

# Sustainable and Inclusive Innovations in Health Care Delivery – A Business Model Perspective

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Developed By: GIZ India & CII-ITC Centre Of Excellence For  
Sustainable Development



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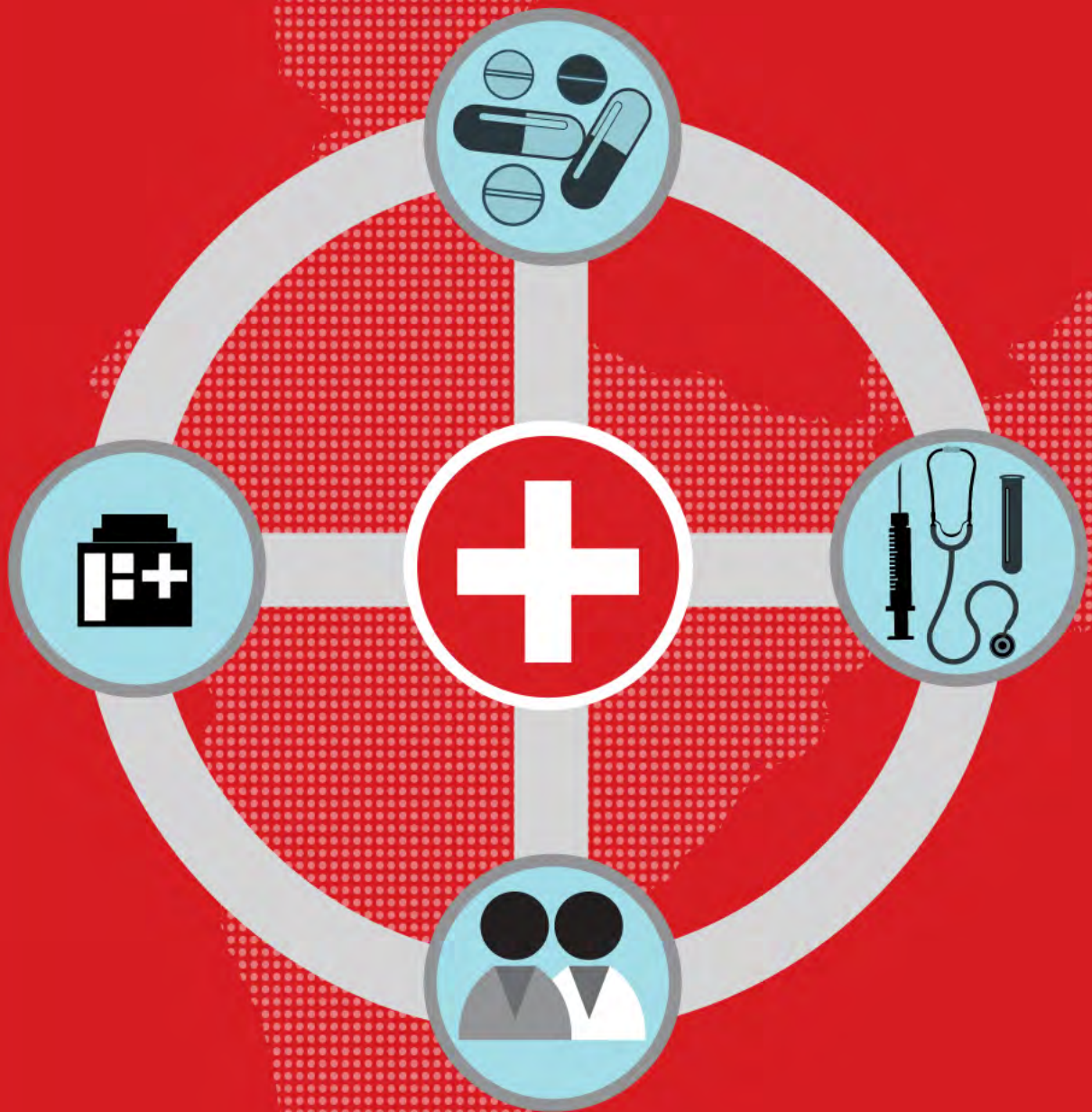
# Acknowledgements

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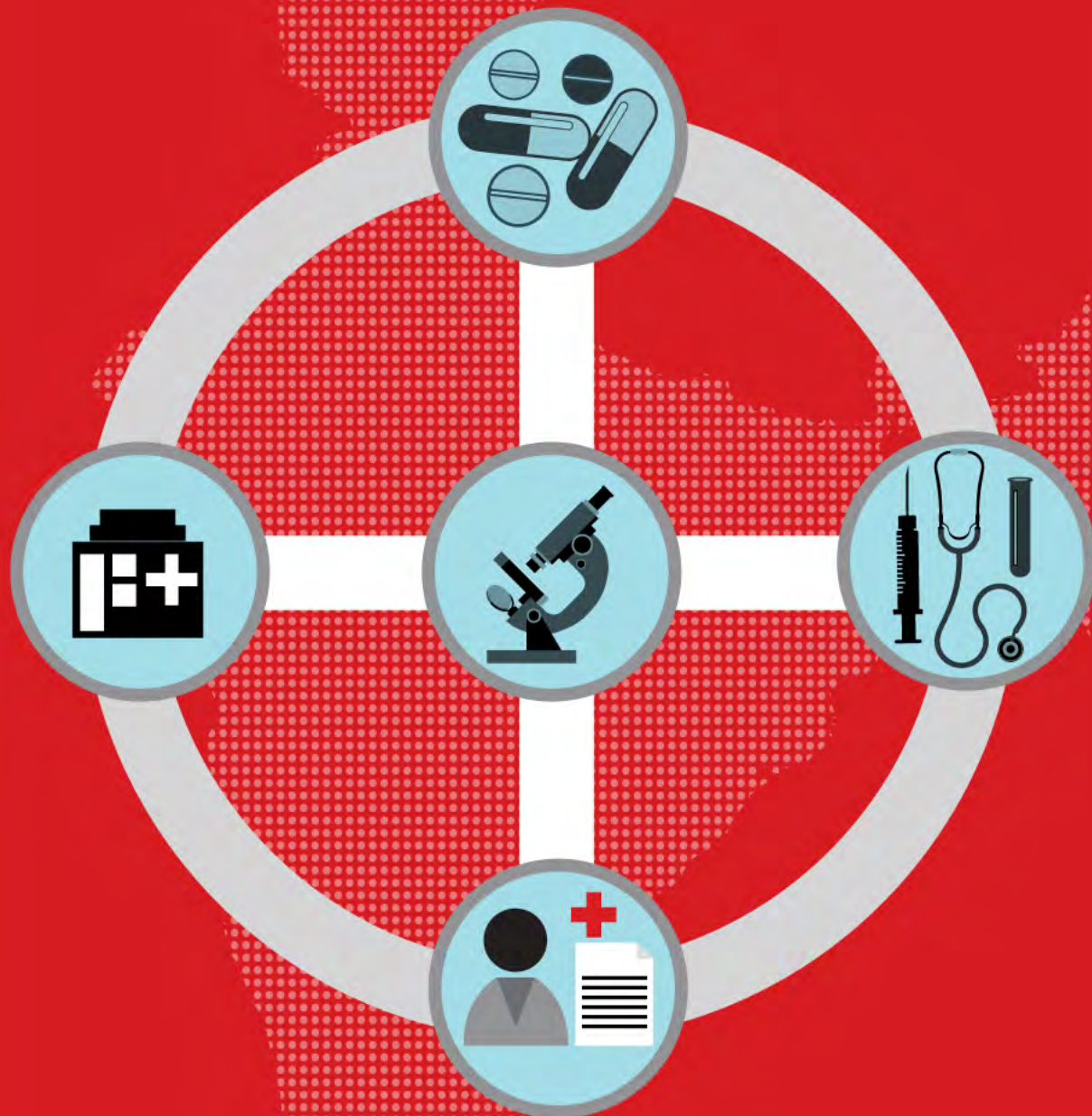
# 1 Introduction

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The Indian healthcare industry is at a very interesting position, delicately poised to grow exponentially over the next decade. With the growing population, increased consumption and rise in 'lifestyle-oriented' diseases the future of this industry and its working will have a huge impact on the country's development. However, the expenditure on the Indian healthcare sector both from public funds as well as private sources is amongst the lowest in the world and a large number of challenges need to be addressed urgently. These challenges might be in terms of the lack of financial support institutions and trained or skilled workforce, accessibility of healthcare services and quality of patient care etc.

While these roadblocks might dampen the spirit of development but they also provide significant opportunities for the private sector and sound business model oriented enterprises to innovate and scale. This study uses a business model oriented approach aiming to address the challenges in this sector and build sustainable and scalable enterprises while showcasing some companies that have institutionalized this business model approach to make profits while creating a significant social impact. The objective is to encourage potential entrepreneurs to learn from the working paragons outlined and develop a thought process that incorporates essential elements of sustainability both financial as well as social. The examples are classified according to the kind of healthcare intervention they provide (viz. technology, product, telemedicine etc.) and their successful business model component which makes them unique.





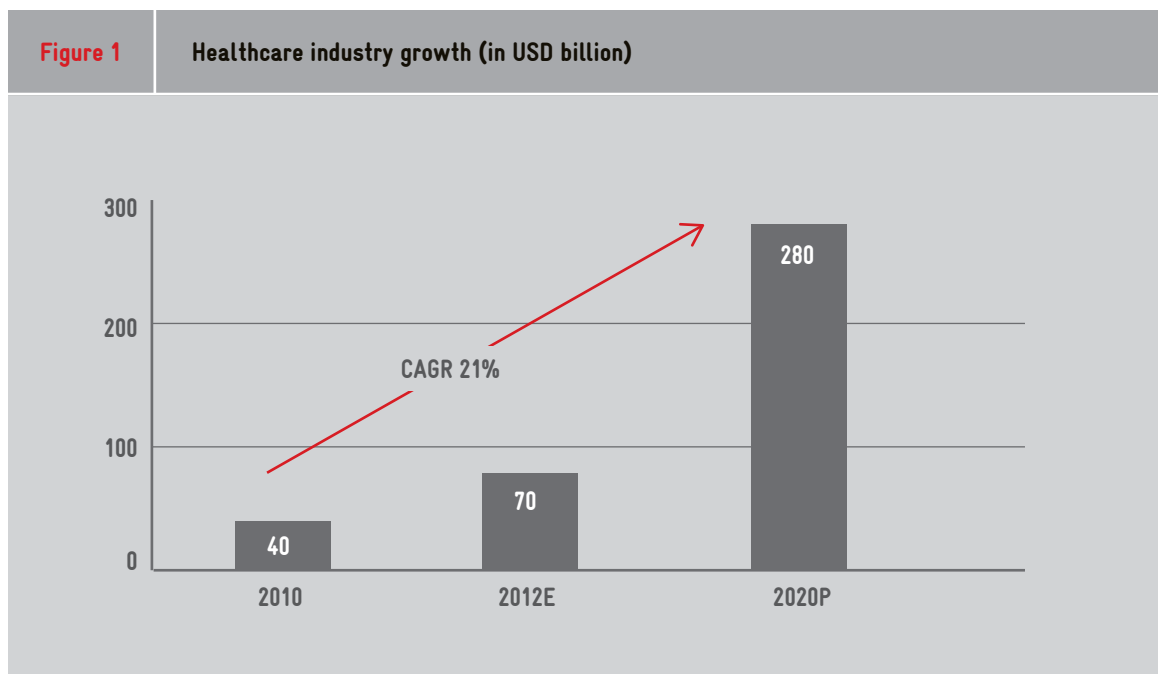


# 2 Overview of the Indian Healthcare Industry

The healthcare market in India is split into five key segments as outlined below:

- 1 Hospitals – Government infrastructure including healthcare centers, district and general hospitals and private hospitals including nursing homes, mid-tier, top-tier and super specialized establishments.
- 2 Pharmaceuticals – This includes the manufacture, extraction, processing, purification and packaging of chemicals to be used as medication.
- 3 Diagnostic – Comprising of businesses and laboratories that offer analytics or diagnostic services including body fluid analysis.
- 4 Medical Equipment and Supplies – Including establishments engaged in manufacturing and maintaining medical equipments for surgical, dental, ophthalmic, laboratory etc. use.
- 5 Medical Insurance – Comprising of insurance to cover hospitalization expenses, reimbursements etc.

