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Healthcare Pulse

Medical Devices: India Insight 2013

About this Issue

This quarterly newsletter from Grant Thornton-India, the first in a series of newsletters on the healthcare segment in India, focuses on the Indian medical devices industry. Giving an overview of the sector, the newsletter highlights new trends and developments in terms of new entrants, government regulations and technological innovations by key players. It further highlights some of the expansion activities of companies including mergers, acquisitions and alliances.

The next two issues will cover the Healthcare Delivery space (including speciality hospitals) and the Pharmaceuticals and Biotech space.

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Foreword

For a long time now, India has been recognised as a major outsourcing hub of the world. Companies set up in various parts of the globe look to India as a sourcing hub for competitive pricing (driven largely by manpower costs) and its large pool of skilled English-speaking professionals.

The healthcare delivery sector in India is also attracting an increasing number of people from several parts of the world for its affordable and high quality healthcare services. In India, the cost of certain surgeries can be one tenth of what it costs in western countries such as the US. For example, data from the US News and World Report reflected that coronary artery bypass surgery, which range from US$70,000-US$133,000 in the US, is offered at US$7,000 in India.

Considering this, it is ironic that a country which attracts patients from around the globe, fails to sufficiently cater to its own medical needs. Lower penetration in villages–over 70% of India's population lives in these areas–poor infrastructure and accessibility, and lack of awareness may be reasons for the same.

With rising disposable incomes in India, there is also a higher incidence of lifestyle-related health problems such as heart disease, obesity, stress and hypertension, to name a few.

The increasing demand for healthcare services is naturally driving growth in the medical devices segment too.

Overall, the market for healthcare services is growing significantly both in urban and semi-urban areas of the country, with rural India remaining under-served, and therefore presenting a significant opportunity in the future.

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"While healthcare services are growing, and are likely to continue their growth path in the future too, a key constraint to the penetration of 'affordable' healthcare in India has been the high cost of medical equipment and several medical devices, which are generally imported."

1 Market Size and Segmentation

Market Size and Segmentation

According to Section 3 (b) (iv) of the Drug and Cosmetic Act, the term "medical devices" refers to any instrument, apparatus, implement, machine, appliance, implant, in vitro reagent or calibrator, software, material or other similar or related article, which:

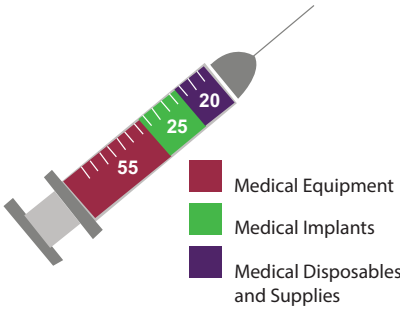
- is intended by the manufacturer to be used alone or in combination for human beings for one or more specific purposes of diagnosis, prevention, monitoring, treatment or alleviation of disease
- does not achieve its primary intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its intended function by such means.

According to Cygnus Business Consulting and Research, the medical devices and equipment market in India was pegged at US$3.6 billion in 2010, and is expected to grow at a CAGR of 15.5% to touch US$6.41 billion by 2014.

India's medical device market is currently the fourth largest market in Asia with 700 medical device makers, and ranks among the world's top 20, according to data from the India Semiconductor Association.

The constituents and segmentation of the medical devices segment varies

Medical Devices Market in India (in %)



from one organisation to the other. As per the segmentation by Cygnus, the medical equipment segment, at 55%, largely dominates the medical devices market in India. This segment, which stood at US$1.98 billion in 2010, is expected to touch US$3.5 billion in 2014. The second largest segment under medical devices, consisting of 25% of the market, is of medical implants. It is followed by medical disposables such as syringes, needles and catheters and medical supplies such as bandages which constitute a 20% share. By 2014, the disposables segment, which was estimated at US$720 million in 2010, is seen reaching US $1.36 billion.

While local manufactures cater to the market of medical suppliesand disposables, the high-end and expensive medical equipment is largely imported.

When it comes to areas requiring higher technological sophistication, there are a limited number of domestic players, and the sector is dominated by multinationals.

While healthcare services are growing, and are likely to continue their growth path in the future too, a key constraint to the penetration of 'affordable' healthcare in India has been the high cost of medical equipment and several medical devices, which are generally imported. To meet the escalating need for affordable healthcare, it is imperative that India significantly increases the proportion of medical equipment and medical devices that are manufactured locally in order to reduce its dependence on imports.

According to a FICCI report, imports account for 80% of the Indian medical technology market. While several domestic players are catering to the demand for low to medium-end medical consumables and supplies, there is a fair degree of trading involved in this segment.
When it comes to areas requiring higher technological sophistication, there are a limited number of domestic players, and the sector is dominated by multinationals.

2 Trends

Recent Industry Trends

Imports constitute a large portion of the Indian medical devices sector. However, we are now witnessing the emergence of some domestic players who are focussing on exports in product segments such as surgical disposables, dental and ophthalmic instruments, laboratory equipment etc. These companies are giving stiff competition to the other players in India and several markets around the world.

According to a report published in Business Standard, SME medical devices manufacturers in Gujarat are gearing up to increase their shipments to some European nations that present opportunities for polymer-based medical devices. The report states that there are roughly 200 medical device manufacturers in Gujarat, about 25-30% of whose net production is exported.

Multinational corporations have also been setting up manufacturing units in India to address local demand as well as use the facilities as sourcing hubs. The likes of Johnson & Johnson have been operating manufacturing facilities in India for their medical devices division for several years now.

Some international players who have set up or acquired plants in the recent past in India include:

- Nipro Corporation's artificial kidney and dialysis product manufacturing facility at Shirwal, near Pune in 2012.
- GE Healthcare's facility in Bangalore to refurbish medical equipment in 2009
- Hollister's commissioning of a manufacturing facility for healthcare products in Haryana in 2009
- B-Braun's acquisition of a controlling stake in Hyderabad-based medical devices manufacturer Oyster Medisafe in 2011.

