII) being a stakeholder in the growth of the Indian economy has taken some major initiatives in the field of Healthcare and Medical Technology. CII has formed the National Committee on Healthcare and CII Medical Equipment Division which give a sharper focus to the Sector since last several years. CII, through its Medical Equipment Division, works towards the development of the Medical Technology Industry by providing a nodal point of reference for the Industry, providing a forum for dialogue with the customers & government and formation of appropriate regulatory structure. We hope that this report will enable the domestic and the global Medical Technology companies to understand the emerging business opportunities and the healthcare ecosystem in India. Further, this will help major companies to understand the Indian capabilities for making investments in India in this sector.

2. What is medical technology
There are varied definitions of what constitutes 'medical technology'. For the purpose of this report, the term medical technology encompasses a wide range of healthcare products (devices, equipments as well as consumables/ supplies) that are intended by its manufacturer to be used specifically for diagnostic and/or therapeutic purposes. It encompasses any instrument, apparatus, appliance, implant, in vitro reagent, software, material or other article, which is • used, alone or in combination, for the following purposes: – diagnosis, prevention, monitoring, treatment or alleviation of disease – diagnosis, monitoring, treatment, alleviation of or compensation for an injury – investigation, replacement, modification or support of the anatomy or of a physiological process – supporting or sustaining life – control of conception – disinfection of medical devices – providing information for medical or diagnostic purposes by means of in vitro examination of specimens derived from the human body • and, which does not achieve its primary intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its intended function by such means.

3. Medical technology improves health outcomes
Medical technology plays a strategic role in fostering the change of health care delivery towards better health outcomes. According to EUCOMED (the European medical technology industry association) "Medical technology extends and improves life. It alleviates pain, injury and handicap. Its role in healthcare is essential. Incessant medical technology innovation enhances the quality and effectiveness of care. Billions of patients worldwide depend on medical technology at home, at the doctor's, at hospital and in nursing homes. Wheelchairs, pacemakers, orthopedic shoes, spectacles and contact lenses, insulin pens, hip prostheses, condoms, oxygen masks, dental floss, MRI scanners, pregnancy tests, surgical instruments, bandages, syringes, life-support machines: more than 500,000 products (10,000 generic groups) are available today." With the convergence of many scientific and technology breakthroughs, the pace of medical invention is

accelerating, resulting in better clinical outcomes, less Medical technology extends and improves life, alleviates pain, injury and handicap. Incessant medical technology innovation enhances the quality and effectiveness of care. Billions of patients worldwide depend on medical technology at home, at the doctor's, at hospital and in nursing homes. Medical technology innovation Less invasive procedures Better clinical outcomes Shorter recovery time 6 Introduction At the high end, India has world-class doctors, clinics and technologies, and attracts international medical tourists in growing numbers. However, even today, majority of India's population cannot afford anything better than basic healthcare. Medical technology industry in India Riding the growth curve 7 invasive procedures and shorter recovery times, and thus improving overall health of people. Heart disease and its consequence, heart attack, is a good example of how new technology has changed the treatment and prevention of a disease over time. The following exhibit depicts the advancements in medical technology pertaining to cardiac care in the U.S...

4. Need for medical technology in India

There can be no better example than India to illustrate the need for medical technology for improving healthcare delivery. In the second most populous country of the world, the supply of healthcare services falls significantly short of the demand. Existing health care delivery mechanisms are inadequate to meet the ever-growing needs of the Indian population, especially in smaller towns/ rural areas. The limited healthcare facilities available in the country are skewed more in favour of the affluent category of population. At the high end, India has world-class doctors, clinics and technologies, and attracts international medical tourists in growing numbers. However, even today, the majority of India's population cannot afford anything better than the most basic healthcare. Low health insurance coverage (estimated at less than 10% of population) makes matters even worse. Accessibility is restricted by shortage of healthcare facilities and professionals. For every 10,000 Indians, there are 6 doctors while China has 20 doctors for every 10,000 people, Australia has 249, UK has 166 and US has 548. Further, while majority of the population resides in rural areas, doctors and hospitals are largely concentrated in cities. Poor healthcare infrastructure, along with a large population and high poverty levels has resulted in a dismal status of people's health. This is illustrated by the following facts: • of the 536,000 women who died during pregnancy or after childbirth in 2005 globally, India accounted for 117,000 (or 22%). • IMR (Infant Mortality Rate) for India is 58 per 1000 births, which is more than double that of China (23 per 1000 births) and even higher than Bangladesh (54 per 1000 births). • India has the highest burden of communicable diseases in the world, with malaria and tuberculosis among the leading causes of death. • Growing non-communicable diseases (NCDs) - highest number of diabetics in the world. Good quality private healthcare is out of reach for majority of India's people. Government support/ subsidies alone are not enough to cater to the healthcare needs of this segment of the population. There is a need to use medical technology effectively to address the yawning gap between demand and supply of healthcare services in India. Innovative products and business models are needed to make healthcare affordable and accessible to a larger percentage of the population.