This sector is growing rapidly and is estimated to be over USD 40 Billion (Agarwal & Shah, 2010) with more than half dominated by the hospital business, followed closely by pharmaceuticals and medical instruments.

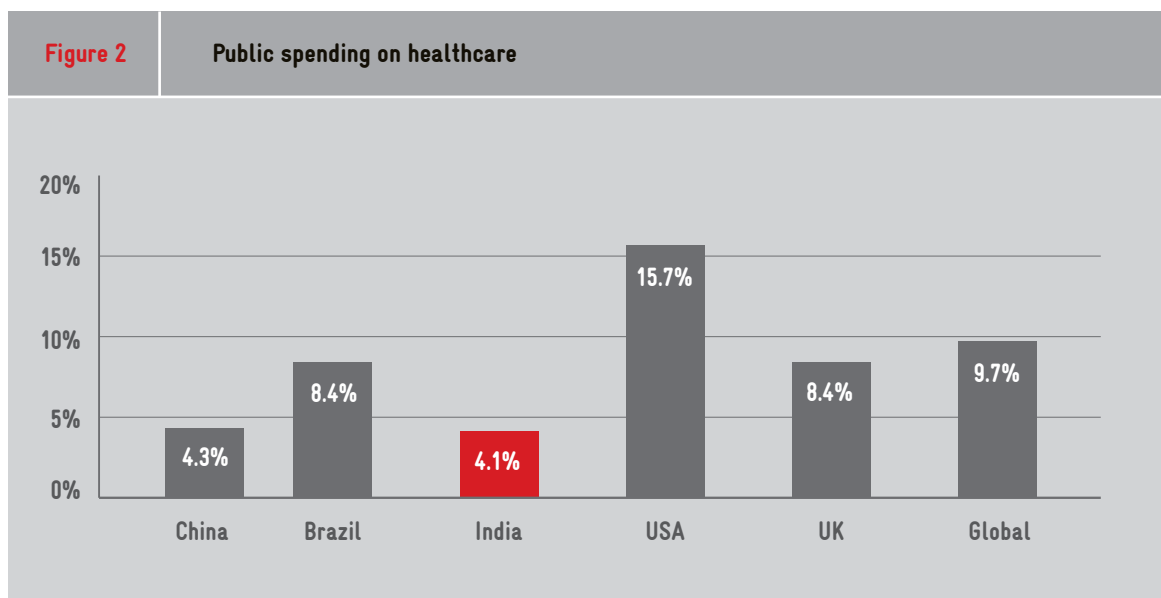


According to an Indian Brand Equity Foundation (IBEF) Report on healthcare (Nov, 2011), the market size of this industry is expected to grow to USD 280 billion by 2020. This would be over 10 times as in 2005, when the market was at USD 23 billion, a spectacular growth in just a short span of 15 years (IBEF, 2011). A shift in policy has also been observed with the Government of India aiming to develop India as a global healthcare hub and a leader in medical treatment and facilities in South Asia. The Government's support has been displayed by

a substantial deduction in excise duties and a higher budget allocation for the healthcare sector in recent years with custom duty on life saving equipments being reduced to 5% (from 25%) and import duty on medical equipment lowered to 7.5%.

Healthcare sector revenue has also been growing significantly showing potential of also becoming a highly profitable industry for private players. The Indian Brand Equity Foundation (IBEF) has estimated that healthcare sales (across the different components) grew at a compound annual growth rate (CAGR) of over 17% between 2005 and 2010.

Even though the industry is so large and expanding, India's healthcare spending pales in comparison to other developed (US and European) or emerging (China and Brazil) economies (KPMG, 2011). The Indian public healthcare expenditure is actually less than half the global average when compared as a percentage of GDP as shown below (WHO, 2012).



Even more dismal is the share of public spending on total healthcare expenditure in India (at 23%, lower than half the global average), highlighting the fact that the private sector plays a dominant role in ensuring proper health standards. Individuals also spend a lot less on healthcare in India; with the per capita healthcare spending in purchasing power parity terms being one of the lowest in the world.

India also rates quite poorly on the basic healthcare indicators when benchmarked not just against the developed countries but also against the other BRIC nations. The infant mortality rate for example, is not just more than seven times that of the US but also thrice that of Brazil or China according to the WHO Healthcare Report 2012.

A significant number of people in India, especially those living in the rural parts do not have access to health infrastructure or trained healthcare professionals. It is estimated that India has an average of 0.6 doctors for every 1000 people as compared to the global average of 1.23 (CII & Technopak Adviors Ltd, 2011). What is even more appalling is that the rural doctor to population ratio is lower by six times as compared to urban areas, showing a much higher concentration of healthcare institutions available to the urban rich class rather than the poor. A Confederation of Indian Industry (CII) Technopak study also highlights that there is a shortfall of over 900,000 physicians and 250,000 nurses in the country (WHO, 2012).







# 3 Emerging Trends and Growth Drivers

The rapid pace of development in India has also resulted in a change in the kind and magnitude of diseases and healthcare needs. Heavy urbanization and modernization has altered lifestyles of people while technology has opened up a number of innovative cost effective treatments, transforming the way healthcare is delivered.

## Major Trends

### Shift from communicable to 'lifestyle' diseases

With the increasing pace of life and growing urbanization, many modern day problems like obesity, hypertension, blood sugar etc. are emerging as major ailments shifting the disease profiles from infectious to lifestyle diseases. This is also creating a dual disease burden on the healthcare system as new medical and infrastructure changes are being essentially required.

An analysis by KPMG estimated that nearly 50% of the spending on in-patient beds is now due to lifestyle diseases and the need for specialized intensive care has also increased manifold (KPMG, 2011).

### High demand

There has been an exponential growth in demand for high quality and specialized healthcare services in tier II and tier III cities and smaller towns and the Government of India has also relaxed the tax burden on hospitals in these areas for the first five years (IBEF, 2011). The Government's support has been displayed by a substantial deduction in excise duties and a higher budget allocation for the healthcare sector in the recent years. Custom duty on life saving equipments has been reduced to 5% (from 25%) and import duty on medical equipment lowered to 7.5%.

### Emergence of tele-medicine and technology driven healthcare services

Supported by the robust ICT sector in India, tele-medicine is rapidly growing in most parts of the country. Several major providers like Apollo, AIIMS, Narayana Hrudayalaya etc. have adopted telemedicine services and a number of others have also developed private-public-partnerships (PPP) in this domain. At present, it is estimated that nearly 650 telemedicine centers exists all over the country (IBEF, 2011).

### Increase in investor interest and rising private equity and merger and acquisition (M&A) activity

In the last decade, this sector has also seen a high interest from investors especially in new product development, research, as well as the introduction of specialized delivery models. This demand has also been fueled by medical tourism and the sector is likely to see an increase in investment from USD 34.2 billion in 2006 to USD 78 billion in 2012, nearly 85% coming on the back of private players (KPMG, 2011).

### Evolution in delivery models

New delivery models to reach un-serviced areas are also being developed and some have already demonstrated sustainability while others are informative pilot projects. Growth in day-care centers, elder homes, ayurvedic and natural medicines are also good examples of evolving models.

### **Growth in medical insurance coverage**

With the growth of affordable healthcare solutions, the insurance industry is also expected to grow significantly and is estimated to be nearly USD 3 billion in 2012.

### **Growth Drivers**

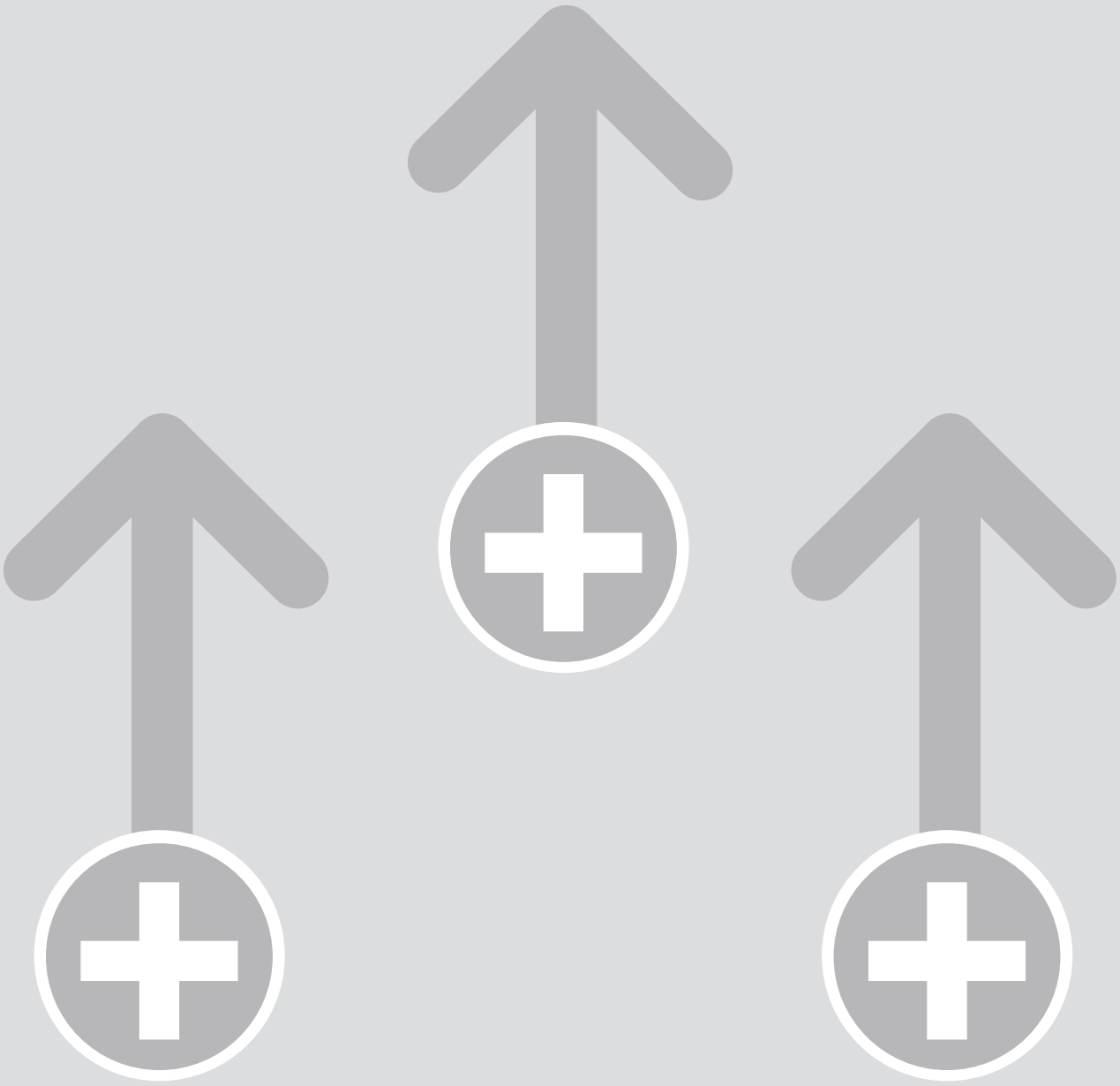
A combination of demographic as well as economic growth drivers is pushing this industry. Some big ones are outlined below:

#### **Demographics**

- Population is expected to increase from about 1.1 billion (2009-2010 census) to nearly 1.4 billion (by 2024 est.) (Shetty, et al., 2010)
- While 60 percent of the population is in the younger age bracket, there is an expected increase of geriatric population from current 96 million to around 168 million by 2026. This represents a huge patient base and creates a market for preventive, curative and geriatric care opportunities
- Income of people has also increased significantly, providing more people access to healthcare services. The per capita income is set to touch USD 1354.2 by 2016 (Clements, et al., 2012) (NRHM, n.d.)
- Education levels have improved and more people understand the value and benefit of proper healthcare facilities

#### **Economic factors**

- Tax benefits are being provided by the government to encourage growth, along with subsidies, higher depreciation on medical instruments etc.
- Custom duty on imports of life-saving equipments has been reduced to 5% from 25% and import duty on secondary medical equipment has gone down to 7.5%
- India is also transforming into a South Asian hub for high quality and cost effective health treatment and surgery with people from many developing nations regularly arriving as medical tourists
- Health insurance coverage has also increased substantially (at nearly 39% CAGR between 2006-2010) with the market sized at nearly USD 1730 million by 2010 (KPMG, 2011)
- The Eleventh Five Year Plan (2007-2011) has allocated 89% of the Government of India health budget (estimated at USD 0.9 billion) to the National Rural Health Mission (NRHM, n.d.).









# 4 Emerging Business Model Driven Private Sector Approaches

The current public healthcare infrastructure in India is inadequate as compared with global standards. It lags behind the global average in terms of healthcare infrastructure and manpower. India has an average of 0.6 doctors per 1000 population against the global average of 1.23 which suggests an evident manpower gap. This gap is also an opportunity for private players who build sustainable enterprises on sound business models.

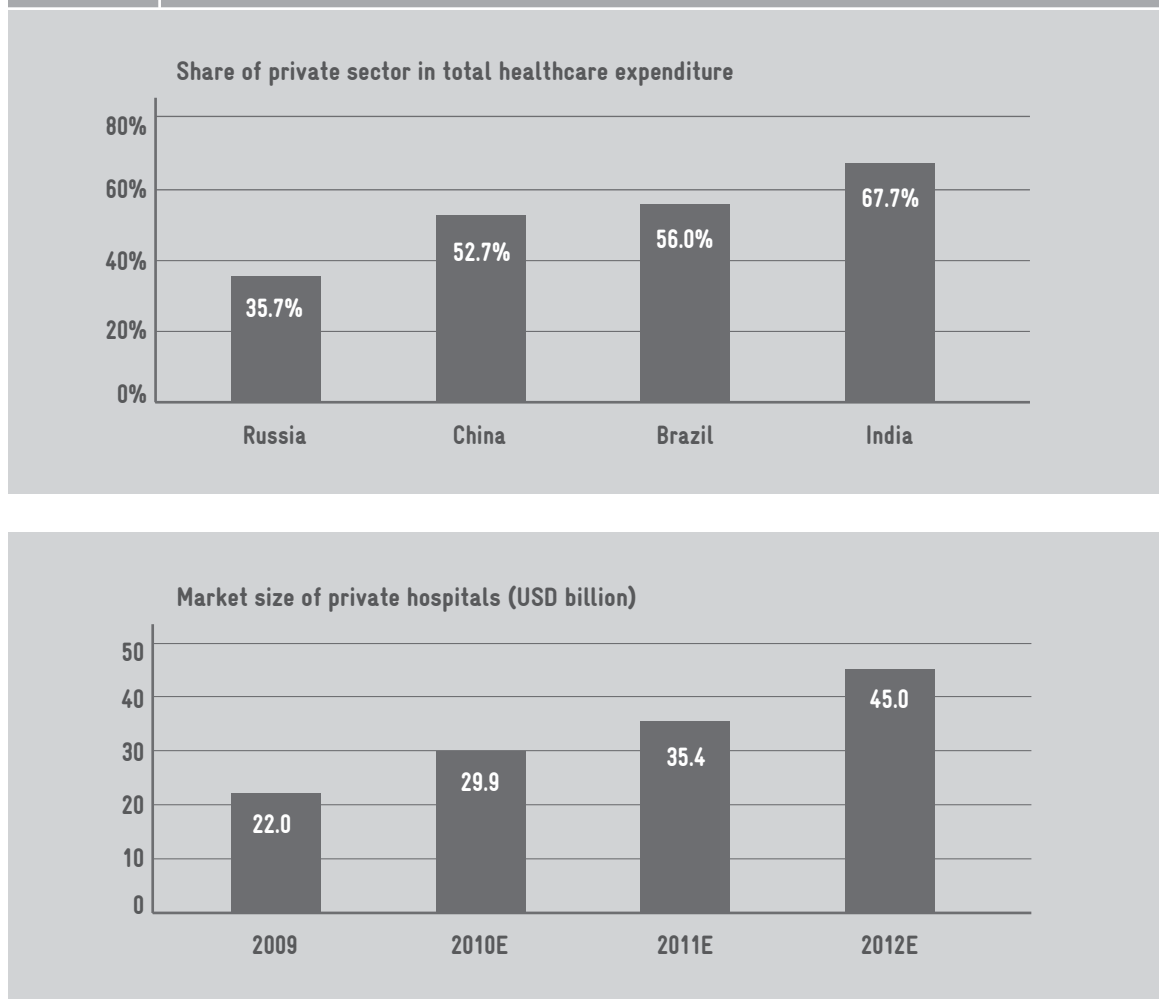
Indicators	Year	India	USA	UK	Brazil	China
Hospital Bed Density (per 10,000 population)	2000-2009	12	31	39	24	30
Births attended by skilled health personnel (percent)	2000-2009	47	99	NA	97	98
No. of doctors	2009	6,43,520	7,93,648	1,26,126	3,20,013	18,62,630
No. of nurses	2009	13,72,059	29,27,000	37,200	5,49,423	1,22,59,240
No. of dentists	2009	55,344	4,63,663	25,914	2,17,217	1,36,520
No. of doctors (per 1,000 population)	2009	0.6	2.7	2.1	1.7	1.4
No. of nurses (per 1,000 population)	2009	1.3	9.8	0.6	2.9	1
Avg. no. of doctors (per bed)	2009	0.6	0.81	0.53	0.69	0.46
Avg. no. of nurses (per bed)	2009	1.27	3	0.16	1.18	3.02

Presently, In India private healthcare accounts for almost 68% of the country's total health care expenditure which is higher than all other BRIC countries (see below). Nearly 82% of the hospitals in India are privately owned with a market size of over USD 45 Billion.

In this sort of an emerging and expanding market, healthcare enterprises with sound business models are successful in being sustainable and impacting the lives of a large number of people.

Figure 3

## Private sector domination in healthcare



Private participation in the healthcare sector has also increased rapidly due to substantial investor interest and rising merger and acquisition activity as a number of return oriented business models and domains have been identified. The sector has also evolved through increased R&D investments and specialized delivery models. Many foreign enterprises are entering India through joint ventures and local healthcare units. Singapore's Pacific Healthcare made its first foray into the Indian market by opening an international medical center which is a joint venture with India's Vitae Healthcare from Hyderabad. Singapore's Pathway Healthcare group also entered India in 2003 with a joint venture with Apollo group to build the Apollo Gleneagles Hospital for USD 29 million in Mumbai.

Sectors such as pharmaceuticals and biotechnology have also seen a significant traction over the past few years with Grant Thornton Deal Tracker estimating healthcare to be about 14% of total M&A deals (KPMG, 2011).

This huge business opportunity along with the potential for rapid scaling of impact makes it imperative for entrepreneurs to build sound business models and ensure that all elements of sustainability are addressed. To address this need the business model innovation framework encapsulates the sustainability parameters into an organized structure, outlining activities and deliverables for entrepreneurs to ensure sustainability and high impact.







# 5 Business Model Innovation Framework<sup>1</sup>

The framework takes into account the different parameters that an entrepreneur needs to consider for his or her enterprise in order to scale and be self-sustainable. Key questions are outlined in each component, which when answered can provide clarity and ideas for growth in difficult and underdeveloped market environments and insights into overcoming the challenges being faced.

The framework also recommends activities and processes that help towards reaching the solution to the questions outlined. The key goal of the framework is to encourage entrepreneurs to create value in a sustainable way. The key components to consider are explained below along with the activities recommended.

<b>Table 2</b>		<b>Returns</b>
<b>Activities</b>	<b>Guiding questions</b>	
Estimate your business model to ensure enough cash flow for growth and scalability	What are the revenues? What are the margins? Is the cash flow enough for growth?	
Identify the accurate pricing mechanism to have enough room for research and distribution costs	What is the pricing strategy? What is the five year distribution plan?	
Build key performance indicators (KPIs) and have milestones as needed	How do you estimate your financial health?	
Ensure regular social audits to ensure value to customers is optimal	What are the impact indicators?	

<b>Table 3</b>		<b>Enablers</b>
<b>Activities</b>	<b>Guiding questions</b>	
Identify the processes that help in the business's growth	What are the key processes & activities? What are the main capacities, capabilities and competencies of the organization?	
Catalogue the external factors and support structures that can be built on	Who are the partners and suppliers? What environment factors help growth?	

<sup>1</sup> The Business Model Innovation Framework has been developed at the CII – ITC Centre of Excellence for Sustainable Development team headed by Mr. Sachin Joshi (sachin.joshi@cii.in) and has been extensively utilized by potential social entrepreneurs to develop a sustainability oriented thought process for scaling and growing their work.