In addition to large cities such as Bangalore, Hyderabad and Pune, cities like Faridabad, despite infrastructural drawbacks, are becoming hubs for medical device manufacturers. Faridabad's proximity to the capital city of New Delhi and access to a skilled workforce are likely reasons for its rapid development. One of India's largest medical consumables companies, Hindustan Syringes and Medical Devices (HMD),which has witnessed a consistent 15% year on year growth over the last several years, has six small and medium-sized medical device manufacturing units in Faridabad and Ballabgarh. In all, some 25 device manufacturers have facilities in Faridabad.

With the focus on affordable healthcare, several healthcare operators are opting for refurbished medical equipment. Refurbished equipment that is repaired, tested and checked to ensure that they meet the Original Equipment Manufacturer (OEM) specifications, are available in the market. New equipment is usually expensive and unaffordable for several healthcare opraters, whereas refurbished equipments may offer the similar quality of service at an affordable price. Several distributors offer full warranty and provide after sales service, however the regulatory framework around such refurbished equipment is still somewhat unclear.

Strategic Updates

From new products to new manufacturing plants, the Indian medical devices space is witnessing consistent growth. Here is a look at some of the recent important updates on the sector.

ConvaTec, a leading developer of medical technologies, is a recent entrant to the Indian medical device space. The New Jersey-headquartered company has entered India to market and distribute a range of medical products such as advanced wound dressings to treat burns, diabetic foot ulcers, pressure ulcers, and venous

While imports constitute a large portion of the Indian medical devices segment, exports of devices from the country are also picking up. International players are making a foray into the segment by setting up various facilities across the country.

Recent Industry Trends

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leg ulcers. ConvaTec will also provide products to patients with an ostomy following surgery for colorectal cancer or inflammatory bowel disease.

While new players are entering the market, the existing ones are not far behind in expansion activities.

A number of hospitals are setting up operations in Tier II and Tier III towns of India to bridge the demand-supply gap there. To cater to the rising demand for devices at affordable prices from such healthcare providers, Philips Healthcare plans to launch a number of products tailored to the local market at affordable prices. Philips Electronics started operations at its first Greenfield manufacturing facility for imaging systems in India at Chakan near the city of Pune in the second half of 2012. The facility, called The Philips Development and Manufacturing Centre, will focus on producing diagnostic and interventional imaging solutions. The first products to be rolled out are diagnostic X-ray systems and the Allura FC – Philips' first catheterisation lab developed in India, which is used for the diagnosis and minimally-invasive treatment of cardiovascular disease. The Dutch company is also planning to expand its global R&D centre, Philips Innovation Campus, in Bangalore. It will focus on healthcare and development of localised products for India.

After establishing a presence in various parts of the country, Olympus, the producer of cameras, audio, medical, surgical, scientific and industrial equipment, is planning to expand in locations such as Vijaywada, Patna and Nagpur. Currently, the company has a branch office in Nagpur and collection centres in Patna and Vijaywada. Apart from creating the camera that helped healthcare professionals look inside a patient's body to diagnose and treat an ailment, the company has also been associated with conducting training activities for nurses and other professionals on the usage of their technology in accordance with the varying demands of healthcare.

In July 2012, Carl Zeiss India opened its new campus and production facility in Electronics City, Bangalore. The company is associated with semiconductor manufacturing technology, industrial metrology, microscopy, medical technology, vision care and consumer optics/ optronics. The facility at Bangalore will also have the new prescription lens manufacturing facility, a high-tech laboratory arrangement in line with the global standards of Carl Zeiss.

Recent Industry Trends

Companies are also constantly upgrading their devices and increasing their product offerings to address a widening range of health problems in the most effective yet hassle-free way possible. In a recent initiative, Hewlett Packard arranged for a mobile and static Virtual Palliative Care solution for Pallium India, a Thiruvananthapuram based charitable trust. The solution will link doctors with patients via information and communications technology. Of the two studios that have been set up, one is located at Karunya Vishranthi Bhavan at Kattela, a destitute home operated by the Malankara Orthodox Church in Trivandrum. It has essential digital healthcare and diagnostic equipments such as digital stethoscopes and digital ECGs to facilitate patient testing.

Separately, the company, along with the Council of Scientific & Industrial Research (CSIR), introduced a cloud-enabled eHealth centre in Delhi in 2012. The centre is installed in unused shipping containers, which can be taken to even the remote areas of the country. It is equipped with diagnostic equipment, a tele-medicine studio, a laboratory and a pharmacy.

As growth in the medical devices segment gains traction, competition is bound to increase. With an aim to provide quality medical devices to healthcare providers at affordable prices, various companies are launching an array of products in this rapidly expanding space. Some of the recent launches include:

- Siemens Healthcare launched the Acuson X700 ultrasound system in 2012. The new technology provides advanced image quality across a range of clinical applications. Among other features, the device is powered with a new, single-solution, 50-millimeter aperturelinear array transducer for superficial and deep imaging.

- International medical device company St. Jude Medical launched the Ellipse implantable cardioverter defibrillator (ICD) in India in 2012. This device is used in the treatment of ventricular tachycardia or ventricular fibrillation, or unusually quick and potentially fatal heart beats, that could cause a sudden cardiac death.
- Schiller India, one of the leading players in the medical diagnostics