5. Market size and structure

A nascent market with double digit growth rates the medical technology market in India was valued at US$2.75 billion* in 2008, a growth of approximately 14% over 2007. The market is estimated to reach US$5 billion* by 2012 with an annual growth rate of nearly 15%. However, this industry has not been well documented in the Indian context, and estimates of industry size and growth vary significantly across different sources. Other estimates of the market size range from US$1.9 billion in 2009 to US$3 billion in 2010. While a wide range of medical products are covered under the medical technology industry, classification of key segments differs widely across the industry. The key segments based on product application are depicted in the chart given below. Majority of the Indian medical technology market is dominated by medical instruments and appliances used in specialties such as ophthalmic, dental and other physiological classes. This segment accounts for 25% of the total market, followed by orthopedic / prosthetic goods segment accounting for 20% of the total market. The 'other' segment includes endoscopy equipment, cardiovascular control equipment and healthcare IT equipment etc. Estimated growth rates for the key market segments during 2008-12 range between 14-20%*, with the 'other' segment witnessing the highest growth. Though not identified as a separate segment in the above pie chart, diagnostic kits represent one of the fastest growing segments of the medical technology industry in India, enjoying an annual average growth rate of over 30%. Competitive market-presence of MNCs as well as domestic firms The Indian medical technology industry is highly competitive and fragmented, with domestic firms primarily manufacturing low technology products such as disposables/ medical supplies, and MNCs primarily importing high end medical equipments. However, in recent years, some domestic firms have expanded local manufacturing operations to produce cost effective, medium end, medical devices. Most MNCs are involved in distribution of medical technology products, though some of them have set up manufacturing operations in India. MNCs seeking to enter the industry typically form joint ventures with local manufacturers, establish subsidiaries or employ local agents to distribute their products. However, increasingly these companies are moving away from the practice of importing through local agents and setting up subsidiaries. According to industry sources, in 2007, over 25 foreign medical device companies received licenses to import medical devices in India through their subsidiaries. High imports High end medical technology products are largely imported into India. Infact, imports constitute about 75% of the Indian medical technology market. Key categories* of items that are imported into India include imaging equipment, pacemakers, orthopedic and prosthetic appliances, breathing and respiration apparatus, and dental equipment. It is interesting to note that while India's medical technology industry is primarily import dependent, at the same time, nearly 60% of what's being manufactured is being exported. In fact some companies derive as much as 75% of their revenue from exports.

However, the exports of high quality, high tech Indian products are very low compared to other developing countries.