Activities	Guiding questions
List the technologies and platforms that makes the enterprise sustainable	Is their any platform or medium that helps the activities?
Build on partnerships wherever possible	What key resources are available with others?
Concentrate on stakeholders, vendors, suppliers and agents in the value chain	

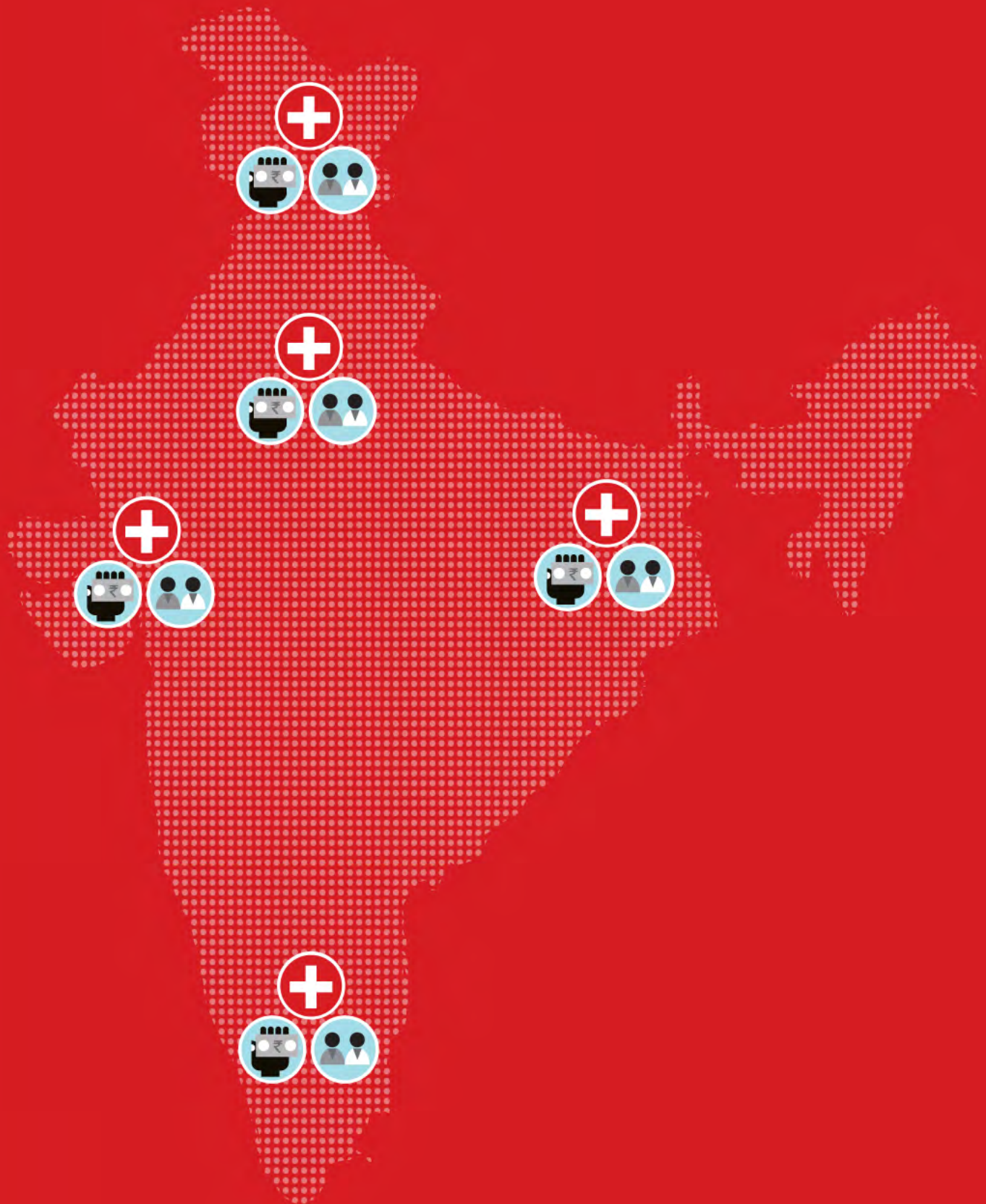
Table 4 Target Segment	
Activities	Guiding questions
Understand the needs of the community and access to present healthcare system	Who are the customers?
Conduct an income survey and value proposition analysis	Who are the beneficiaries?
Forecast the growth of the community and the needs	What are the demographic characteristics of the community?
Evaluate the inclusiveness of the model and the community involvement	How is the segment likely to grow?
Find out the secondary benefits	

Table 5 Delivery	
Activities	Guiding questions
Develop distribution and retail mechanisms for the product or service	How do you engage?
Identify partners and stakeholders in delivery and logistics	How is it distributed?
Plan for waste management and environmental sustainability	Who helps in delivery and logistics?
Experiment with different payment models like 'pay-as-you-go'	
Develop a strategy to provide support services at an affordable costs	What is the after sale service?
Evaluate insurance potential and financial channels	How is the purchase made?
Recognize and prioritize major challenges with delivery mechanisms	



<b>Table 6</b>	
<b>Investments</b>	
<b>Activities</b>	<b>Guiding questions</b>
Understand the kind of returns that you can provide	What are the investment values?
Evaluate funding needed and select sources of funding	Who is investing?
Recognize the strategic non financial inputs that an investor can bring to the network	
Estimate the timing of future investments and their utilization factors	When is the investment needed?
Identify the major costs and expense elements	Which are the cost centers? What are the cost values? What are the different types of costs?








# 6 Indian Success Stories – Cases from the Field

## 6.1 Community Development & Healthcare Financing

A number of innovative business model driven enterprises have been developed that work towards community health development. Most numerous among them are rural low-costs hospitals that offer standardized care to patients and optimize their processes and supply chain to ensure affordability and quality.

This section profiles five such cases, all of which have highly inclusive business models and follow the above mentioned business innovation framework and have demonstrated success in one or more components.

### → 6.1.1 Sugha Vazhvu Health Care (IKP Trust)



**Vision:** SughaVazhvu’s broad vision is to create “Disease free villages”. IKP Trust’s mission is to enable the use of advanced scientific knowledge for the progress of society. In particular it seeks to focus on the intersection of information technology and life sciences and incubate organisations that explore different facets of this intersection in a manner that adds value to society.

**Impact State:** Tamil Nadu

**Impact Domain:** Primary Health Care for Common Ailments

SughaVazhvu Health Care Pvt. Ltd (Vazhvu, n.d.) is a fully owned subsidiary of IKP Trust and the field implementation partner of IKP Centre for Technologies in Public Health (ICTPH), for their integrated rural healthcare pilot. Located in Tanjore District, Tamil Nadu, SughaVazhvu Health Care comprises a team of doctors, nurses and field coordinators who work as a team in trying to make access to healthcare a reality for rural population, through the use of innovations in public health with improved preventive and primary care.

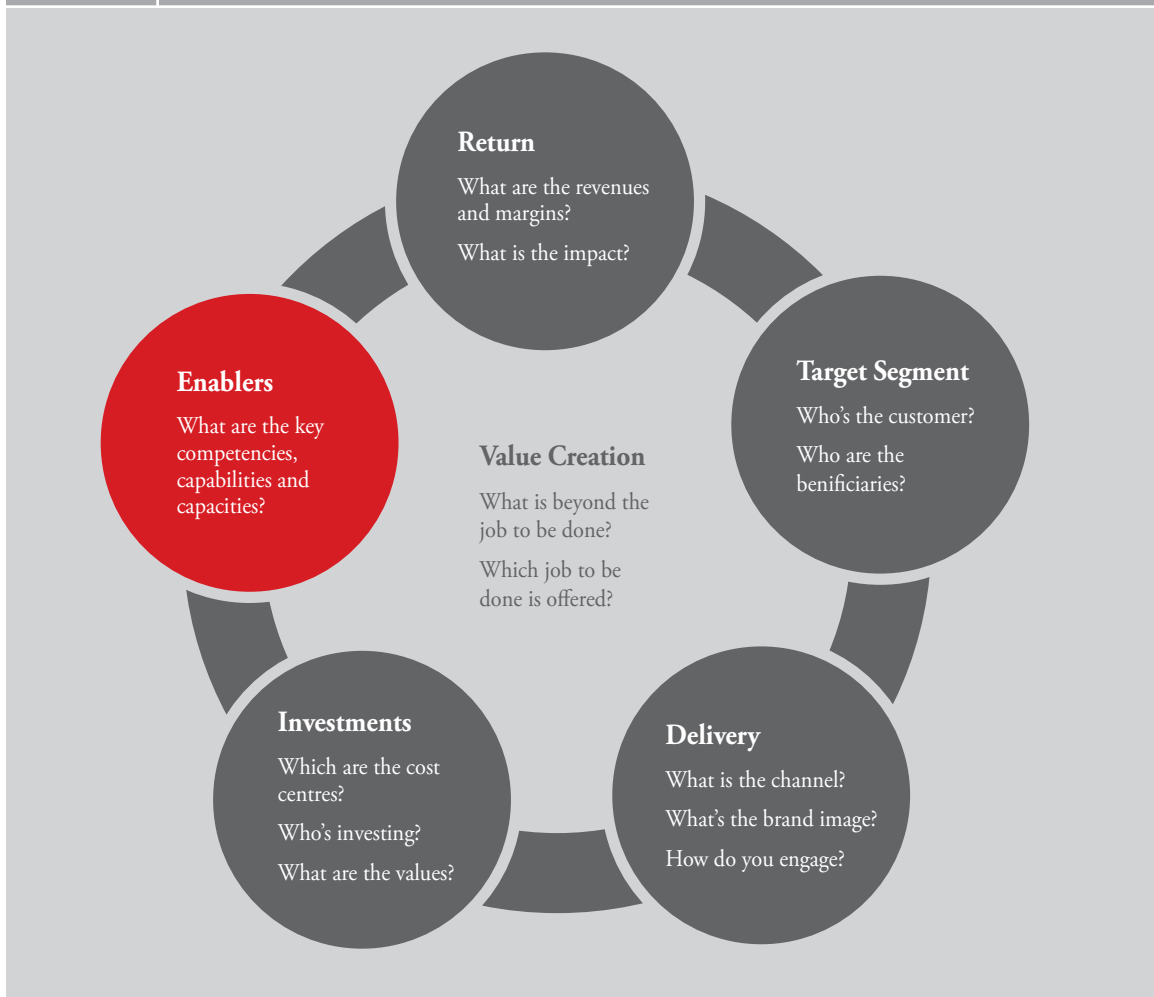
**Key features of the model**

- Strong network of rural health care centers and dedicated field staff
- Well defined processes, protocols and standards



Figure 4

Key strengths according to business innovation framework: Enablers



**Introduction**

Sugha Vazhvu, a subsidiary of IKP Trust, was founded by a former Board Member of ICICI Bank and former president of ICICI Foundation, Dr. Nachiket Mor. He is now the Chairman of the Boards of Sughavazhvu Health Care, CARE India and IFMR Trust and is closely involved in the evolution of these organizations.. Dr. Zeena Johar, also on the BoD of Sugha Vazhvu, is one of the founding members of ICTPH. Dr. Johar has played an instrumental role in conceptualizing the strategic alignment of ICTPH with the overall mission of IKP Trust. She is currently spearheading the ICTPH Tanjore Health Systems Pilot. SughaVazhvu operates as the implementation partner of IKP Centre for Technologies in Public Health (ICTPH), it's sister subsidiary. IKP Centre for Technologies in Public Health (ICTPH) is supporting SughaVazhvu Health Care to establish a health network in rural Tamil Nadu. Delivering standardized, evidence based care is the solution SughaVazhvu has set out to deliver for remote rural Indian populations.