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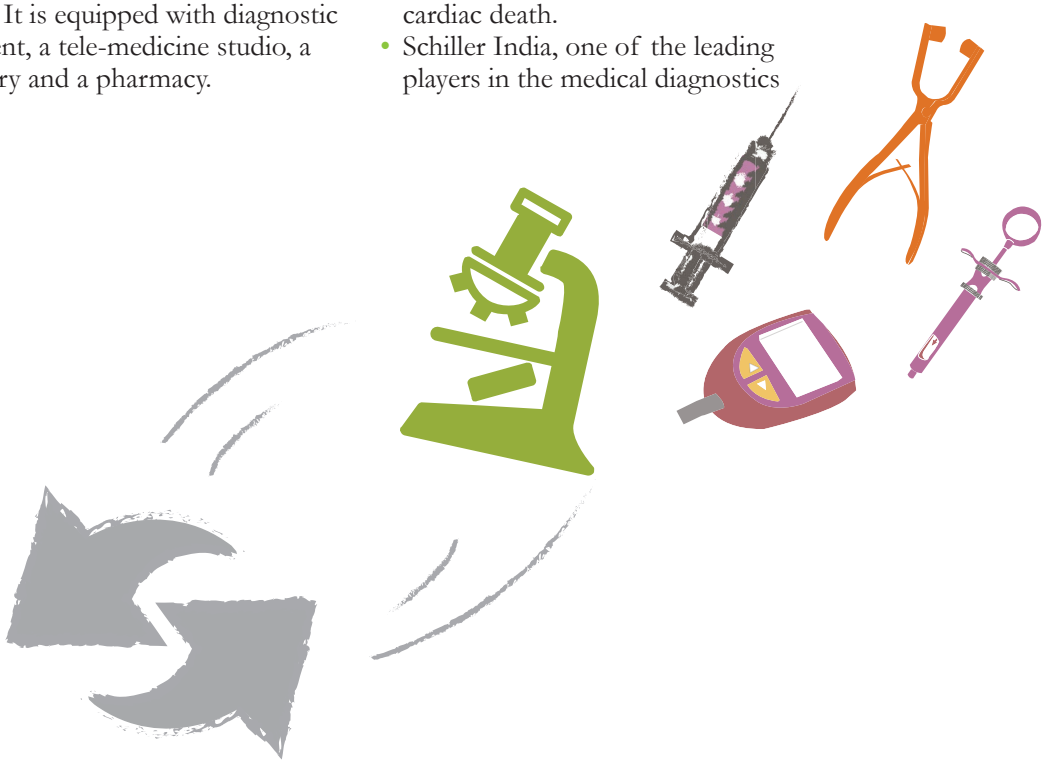
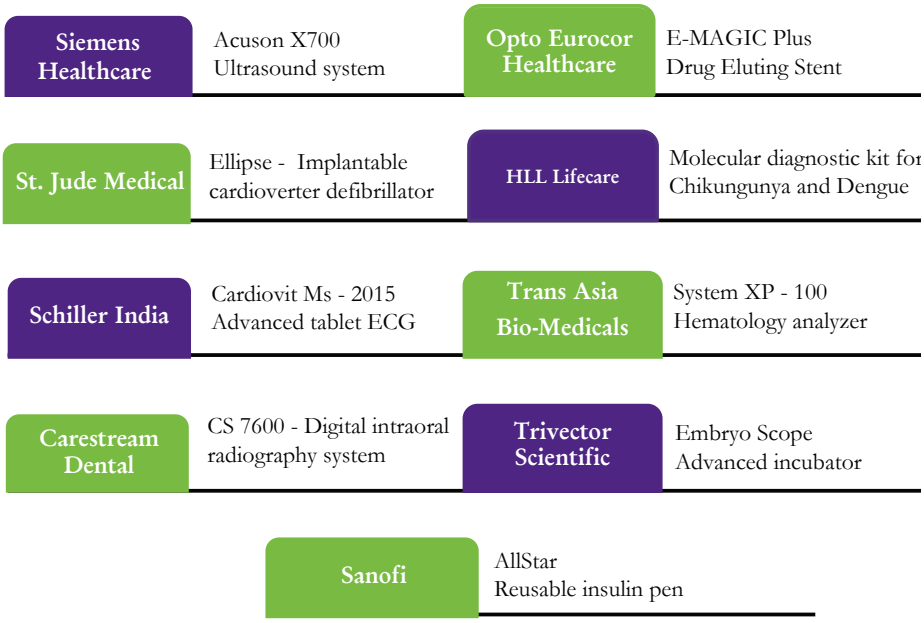


Recent Industry Trends



space has launched an advanced tablet ECG in 2012 called CARDIOVIT MS-2015. The 12 lead high-end ECG system will be used to scan high risk patients to diagnose cardiac abnormalities, acute myocardial ischemia and infarctions.

- Carestream Dental introduced CS 7600, its newest digital intraoral radiography system in 2012. The system uses Scan & Go technology that uses Smart Plates to prevent plate mix-up and lower operation time. Earlier in the same year, the company launched the CS 1200 intraoral camera. The device boasts of providing the highest image quality in its class at an economical rate, and enables convenient incorporation into existing workflows.

- Opto Eurocor Healthcare Limited, a unit of Opto Circuits, launched E-MAGIC Plus, its first Sirolimus Drug Eluting Stent (DES) in 2012, after it received the license to sell and market the product in India. The stent discharges an anti-rejection drug, Sirolimus, into the arterial wall, which aids in controlling excessive growth of cells and allows the healing of the artery. The company now offers DES products with a choice of two drug coatings, Sirolimus and Paclitaxel.

- HLL Lifecare Limited, in association with the Rajiv Gandhi Centre for Biotechnology, launched a multiplex molecular diagnostic kit for Chikungunya and Dengue in 2012 with an aim to make the fever diagnosis more affordable for individuals. With this kit, the company has forayed into the molecular diagnostics field.

- Transasia Bio-Medicals Limited introduced Sysmex XP – 100, a new automated 3-part differential hematology analyser in 2012. The device will be used to screen and diagnose conditions such as thalassemia, thrombocytopenia, anemia, other hematological disorders, inflammation and malignancies.

- Trivector Scientific launched EmbryoScope, an advanced incubator in 2012. With this device, a minute-by-minute observation of the embryo can be conducted through an image capture system from the time when in vitro fertilisation takes place to when it is transferred into the uterus. The device eliminates the need to remove the embryo from the incubator to assess its development, thereby improving the selection criteria and, in turn, pregnancy rates.

- Parisian drug-maker Sanofi launched a low cost, reusable insulin pen AllStar in 2012 to cater to the 61 million diabetes patients in India. The country has the second highest incidence of the disease and is behind only to China. The pen is priced at Rs 650. The device is being locally manufactured at a plant in Gujarat. Prior to the launch, such devices were imported, resulting in high prices.