6. Key growth drivers

Indian Medical Technology Industry – Key Segments* Others, 15.3% Bandages & other medical supplies, 7.6% X-ray apparatus, 9.5% Electro medical, 10.2% Syringes, needles and catheters, 12.4% Orthopedic/ Prosthetic goods, 20.0% Medical instruments & appliances, 25.1% * Source: Cygnus 10 Key growth drivers The rapid growth of the medical technology industry in India has been driven by the changing medical technology landscape, improving healthcare delivery and financing, and changing patient profile. Changing medical technology landscape faster upgradation of existing technology and global new product innovation Availability of advanced and sophisticated medical technology has created new markets/ applications, which have expanded demand. For instance, new implant materials and improved surgical techniques for joint replacement (e.g. hybrid replacement technique used in hip replacement surgery) are driving growth in the orthopedic segment. Advent of new and reliable diagnostic technology has also forced the medical community to increase their reliance on diagnoses. Further, introduction of latest techniques also lead to rapid obsolescence of existing medical technology, thereby creating demand for replacement/ up gradation of these products. Evolution of India as a medical tourism hub Medical tourism is being promoted by the government and stimulated by the corporate boom in medical care. As a result, India is fast emerging as a medical tourism hub for patients from across the world. International tourists coming to India for medical treatment demand high quality care and world class devices/ equipments. This has also driven private care providers to upgrade their medical technology infrastructure. Growing awareness among providers and consumers on advancements in medical technology The Indian consumer, especially in the urban areas, is increasingly becoming more aware about latest medical technologies available in the market, and consequently demanding the same. At the same time, awareness among providers is also increasing due to training and education workshops/ seminars etc. being conducted by industry members. This has driven up demand for new medical technologies. Improving healthcare delivery and financing Increasing competition with the advent of large private providers Industry estimates suggest that India will need as many as 1.75 million additional beds by 2025, and the public sector is expected to contribute only 15–20% to this Key Growth Drivers for Medical Technology Industry in India Changing Medical Technology Landscape Faster up gradation of existing technology and global new product innovation Evolution of India as a medical tourism hub leading to demand for world class equipments Growing awareness amongst providers & consumers on advancements in medical technology Improving Healthcare Delivery & Financing Increasing competition with the advent of large private sector healthcare providers Increasing trend of seeking accreditation leading to rise in technology investments Rising health insurance leading to increased coverage of high cost treatment Changing Patient Profile Increased life expectancy and aging population Increasing incidence of lifestyle / non communicable diseases Rising purchasing power / disposable income Medical technology industry in India Riding the growth curve | 11 investment. Several private providers are entering the healthcare delivery space to cater to this huge additional demand. For instance, the Medanta group has established the Medicity in Gurgaon. The Sahara group plans to set up a 1,500-bed multi super-specialty, tertiary care hospital at Aamby Valley City, and some more multi-specialty hospitals across the country. International healthcare providers, such as Malaysia based Columbia Asia, are also entering India. Entry of new players has made the private healthcare space extremely competitive. As a result, demand for medical technology is coming not just from new entrants, but also from existing providers such as Apollo Hospitals, Fortis Healthcare, and Max India who are upgrading infrastructure and building new hospitals equipped to Western standards to compete effectively in the market. Increasing trend of seeking accreditation Private care providers in India are increasingly seeking accreditation of hospitals to cater to the booming demand for quality healthcare and growth of medical tourism. This trend is further accelerated by expanding insurance penetration, and insurers requiring accreditation by hospitals. These factors have resulted in up gradation of medical technology by hospitals to comply with the accreditation requirements. Rising health insurance Growth in health insurance in the country has led to increased coverage of high cost medical procedures, enabling a larger part of the population to demand quality healthcare. This in turn has driven up demand for medical technology. Changing patient profile: Increased life expectancy and ageing population Higher standards of living and technological advances in medicine have led to a sharp increase in life expectancy at birth from 58.2 years in 1990 to 63.7 years in 2008. As a consequence, longer-lived individuals will pose demands for increased aggregate healthcare services over a longer period of time. Additionally, the proportion of aged population is increasing, creating upward pressure on demand for healthcare. It is expected that the population above 65 years will increase from 5% of the population in 2005 to 15% in 2030. Rising purchasing power/ disposable income a booming economy has resulted in an increase in personal disposable income and overall standard of living. India's per capita income doubled during 2000- 2008, and the share of healthcare expenditure in household consumption has increased. As a result, a larger number of people are now able to afford better quality of healthcare services. An increasingly affluent population in major cities is driving up demand for latest and advanced medical technologies. Increasing incidence of lifestyle/ non-communicable diseases Non-communicable diseases (NCDs) have emerged as a major public health problem in India. Aging population, sedentary lifestyle, high stress levels etc. has led to an increase in lifestyle/ non-communicable diseases in India, such as diabetes (India has the highest number of diabetics in the world), cancer, cardiovascular diseases etc. The steep increase in non-communicable/ lifestyle diseases is driving demand in some key segments of the medical technology industry. For example, a sedentary lifestyle, characterized by a lack of physical exercise, has led to a high incidence of back pain and joint afflictions being recorded in India, driving demand for

spinal implants, joint implants and associated products. Similarly, rise in the number of cancer cases is driving demand for cancer diagnostic and treatment equipment.

7. Conclusion

Indian medical technology sector is growing but the per capita spend of US$2 is significantly lower than not just the developed countries but also the other emerging economies. Demand in India is predominantly driven from the major cities and penetration in smaller cities/town/rural areas has remained low due to lack of the 4 A's (Affordability, Accessibility, Awareness and Availability)

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