**Enablers: Delivering Primary Healthcare at the Grassroots – ATMs of Healthcare**

The SughaVazhvu Health Model follows the preventive and curative approach of primary healthcare. It has been envisaged to operate in rural communities where quality healthcare is not available or is highly limited, and where low-complexity interventions can have substantial effects on the well-being of the population. Curative care and basic diagnosis services are provided by a nurse in the health center (RMHC) under the supervision of a doctor, who remotely monitors consultation sessions; while outreach activities are performed by health workers in the community. The nurse is part of the community and speaks the local language.



In addition, the RMHC works as an outreach post for preventive interventions through a team of health workers. Each health worker visits and monitors around 1,000 households, screens for health risks and provides health counseling. Doctors are able to monitor a greater number of patients while living in communities with better services and infrastructure.

The SughaVazhvu Model operates in two unique infrastructure units that offer similar clinic outpatient care. The medical unit close to rural communities where nurses provide health services is the Rural Micro Health Center (RMHC), and the unit where doctors are stationed is the Zone Health Center (ZHC).

- **Rural Micro Health Center (RMHC):** Provides healthcare to a population between 6,000 and 10,000 people. It is staffed by a nurse and a health worker and is the reunion point for a team of outreach health workers.
- **Zone Health Center (ZHC):** Central facility easily accessible from RMHCs. Two doctors support around twelve RMHCs each through a remote connection.

SughaVazhvu relies on three sets of protocols. The first captures a patient's medical information. The second codifies how the tests are to be conducted. The third helps with diagnosis of 30 common ailments, including upper respiratory infections, gastro-intestinal problems, diabetes and hypertension. A strong understanding of the geographies has led to systematic household based enrolment programs. SughaVazhvu has developed enrolment programs that capture basic demographic information, inclusive of GPS marker and family composition of a House Hold (HH); followed by a systematic evaluation of adult risk factors through a mobile based HH screening protocol coined as Rapid Risk Assessment (RRA). Cardiovascular disease risk factors such as BMI, waist-hip ratio, blood pressure, age, personal history etc. help identify high risk individuals for follow-up care at the RMHC. Questions related to post-coital and inter-menstrual bleeding help in identifying women at high risk of reproductive health related diseases. Upon arrival a patient follows a systematic risk assessment protocol similar to the RRA but more comprehensive to capture a larger set of conditions, which is then followed by consultation with a physician. In-house diagnostic capability, with a runner managing blood serum movement across the network of RMHCs allows better management of chronic conditions.

Innovative interventions such as ophthalmic and oral care, facilitated through a primary care physician are clear differentiators for SughaVazhvu within the primary healthcare market. One of the key functions of ICTPH's Health Management Information System (HMIS) is to collect health information and maintain electronic medical records (EMRs) of each patient who visits a SughaVazhvu rural micro health centre (RMHC). At the population-level, data from EMRs provides the basis for epidemiological analyses of the communities served by RMHCs. Such epidemiological analyses become especially important when viewed through the lens of the preventive-promotive approach to healthcare taken by ICTPH.

A key strength of the SughaVazhvu model lies in its immense knowledge of the communities it works with, specifically in relation to the individual level health status of the population in these communities. This has been made possible through ICTPH's introduction to the Population Level Screening Package (PLSP). PLSP is a comprehensive (data capturing) template that can be used to collect health data pertaining to all individuals in a given population (ICTPH, n.d.). The concept and implementation of PLSP has come a long way since its inception at ICTPH, and has gone through many levels of improvisation. Currently, SughaVazhvu is in the process of piloting PLSP data collection through Optical Mark Recognition (OMR) technologies. The use of this approach not only reduces the time taken to digitalize field data, but also reduces paper usage and hence proves to be more cost effective. Further, reduction in time spent on data allows the RMHC staff to respond faster to the health needs of their patients. It also minimizes error by eliminating the manual importing of data during digitalization.

#### **Returns: Still on the Road to Making Healthcare Centers Financially Self-Sustaining**


By seeking to bridge the gap between private health care which remains inaccessible to large sections of the



society primarily due to affordability and lack of poor infrastructure and public health care which is often woefully inadequate, SughaVazhvu’s work is socially relevant. With continued funding and commitment it should remain sustainable. The establishment cost for each center which is currently estimated at Rs. 5.5 lacs and the monthly operating cost of Rs. 70,000 are currently being funded by ICTPH (Vazhvu, n.d.).

SughaVazhvu continues to face the challenge of making the Health Centers (RHMCs and HHCs) financially self-sustaining. According to certain anecdotal information, when it was free, the Alakkudi centre (RHMC) was seeing 120 patients a day. When it started charging Rs 50 per visit, there were hardly any visits. Having reduced the fee to Rs. 15 since then, the center now sees about 10 patients a day. As per Nachiket Mor, the state of Tamil Nadu was chosen because its healthcare set-up is good enough to experiment with next-generation questions. But it also means SughaVazhvu is competing with a good, and free public health system. Further, it seems that villagers have not grasped SughaVazhvu’s USP: healthcare management. Therefore, containing costs and managing logistics, and co-existing with the public health care system will continue to be a challenge.

➔ **6.1.2 Healing Fields Foundation**



**Vision:** to make healthcare affordable and accessible to all people in India, especially the poor, underprivileged & marginalized

**Impact States:** Uttar Pradesh, Bihar, Orissa & Andhra Pradesh and Karnataka

**Impact Domain:** Health Education and Health Financing

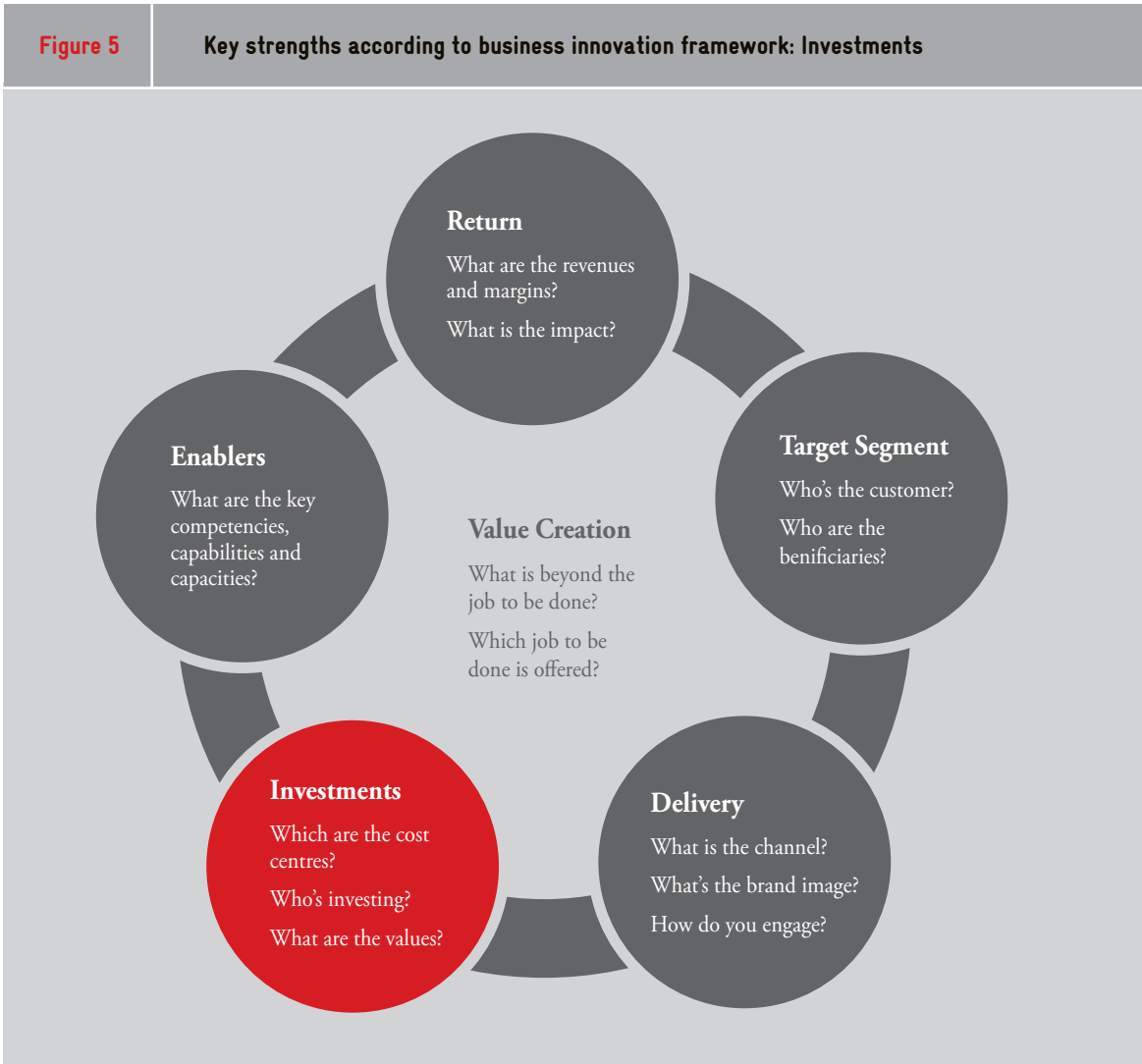
Healing Fields Foundation (Healing Fields, n.d.), a non-profit organization, led by an Ashoka Fellow, has been doing pioneering work in the areas of health financing and community health education over the last decade. The Foundation’s key projects include health insurance, health financing groups, water and sanitation, nutrition interventions and distribution of sanitary napkins.

**Key features of the model**

- Health financing plans including health savings and micro insurance
- Strong focus on health education

**Investment: Health Education and Health Financing**

Founded in 2002, Healing Fields Foundation (‘HFF’) is recognized as a pioneer in the areas of health financing and community health education. Through their health management expertise and research methodology, HFF



supports organizations and people involved in the development and delivery of the entire health care ecosystem. Healing Fields is led by an Ashoka Fellow, Mukti K Bosco (Secretary General) and Nimish R Parekh (President), a serial entrepreneur with over 15 years of experience in the health and health insurance industry.

**Enablers: Ecosystem of Healthcare**

HFF works in close partnership with community service organizations, private agencies, government and semi-government sectors, and focuses on access and affordability to quality health care as its primary objective. Its programs broadly encompass 1) Community Health Education 2) Health Savings 3) E- learning 4) Research 5) Mobile Technology 6) Consultancy.