Technology Innovations

Advancement in technology and path-breaking inventions in recent times have enabled companies to start developing sophisticated medical equipments and devices that were once thought of as science fiction. The convergence of several technological and scientific breakthroughs in medical devices has accelerated the pace of innovation in the industry, resulting in improved outcomes with less-complicated procedures and quicker recovery. Mentioned below are some examples of technology innovations and improvements made in the medical device space in India recently.

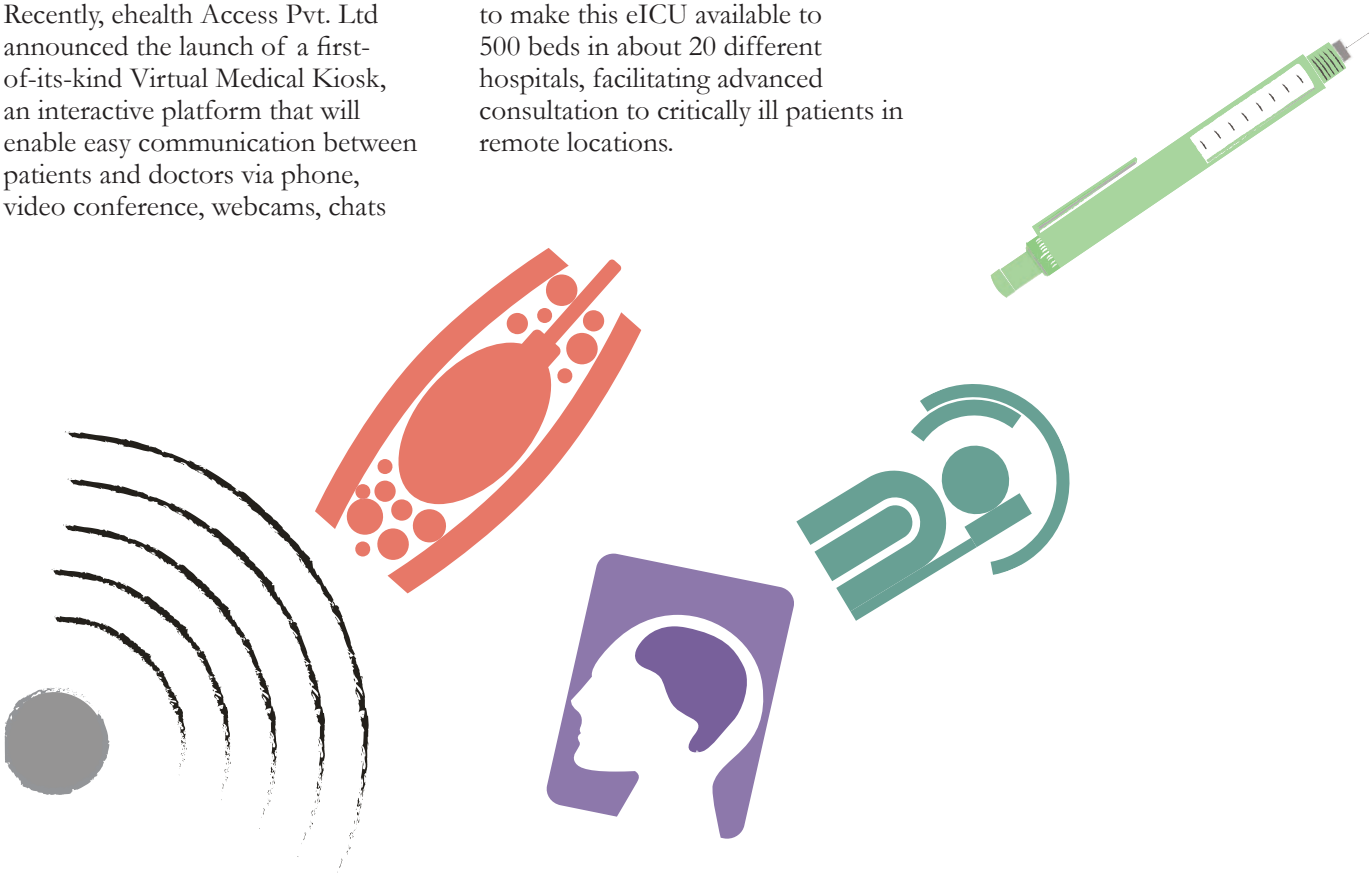
Connecting lives using online technologies

In this digital era, distance is not a limitation. Technology holds the capability to eliminate the need to move physically in order to provide treatment or administer processes by virtually connecting the stakeholders.

Recently, ehealth Access Pvt. Ltd announced the launch of a first-of-its-kind Virtual Medical Kiosk, an interactive platform that will enable easy communication between patients and doctors via phone, video conference, webcams, chats and messages. This kiosk comes with in-built audio-video capabilities, touch screen interface, diagnostic equipments, scanners and medical management software to record personal health data, facilitating real-time diagnosis of patients and consultation with professionals around the world at any time of the day. The development of this device is a good example of how innovative technology can be leveraged to penetrate a wider mass of population in a country where many regions still lack basic medical facilities.

Technology can also be used to monitor changes and improvements in patients' health. Fortis Healthcare, in association with GE Healthcare, has introduced an electronic Intensive Care Unit (eICU) facility that enables monitoring patients in its ICU 24x7. At present, this facility covers about 81 ICU beds spread across the country. Going forward, it plans to make this eICU available to 500 beds in about 20 different hospitals, facilitating advanced consultation to critically ill patients in remote locations.

Innovative technologies hold the power to address global health concerns and provide easy access to medical facilities in a cost-effective manner.