- 1 Health Education** - Healing Fields has created innovative ways of addressing community health needs based on the SHG (Self Help Group) model. HFF is developing Community Health Leaders (CHLs) in communities and schools, who provide health training to their village, slum members and peers in schools respectively, for preventing illnesses and also facilitating access to affordable healthcare. This is done through health financing and harnessing the various local governmental programs. The CHLs are typically women selected from the local community, semi-literate in local language, who undergo 6 months contact training & internship with HFF and work exclusively on health initiatives. Outreach achieved through each CHL is 250-300 families. Initiatives undertaken by the CHLs so far include environmental hygiene, water and sanitation projects including Community Latrines and manufacturing and distribution of Sanitary Napkins.

- 2 **Health Savings & Micro Health Insurance** - In March 2008, HFF concluded a three-year pilot project on healthcare and health financing needs of the poor in rural and urban areas of Andhra Pradesh and Karnataka. After a comprehensive analysis of the results, the Healing Fields Foundation developed a unique health microinsurance based on the Diagnosis Related Group Model in association with two private insurers. The uniqueness of the program lies in the fact that health savings groups are not just financial groups but they are also involved in health education, prevention and promotion work.
- 3 The Healing Fields **E-Learning** portal has been designed in conjunction with its health education program. It is meant to support and reinforce the course-ware being used for the training of the community health leaders. e-learning is intended to help in rapid scale- up of the program and also in empowering the coordinators at the district level in conducting the program independently and at the same time ensuring uniformity and consistency in the content and quality.
- 4 **Research** and data collection is a strong focus area of Healing Fields and contributes to innovation and development of programs.
- 5 **Mobile Technology** - A program for conducting surveys by using mobile phones has been developed. Surveys conducted by mobile phone reduce the cost and time involved in data collection, data entry and analysis. This tool is ideal for conducting surveys in distant locations like Bihar and Orissa.
- 6 **Consultancy** - Over the last decade of operations Healing Fields has acquired strong sector knowledge and domain expertise. HFF harnesses this expertise in consulting other organizations in similar kind of work.

**Box 1****How Raghotampally got its toilets**

A survey conducted by the Health Leaders at Raghotampally village in Ranga Reddy District of Andhra Pradesh revealed an urgent need for basic sanitation and toilet facilities in most villages. It was also found that about 70% of families were willing to participate in the sanitation drive and contribute money for the construction of toilets. Government funds available under the National Rural Health Mission for building toilets in villages were routed with the help of the Block Development Officer to cover the rest of the cost.

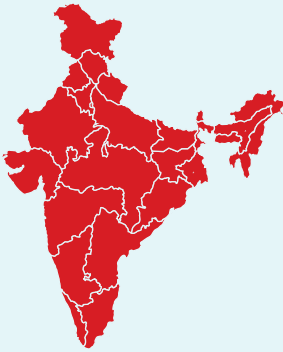
Community mobilization was achieved through a series of awareness programs in the village. A street play focusing on toilets and sanitation was presented by a team of our Health Leaders. Although the minimum contribution per family for construction of toilets according to the NRHM scheme is Rs. 300, most families contributed more in order to improve on the basic structure. The contribution per family ranged between Rs. 300 to Rs. 4000, with the average contribution being Rs. 2000. The village Sarpanch also participated actively in this venture by taking up the responsibility of supervising the construction done by the local masons. Now 100% households in this village have toilets.

### → 6.1.3 APOLLO CLINICS

The Apollo Clinic is committed to providing consistently superior quality health care services to address the day-to-day health care needs of the family to maximize convenience and comfort. It is an integrated model and offers facilities for specialist consultation, diagnostics, preventive health checks and pharmacy, all 'under one roof'. The Clinic also pioneers a range of value added services such as second opinions from a panel of leading experts through tele-medicine and counseling on various lifestyle parameters.

#### **Delivery: India's organized health care opportunity**

The Apollo Clinics initiative strives to fill this market-need through a franchise based approach. Of the estimated USD 2 Billion market, only 8-10% is catered to by organized players. The rest is all un-organized. However, the



**Vision:** Apollo Health and Lifestyle (AHLL) is headquartered in Hyderabad. It was founded in 2002 with the aim “to bring healthcare of international standards within the reach of every individual.” To achieve this, AHLL, is establishing a large network of The Apollo Clinics across the country with currently over 60 clinics operational all over India.

**Impact States:** Pan-India

**Impact Domain:** Walk-in clinics for day to day preventative and curative care

#### Key features of the model

- Decentralized and efficient delivery model
- Single window concept for all healthcare needs

organized market is growing at an annual rate of over 30% according to Amit Mokim, the head of the Health Care practice at KPMG (Business Standard, 2012). There are over 200,00 outpatient clinics in the country, most of which are run by doctors-turned-entrepreneurs who run their clinics out of their homes or small outpatient clinic facilities. Less than 1% of these clinics and less than 10% of India’s pharmacies and diagnostic service providers are branded by a chain or large network. The Apollo Clinics’ franchise offers a solution and answer to a large market opportunity.

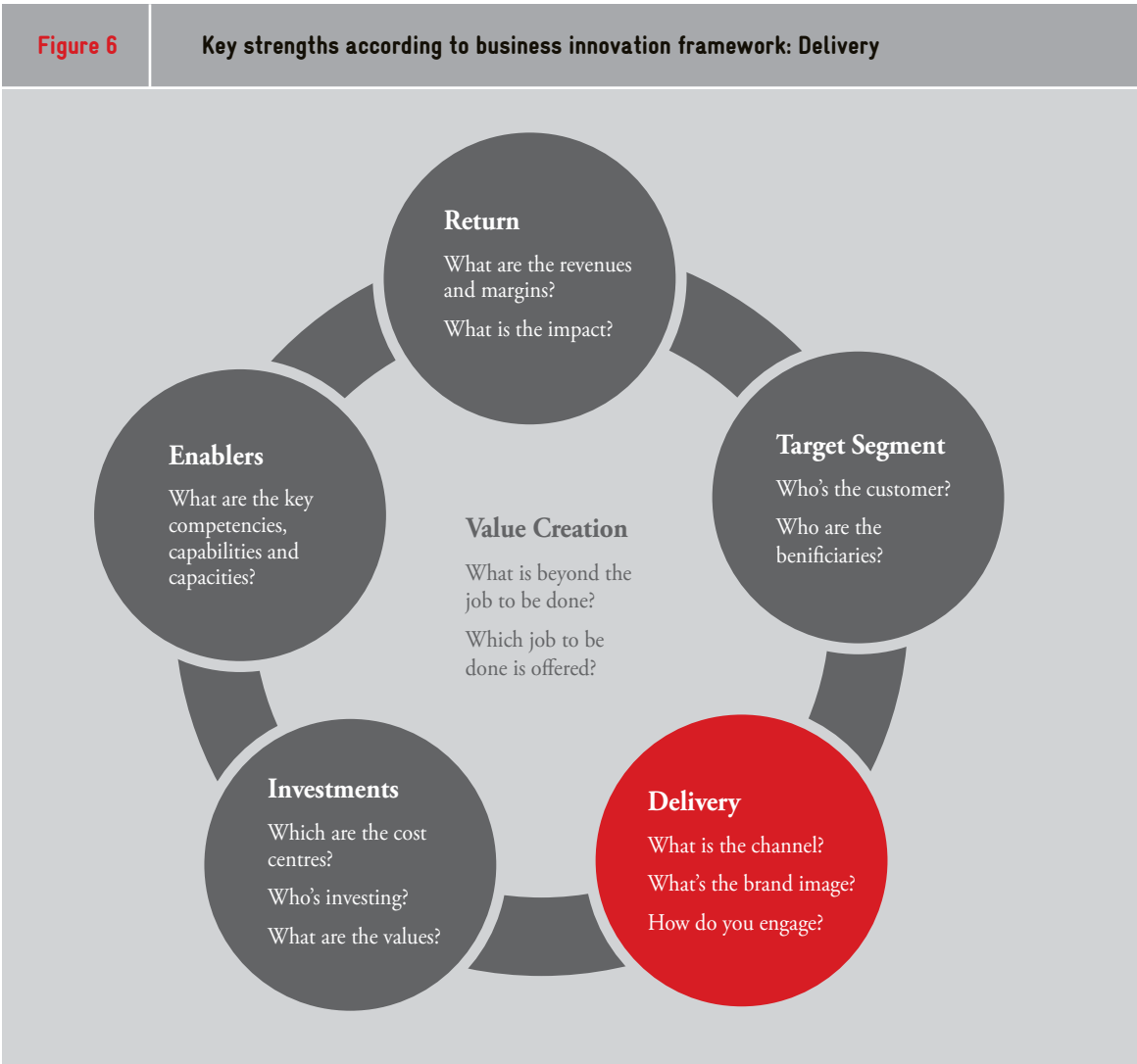
Apollo is arguably the biggest brand in Indian healthcare today. With over 35 hospitals and a chain of pharmacies in every city, highly reputed specialist doctors and an insurance vertical, the brand has the perception of offering quality service through all its businesses. This sort of brand has provided significant advantages to the Apollo Clinics Venture which can leverage this brand to increase footfalls every time it opens a franchise in a new location.

Apollo’s large chain of hospitals and network of specialist doctors allows patients at the Apollo Clinics to seek referrals and even use tele-medical facilities for consultations with specialists. Access to these specialist doctors has been a key enabler in the success of the model, without which the franchise may have struggled to expand.

The Apollo Clinic is an integrated model and offers facilities for specialist consultations, diagnostics, preventive health checks, and 24-hour pharmacy all under one roof. The Clinic also provides a range of value-added services such as second opinion from a panel of leading experts through tele-medicine and counseling on various lifestyle parameters (Patro S., 2009).

The Clinic Model has been designed such that each unit generates revenue for the other. Pharmacy generates walk-in customers, and this in turn result in increased consultations. Consultations feed diagnostics. Similarly, health checks feed into increased consultations and diagnostics. Finally, revenues are also generated by referrals to Apollo Hospitals by the consultants. The Apollo Clinic model does not seek to replace the family physician outfits but rather, complement them.





Pricing of services in the Clinics differs from one location to another. Once a region is finalized for setting up a Clinic, AHLL conducts a study on the best existing service providers in that region. The tariff structure of the Apollo Clinic is then benchmarked against that of these service providers. Accordingly, the Apollo Clinic tries to offer its services at as low a premium as possible, the objective being to offer significantly superior service at a competitive price.

**Scaling Challenges (Narasimhan T N, 2012)**

A franchise-based retail venture faces two major roadblocks—building a brand that can catch the eye of a target audience and then bringing the customer to the location where they can sell them a good or service. In Apollo's case, half the work is done since the hospital group already has a well known brand. Bringing in customers however, remains a challenge. The franchise aims to capitalize on the high urban density of India's tier 1 and tier 2 urban centers but also has to deal with sky-rocketing rents that are putting pressure on the organization and limiting expansion.