Technology Innovations

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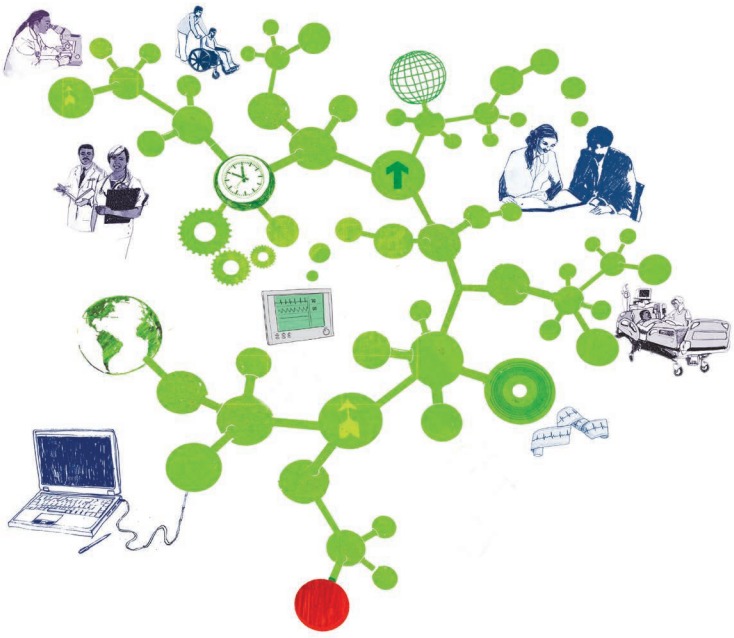
Interactive System Technologies has developed an innovative healthcare web application called Navayush.com that helps patients check the availability of any medicine at any location in the country. This free-for-all application ensures access to lifesaving drugs at locations where they are scarce, and reduces wastage.

Combating cancer through technology

Until recently, technological development had made little impact on early detection and prevention of cancer. However, continuous efforts made in the medical technology ecosystem are slowly paving way for innovation in this area as well.

Optra Systems, a software engineering company in Pune, has developed a revolutionary prototype of an ultramodern scanner that can make cancer diagnosis affordable and speedy. Named 'Optra Scan', this indigenous device is set to replace the 150-year old invention of Optical Microscope, as its updated version would be loaded with the latest IT solutions, making it a complete cancer diagnostic system for prostate cancer, renal cancer and breast cancer.



While innovation in early detection of cancer is a major step in the right direction, attempts are constantly made to cure this ailment once it is detected. HealthCare Global Enterprises Ltd recently became the first hospital in India to introduce Flattening Free Filter (FFF) Mode technology to treat patients diagnosed with prostate cancer. This technology is expected to bring down the amount of dosage considerably (2400 beam to 600), thereby benefiting the patients by minimising the effect of movement during treatment and respiration.

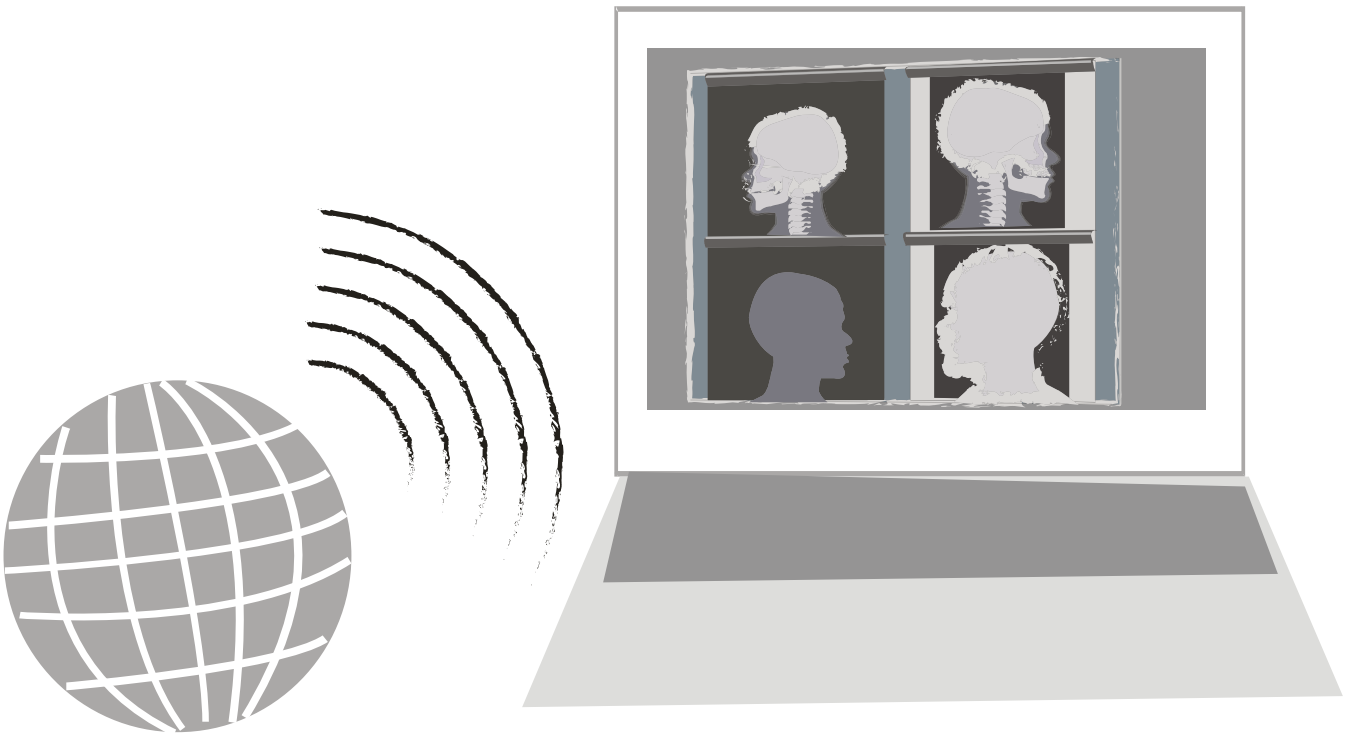
Another innovation in this area is MAXIO, an integrated planning, navigation and robotic targeting system for CT-guided tumor ablation, developed by Perfint Healthcare Corporation. This system helps treat cancer by freezing the tumor through insertion of a needle in the affected area.

Panacea Medical Technologies, a Bangalore-based provider of advanced hybrid radiotherapy equipment, markets its products at a cost much lower than that of its MNC counterparts. Its products are installed at many oncology hospitals in developing countries including india, enabling affordable cancer care in these markets.

Technology to increase affordability and performance

In technology intensive segments like medical devices, the key to success lies in constant development and introduction of new products that enhance the performance of existing methods and help explore new therapeutic areas. In recent times, many medical devices were launched that are far more efficient and cost-effective than its predecessors. IIT Kharagpur recently introduced a new software that is supposed to help in early detection of diabetic retinopathy, a by-product of diabetes that can lead to blindness.

Technology Innovations



This disease is common among patients suffering from diabetes for more than 10 years. This pioneering software analyses retina images to detect diabetic retinopathy and provide levels of seriousness ranging from low to high.

Another institution recently announced success in improving efficiency of CT scanners by introducing a revolutionary heart-scanning technology that will help physicians provide better treatment to patients. Mahajan Imaging has developed India's first dual-energy CT scanner with cardiac spectral imaging capabilities titled 'Discovery CT750-HD FREEdom Edition'. This device provides a three-pronged solution to the limitations of the traditional scanner: Motion FREEdom that uses intelligent motion correction through SnapShot Freeze; Calcium FREEdom for improved coronary visualisation via Gemstone Spectral Imaging Cardiac; and lastly, Horizon FREE opportunities. The scanner enables performing myocardial perfusion imaging to check the status of heart tissues, thereby determining whether or not a stent or a bypass surgery will help the patient.

Abott launched a unique device—Bioresorbable Vascular Scaffold (BVS)—that is expected to significantly improve the method of treatment of Coronary Artery Disease (CAD). Instead of treating the artery with a metallic stent that remains in the body for a lifetime, this device made of polylactide will dissolve into the body in due course, leaving behind a healthy artery that is expected to work in a natural manner.

A new C-Arm developed and launched by Prognosys Medical Systems is another good example of technology innovation in the medical device space. While there are several image intensifiers available in the market today, the latest C-Arm developed by Prognosys is expected to significantly improve the quality of the image, enabling better outcomes during surgical procedures. This new device is also likely to reduce radiation levels during the procedure.

Forus Healthcare, an ophthalmic equipment manufacturer, recently developed an innovative, low-cost, portable pre-screening ophthalmic device called 3nethra. This device complements the services of a cataract specialist, a diabetic retinopathy specialist and a glaucoma specialist into remote geographies through the process of pre-screening. 3nethra has won various awards including DST – Lockheed Martin and Samsung Innovation award.

Such technological innovations in medical devices will radically transform the healthcare industry in the coming years, introducing devices that will improve existing methods and transform the way treatments are administered. More importantly, they should provide solutions to most medical challenges known to the human race.

3 Recent Industry Developments

New Regulations

Despite the size of the market and its importance to the healthcare industry, there is no concrete regulatory framework exclusively for the medical device segment. The Central Drugs Standard Control Organisation (CDSCO) is mainly responsible for governing the sector. Within the CDSCO, the Drug Controller General of India (DCGI) is responsible for the regulation of medical devices.

While the absence of a dedicated regulating body for the medical devices industry is a cause of concern, the government has taken some steps in the right direction to address this. According to a FICCI report, two important regulatory initiatives are being taken in India, although there are no specific timelines associated with their materialisation:

- acknowledging the medical devices industry as a separate segment
- forming a regulatory body that is responsible for the standards, accreditations, etc. for facilitating healthcare.

Some of the other initiatives being implemented are:

- **CDSCO looking to transform the regulatory system**
  The CDSCO is looking to transform the legal and regulatory structure. The plan includes improving safety of patients and providing efficient regulatory services. The step was taken after an analysis of the report submitted by the Parliamentary Standing Committee on health and family welfare in May 2012.

- **FIT India and BD India join hands to launch guidelines for insulin injections**
  a first in India, the Forum for Injection Techniques (FIT India) and Becton Dickinson India (BD India) together launched clinical recommendations for best practices in insulin injection techniques for diabetic patients and healthcare professionals in November 2012. Among the recommendations are the method of administration, compliance, dosing, selection of injection area, depth of the injection, time lapse before withdrawing the needle and misconceptions about the therapy. Although the medical devices industry is governed by CDSCO, there is a perceived lack of clarity in the minds of entrepreneurs in the industry, unlike the pharmacentric manufacturing sector.

The development of an appropriate regulatory framework, exclusively for the medical devices segment, is critical to ensuring sustainable growth and building domestic competitiveness in the segment.

Deal Street

While India continues to largely depend on imports of high-end medical devices from established MNCs, local manufacturing of products is also gaining pace. Partnerships, M&A and Private Equity investments should accelerate this trend.

While India continues to largely depend on imports of high-end medical devices from established MNCs, local manufacturing of products is also gaining pace. A lot of the MNCs are engaged in the distribution of medical devices made in other parts of the world, but some have started setting up manufacturing facilities in India. These international players form their wholly owned subsidiaries in India, tie-up with/ acquire local companies, or enter into distribution arrangements with local players to facilitate the process. Some Indian companies have also raised funds from private equity players to provide an impetus to their expansion plans in India and worldwide.