A second and crucial challenge is the shortage of qualified man-power to run the clinics. Getting the right people in the hospital business is infinitely more crucial than in most other kinds of business, considering that a hospital deals with human lives on a constant basis and can suffer potentially crippling liability issues.



AHLL was mandated to set up 250 clinics in the first 5 years but fell far short of these goals, setting up only 50 clinics in the same time frame. The pressure this placed on the operating model resulted in a larger dependency on the initial licensing fee paid by a franchisee to start operations. Conversion rates from interest to becoming a franchise remained low despite heavy advertising. In the first 5 years conversion rates were less than 5%.

In addition, the staying power of existing franchises was found to be lower than expected. Part of this had to do with franchises not acquiring the appropriate licenses for setting up the Apollo Pharmacy at the clinic and part of it had to do with the high overhead costs associated with remaining a franchise. The costs of maintaining the facility to the highest standards of cleanliness and state-of-the-art facilities were over par in comparison to the revenues being generated. A key lever in the model, access to the specialist doctors at Apollo Hospitals for consultations was also called into question. Consultation fees were often too high for patients coming to the clinic. The reason for this was the way Apollo Hospitals manages its Doctors. Doctors operate, not on a fixed salary but on a revenue sharing model meaning the Hospital and Apollo Group has minimal control over the Doctors and their consultation charges. Reform in this area will help draw larger footfalls and aid the expansion of both the Hospital and Out Patient Clinic business.

In spite of these challenges, the Apollo Clinic is a franchise-based model with tremendous scope for replication and expansion. For the moment expansion has been cautious and organic. With changes to the tariff structure and a push towards smaller towns that are in urgent need of such services, the Group could see more profitability from the business as well as expand a model that can provide all outpatient care services ‘under one roof’.

#### → 6.1.4 Arogya Parivar



**Vision:** To improve healthcare access for the underserved millions at the ‘bottom-of-the-pyramid’ using a social business approach

**Impact States:** Pan-India

Novartis set up Arogya Parivar, a rural healthcare initiative, as a pilot in two states in 1997. Arogya Parivar is based on the four pillars of awareness, adaptability, availability and affordability. These principles work in an integrated way to ensure long-term impact, and make comprehensive healthcare available in rural areas. The medicines include anti-TB drugs, antibiotics, anti-infectives, anti-diabetics, branded generics, over-the-counter cures for coughs, colds, allergies, diarrhoea and calcium deficiencies. Products also include non-steroidal anti-inflammatory agents, anti-fungal and anti-anxiety treatments. It combines social entrepreneurship with corporate social responsibility to specifically address the health needs of rural India while providing opportunities to expand business in an innovative and responsible way. It employs a combination of techniques used by pharmaceutical and consumer goods companies and its fundamental innovation rests on applying a marketing mix based on the “4 As” – Awareness, Acceptability, Affordability and Availability – adapted to low-income markets.



**Key features of the model**

- Paragon for CSR contribution by a pharma company (Novartis)
- Inclusive delivery model with health Educators recruited from among the villagers

**Figure 7** Key strengths according to business innovation framework: Delivery



**Delivery: De-centralized FMCG approach to market**

**Awareness:** Arogya Parivar conducts health education programmes at the grassroots level with the help of Health Educators recruited from among the villagers themselves. Educators share information on preventive health measures and educate the community on the need for and importance of good health.

**Adaptability:** The therapeutic area portfolio is customised as per the local disease burden. All communication including that on product packs is adapted to local conditions.

**Availability:** Strong links with doctors ensure last-mile availability and go far beyond traditional pharma practices which focus on doctor detailing. The extended supply chain reaches out to the local pharmacy in the village.

**Affordability:** Innovative solutions, strong branding and local resources make a difference. Since villagers often perceive medical care as being expensive and inaccessible, medicines are made available in small packs at affordable prices.




Arogya Parivar is organized around a light central marketing and planning team responsible for creating materials used in the field: leaflets, posters, training manuals, mini movies for awareness, translation in local languages. It goes beyond simple promotion to the doctor to creating awareness among the rural population and finally reaching out to every patient for drug compliance. Field operations are structured into independent cells, each covering a radius of approximately 35 km or 20 miles. Each cell is managed by a supervisor, assisted by a few health educators whose main role is to raise disease awareness among the people including prevention and treatment, refer patients to doctors, brief physicians about the program and meet patients to ensure patient completes prescribed treatment.

**Returns: Reaping results**

Arogya Parivar has enhanced access to medicines for close to 50 million people in 10 Indian states covering 30,000+ villages with 11 health programs: tuberculosis, skin and gynecological infections, diabetes, micro-nutrients during pregnancy and childhood, intestinal worms, acid reflux, cough and cold and allergies. People covered is expected to touch 100 million (25% of people at stake) by 2011. In 2010, there were 250+ Arogya cells covering 189 districts across 10 states in India, including Uttar Pradesh, Uttaranchal, Bihar, Rajasthan, Gujarat, Maharashtra, Chhattisgarh, Andhra Pradesh, Tamil Nadu and Karnataka offering improved healthcare access to almost 50 million people. With 11 therapeutic applications to address the rural/local disease burden, Novartis in India has come up with special drugs and packaging to meet the needs of this growing market. For instance, the company has developed a WHO-approved ORS + Zinc anti-diarrhoeal formulation in affordable sachets, and flavor. What makes it extra special is that the model can be replicated in other geographies facing similar healthcare challenges.

➔ **6.1.5 Vaatsalya**



**Vision:** To provide low cost primary and secondary healthcare to semi-urban and rural India

**Impact States:** Karnataka & Andhra Pradesh

Vaatsalya (Vaatsalya, 2013) is India’s first hospital chain focused on Tier II, Tier III cities and rural India. It is founded and led by Dr. Ashwin Naik, Dr. Veerendra Hiremath, Dr. V. Renganathan, Rocky Philip and Bheemana Ganti and is working in the southern states of India for nearly the past ten years. The social enterprise is built on the premise that while 70% of India’s population lives in semi-urban and rural areas, majority of the healthcare facilities are in urban/metro areas and not accessible to these families. Vaatsalya is bridging this gap by building primary and secondary care hospitals in semi-urban and rural areas. (Tier II & Tier III towns). With insurance schemes by state and central governments increasing from 12% in 2007 to 24% in 2012, Vaatsalya is also trying to extend healthcare to the 30% population at the bottom of the pyramid. The impact is high because Vaatsalya has succeeded in increasing accessibility (thereby decreasing distances travelled) and affordability through appropriate healthcare services with emphasis on four specialties: General Medicine, Pediatrics, Gynecology and General Surgery (PPGS).



**Key features of the model**

- Disciplined processes and streamlined operations
- Strong control on quality of service

**Figure 8** Key strengths according to business innovation framework: Target segment



**Delivery: Productized healthcare built on streamlined processes and systems**

In the FY April 2011 – April 2012, Vaatsalya served approx. 400,000 patients across 17 locations and employed 1500 people. The success of the hospital stems from the disciplined processes and streamlined operations. The inherent reliability and replicability built into the business model also ensures a rapid scaling potential and a strong control on the quality of service.

Vaatsalya hospitals are 50-70 beds in size, with neonatal intensive care facilities, operation theaters, maternity rooms, intensive care facilities, a mix of general rooms (dormitory style), and private/semi-private rooms. In addition there is a 24/7 pharmacy, basic laboratory and diagnostics facility. They are professionally managed and run and located in small towns, which is a marked deviation from the family run nursing homes presently available. Most of the processes and incentives used attract good quality, ethical and entrepreneurial doctors



to small towns and villages thereby creating the healthcare ecosystem that encourages growth. The processes followed adhere to global standards of business management and delivery with the hospital employing evaluation tools like the balanced scorecard, KRA evaluation and conducting regular customer feedback sessions.


Over the next three years, Vaatsalya plans to open and operate over 30 hospitals across the four states – Karnataka, Andhra Pradesh, Tamil Nadu and Maharashtra and is expected to cross revenues of over Rs. 1 billion (USD 10 million), providing crucial healthcare to over 100,000 patients a year.

## 6.2 Specialized Care

A significant growth has been seen in business model oriented specialized care enterprises. This is because these enterprises can employ a very high degree of productization and operational standardization making their service delivery more cost effective and of high quality. The eye-care sector has seen the creation of a number of enterprises in the last five years – notable among them being the Aravind Eyecare Hospitals in Tamil Nadu and Akhand Jyoti in Bihar. This domain is also attracting a huge amount of investments as the risks are relatively low and the demand is very high.

The specialized care segment also includes diagnostic centers that work on a number of ‘new’ or lifestyle oriented diseases like diabetes, hypertension, obesity etc. where the treatment is standardized and also considerably mechanized. This also allows entrepreneurs in this sector to concentrate on the business model and process optimizations that help the enterprises replicate themselves and also scale rapidly.

### ➔ 6.2.1 Akhand Jyoti Eyecare



**Vision:** By the year 2020 nobody with a curable condition remains blind in Bihar

**Impact State:** Bihar

**Impact Domain:** Eye-care Service Delivery

Akhand Jyoti Eye Hospital (Akhand Jyoti, n.d.) is a project of the Yugrishi Shriram Sharma Acharya Charitable Trust (YSSACT) to provide low cost eye-care to the rural poor in Bihar. 70% of their services are free of costs and the focus is primarily on medically blind patients. Over the past 8 years they have grown from a 20 bed hospital conducting 500 cataract operations a year with a staff of 27 to a fully modernized 300 bed super specialty hospital with a staff of over 200 conducting more than 55,000 cataract operations a year.