Partnerships and Alliances (year 2012)

Partnership	Purpose
Defiance Technologies, provider of engineering and IT services to the automobile and defence sectors, enters the healthcare space and partners with a US-based R&D player.	Re-designing products for the Indian market in a pilot project.
Trivitron Healthcare partners with Italy's Diasorin Group.	Making a foray into the immunodiagnostic market in India. Post the partnership, Trivitron aims to become a leader in the immunodiagnostic market over the next three years.
Trivitron Healthcare partners with Johari Digital Healthcare.	Market physiotherapy products and point-of-care diagnostic products for global markets, and obtain patents in the field of physiotherapy.
US-based Christie Medical Holdings joins hands with Alliance Transfusion.	Distribution of VeinViewer vascular imaging devices. VeinViewer is a hand-held vein illuminator that uses technologies such as near-infrared light to project a real-time digital vein image directly onto the surface of the skin. Benefits include a higher incidence of successful vascular access and pain reduction.
Piramal Imaging SA (Piramal) and IBA Molecular collaborate.	IBA Molecular will manufacture and distribute Piramal's new diagnostic imaging agent 18F-Florbetaben in Europe and the US. A radiopharmaceutical, 18F-Florbetaben is used with positron emission tomography (PET) for detection of characteristics associated with Alzheimer's disease and other neurological ailments.
Bombay Hospital's department of Nuclear Medicine and the Radiopharmaceuticals Division of Bhabha Atomic Research Centre (BARC) tie up.	Development of two new scanning procedures, DAT Scan and HYNIC-TOC Scan, using indigenously produced radiopharmaceuticals. The techniques are used for imaging brain diseases and cancer. Prior to this, radiopharmaceuticals needed to be imported, a process that was time-consuming and expensive.

Deal Street

Mergers and Acquisitions (year 2012)

Mergers and Acquisitions	Purpose/Advantage
Chennai's Trivitron Healthcare acquires 100% stake in Finland-based Ani Labsystems. Trivitron will acquire Ani Biotech, Ani Labsystems, Biopoint and K3, and the entity will be known as Labsystems Diagnostics OY - A Trivitron Group Company.	Ani Labsystems is a leading player in in vitro diagnostic, and is well established in neonatal screening and cardiac bio markers screening. Through this deal, Trivitron will gain access into point-of-care diagnostics, immuno diagnostics and molecular diagnostics, and will be able to manufacture a variety of diagnostics kits across the in vitro diagnostics field.
Skanray Healthcare acquires L&T's medical equipment business L&T Medical & Systems.	L&T has a wide range of products including patient-monitoring systems such as ECG, pulse oximetry, invasive BP, capnography and anaesthesia gas monitor. Meanwhile, Skanray Healthcare specialises in high frequency X-ray imaging systems, critical care devices and primary healthcare and telemedicine-compatible devices.
The country's leader in in vitro diagnostics, Transasia Bio-Medicals, acquires France-based Maxmat S.A. The acquisition was made through Transasia's Czech subsidiary Erba Lachema.	Maxmat specialises in conception, design, development and manufacturing of automated analysers and reagents in the field of Clinical Chemistry, Hemostasis and Immunology. Transasia aims to benefit through this acquisition by using the company's capabilities and know-how in the field of design and development of analysers, which perform multiple functions in a laboratory spanning different segments of biochemistry, Hemostasis and Immunology.
Transasia Bio-Medicals acquires two US companies, Drew Scientific and JAS Diagnostics from Escalon Medical. The acquisitions were made through Erba Diagnostics, Transasia's US unit.	Drew Scientific, apart from offering instruments and consumables for laboratories, also provides the reagent and other materials required for the operation of the instruments. JAS Diagnostics produces clinical chemistry reagents and supplies those it has developed indigenously. It also provides solutions in different formats of systems packs, liquid reagents and powder reagents. The two firms were integrated by Escalon Medical to become Escalon Clinical Diagnostics. This acquisition will help Transasia enter the healthcare professional's segment of clinical chemistry, haematology instruments and reagents in North America.
Piramal Healthcare acquires the molecular imaging research and development portfolio of Germany's Bayer Pharma AG.	The portfolio holds the rights to florbetaben, a PET tracer for the detection of beta-Amyloid plaque deposition in the brain, a key link to the symptoms of Alzheimer's. Once the deposition is detected, an earlier diagnosis of the ailment and specific treatment for the same is possible.

Recent Private Equity/Venture Capital Transactions (year 2012)

Transaction	Activity for which funds were deployed
Trivitron Healthcare raises $75 million/Rs 400 crore from Fidelity Growth Partners India.	Trivitron plans to use the funds to have a strong global presence in the imaging and lab diagnostics segments through organic and inorganic growth by way of buyouts of companies and technologies in Europe and the US. The funds will also aid expansion at Trivitron's Medical Technology Park and boost distribution in South East Asia, Middle East and Africa.
Sutures India raises about Rs 200 crore from PE firm CX Partners.	Sutures India produces and exports absorbable and non absorbable surgical sutures. Other products include surgical tapes, gloves, surgical needles and skin staplers. The company will utilise the funds for expansion activities.
Venture capital funds Accel Partners and IDG Ventures India invest a total of $5 million in Forus Health, a medical technology and solutions firm.	The Bangalore-based company aims to cater to the country's healthcare needs through groundbreaking product design and positioning of services. Forus' leading device, 3nethra, is a low-cost, portable, non-mydriatic, non-invasive pre-screening ophthalmology solution, which can diagnose conditions such as cataract, glaucoma, diabetic retina, refraction and cornea issues. Moreover, even a technician who has received minimum training can operate the device. It can also be transported to remote areas.

4 Outlook

An Outlook

The Indian medical devices industry has witnessed significant growth in the past few years, primarily driven by growth in healthcare services. In 2011, the market generated sales worth US$3 billion, and Visiongain, a London-based business information provider, predicts that this figure will reach approximately US$11 billion over the next ten years.

While growth forecasts are interesting, the current size of the industry points to a somewhat underdeveloped sector. The absence of a clear and consistent regulatory framework and lack of adequate incentives and funding for manufacture devices in India has kept the industry from realising its full potential.

Nevertheless, with several favourable changes on the anvil, the future of the Indian medical devices sector looks promising. The industry appears to be on the brink of getting a clear regulatory framework tailored to address the requirements of the medical devices segment. This framework, once established, should ensure the safety, quality and availability of medical devices in India, apart from creating a platform for a fair and legitimate marketplace. Moreover, the government is planning to introduce new initiatives to take healthcare to under-penetrated rural areas and encourage local manufacturing of medical devices. These initiatives, supplemented by the overall growth in healthcare services, should generate more demand for medical devices.

According to Mr. Krishna Prasad, President of Prognosys Medical Systems, internationally, especially in the context of medical equipment, "Made in India" products are not perceived as the best in the market. Indian made medical equipment is considered low cost, having low quality and not necessarily meeting international standards of safety.

While the Indian pharmaceutical industry has paved the way for Indian made products to be recognised internationally, it is high time that the Indian medical equipment industry also carves its niche. Achieving the feat also calls for a change in mindset of the Indian end user. Demand for quality should begin at home and this will certainly push the industry to develop better quality products at competitive prices. While competitive pricing of medical equipment is essential for a market like India, it should not be at the cost of certain basic standards of safety. The goal of Indian medical equipment manufacturers should be to build products of international quality at Indian prices.

The Indian government also has to play a key enabling role, bringing in regulatory clarity, providing incentives to increase competitiveness of the domestic medical devices companies and channeling research grants/funding to early stage companies looking to develop indigenous technologies.

Overall, a space well worth watching and one that has the potential to grow along the lines of the pharmaceutical manufacturing industry, albeit at a smaller scale.

Mahadevan Narayanamoni believes that while the growth opportunity is undoubtedly there, the quality and sustainability of growth would depend on how domestic operators invest in and develop new technologies and products in order to compete effectively with MNCs. FDI will continue to play an important role in enabling this in the coming years, along with other favourable macro factors.

5

Upcoming Events

Upcoming Events

Event	When	Where
Medicall 2013 - India's Premier Medical Equipment Show	2-4 August 2013	Chennai, Tamil Nadu
Medical Fair India - International Exhibition and Conference on Diagnostics, Medical Technology, Rehabilitation, Medical Equipment and Components in India	8-10 March 2013	Pragati Maidan, New Delhi
MediTec Clinica 2013 – Trade Fair and Conference for Medical and Hospital Equipment and Supplies	16-18 March 2013	KTPO Trade Fair Center, Bangalore, Karnataka
India International Medical Equipment Expo Hyderabad 2013 - Healthcare sector trade event	4-6 May 2013	NSIC Trade Centre - ECIL, Hyderabad, Andhra Pradesh
Global Congress on Investment Opportunities in Medical Electronics and Devices 2013 - An International Exhibition-cum-conference	25-27 April 2013	ITPO, Pragati Maidan, New Delhi

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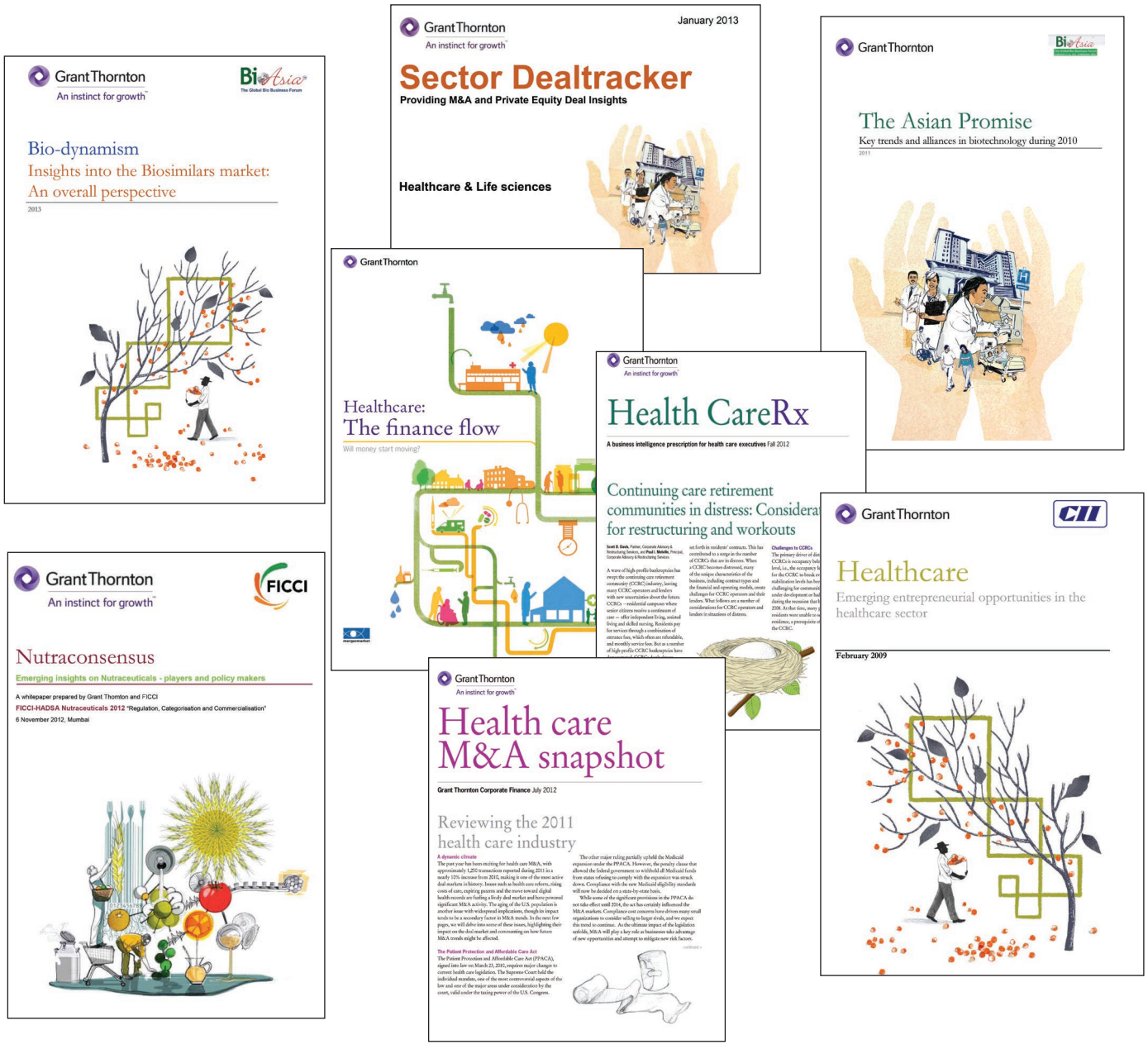

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