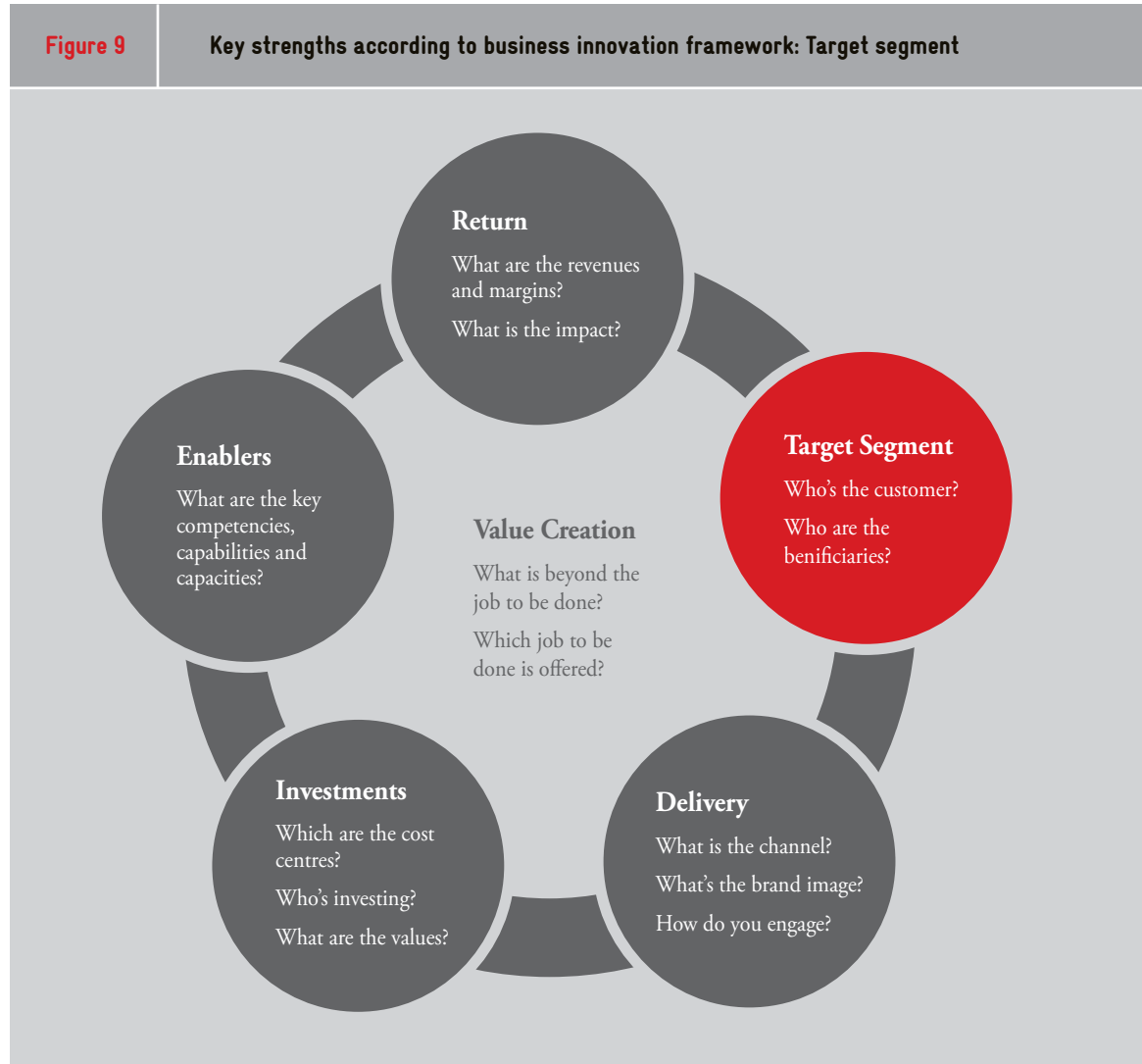
Akand Jyoti Eye Hospital was founded by Yugrishi Shriram Sharma Acharya Charitable Trust with the mission of eradicating curable blindness amongst the rural masses by providing accessible, affordable, sustainable, quality curative and preventive eye care services. It is currently the largest eye hospital in Bihar. This thriving hospital is



extremely unique as it began its life as a make-shift operation in a temple complex. The dedicated team raised enough funds to construct a hospital in a rural village called Mastichak. By 2006 surgeries commenced, and in no time at all patients were streaming through the doors. In 2010-11 the hospital performed 37,000 sight restoring surgeries totally free of charge for the poor. And they have managed all this without any grid electricity. Currently, the hospital runs on 24-hour generators.

**Key features of the model**

- Disciplined processes and streamlined operations themselves
- Strong control on quality of service



**Target Segment: Serving the underserved**

There are 1 million blind people living in the state of Bihar out of which 560,000 are blind from cataract; this is one of the highest concentrations of cataract blind people in the world. After years of neglect, Bihar has ended up with an enormous backlog of which the majority is curable. 100,000 new cases add to this shocking

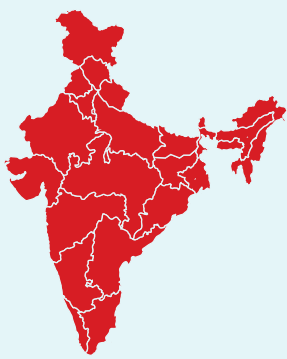


number every year. Akhand Jyoti Eye Hospital started to serve to this community and has been working with a very inclusive business model that strives to reach the furthest points of the state. The model is very community specific and was developed after a detailed field assessment. It utilizes local resources and employs local people in its value chain as far as possible, thereby also generating employment and livelihood in this backward state.

The hospital also makes use of hundreds of volunteers, a very unique feature in a specialized eye care health enterprise model. They hold outreach eye camps in incredibly remote areas where eye examinations have never been conducted before. When the team reaches the chosen spot the screening process begins; those patients in need of surgery will be given a date when the vehicle will come and collect them to take them to the hospital. Patients will stay for two nights at the hospital before being dropped back to their village with their sight restored. The streamlined processes and operations ensure that the costs are low and the penetration is high.

Over the past five years the revenues have steadily grown on the back of good quality and efficient services but the hospital still continues to provide free eye-care to the poor with nearly 40% of its business still provided free of costs. It employs a delicate cross subsidization model where the paying patients pay a little more to take care of the free operations and services. The leadership is also very strong and the hospital enjoys incredible grass root support.

## ➔ 6.2.2 Thyrocare



**Vision:** Bring preventative diagnostic services to all Indians at a price they can afford and with quality they can trust

**Impact States:** Pan-India

**Impact Domain:** Preventative diagnostic tests for the masses

Founded in 1996 by Dr. A Velumani, Thyrocare Technologies Ltd is a numerical pathology venture, focused on thyroid testing. It also caters to critical diagnostics services related to growth metabolism, cancer, infectious diseases and infertility, among others. It follows a centralized laboratory (single location) testing model with a nationwide franchise network in India for fast-track sample collection and result delivery. It operates out of its headquarter and Centralized Process Laboratory (CPL) in Navi Mumbai, India.

Thyrocare (Thyrocare, n.d.) is a leader in the market for diagnostic services in India. With over 20,000 service centers and 600 collection hubs across the 1000 cities and towns in India, a state of the art large-scale centralized laboratory, and its adoption of best practices in bar-code based logistics, Thyrocare is bringing quality preventative care at affordable rates to millions across India. Growing at an annual rate of over 50% the company is already the largest provider of Thyroid tests in India. The company focuses on immunoassays largely and wellness profiles as a specialization since these tests and technologies that require higher-end automations and analyzer-based testing can be delivered from their large-scale central laboratory. According to a CII and Cygnus report, the Indian pathology sector is worth about USD 1 billion and is growing at 15 per cent per

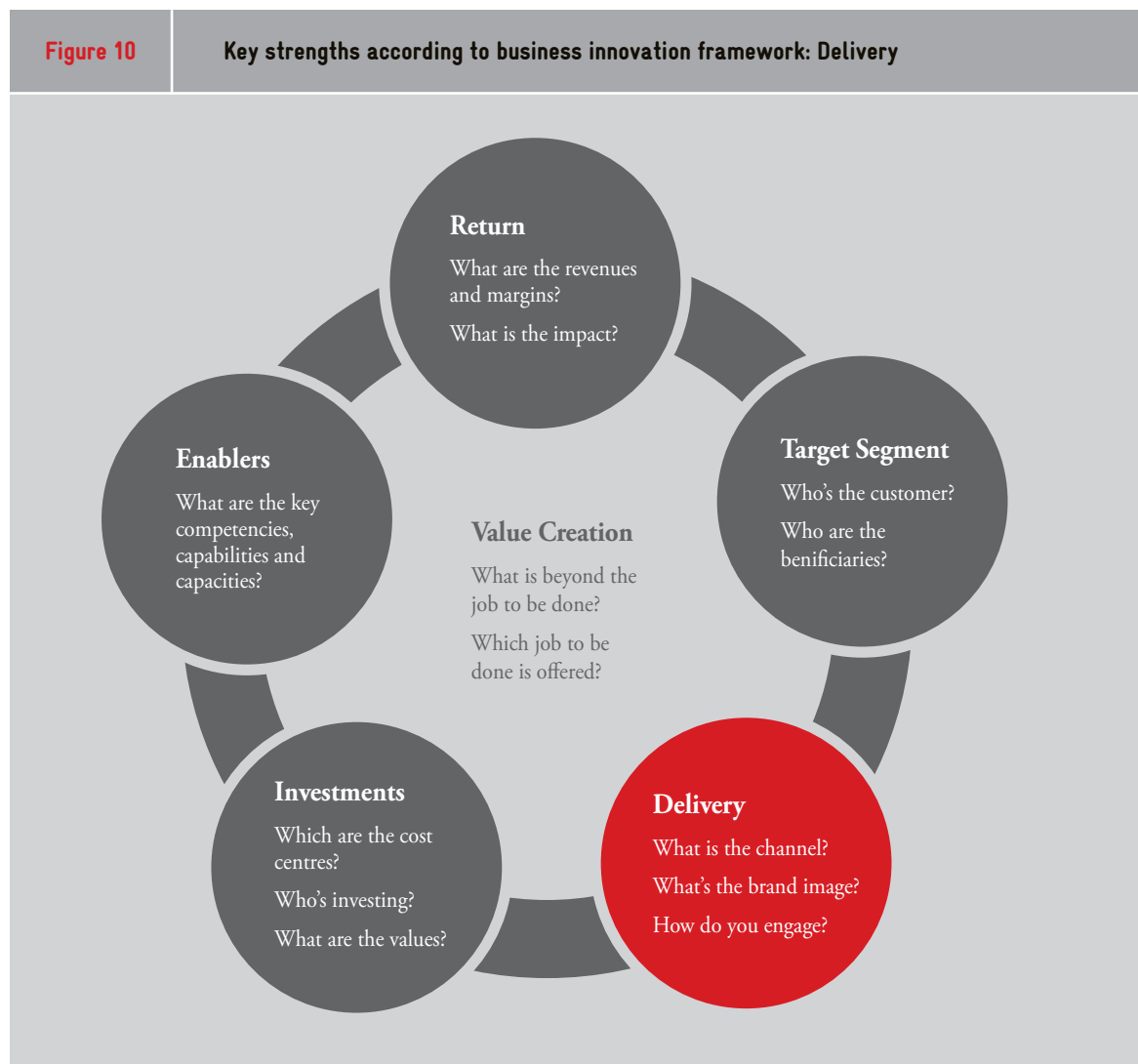




annum. Dr. A Velumani, MD and Founder, Thyrocare Technologies (Velumani, 2011) states, “For every diagnosed patient, there are nine undiagnosed patients and since most others are busy in and focused on the sick care market, it is worthwhile to work on preventive care. If possible, we would love to lead that segment.”

**Key features of the model**

- Concentration on a niche market and high level of specialization
- High quality control
- Innovative franchise model for expansion



**Delivery: One lab, one brand, one quality**

Thyrocare’s dual value proposition is in its extensive reach and its quality of diagnostic testing services. Realizing that distribution and quality control were the main challenges of the industry, Thyrocare adopted a 100% franchisee model, setting up a network of outsourced collection and service centers across the country by working with local entrepreneurs. The approach allowed Thyrocare to focus on its strength: sample testing and



laboratory management - the approach of “one laboratory, one brand and one quality”. Maintaining a central laboratory, Thyrocare was quick to get the necessary accreditation from both NABL and CAP, making it one of the only labs in India to have both accreditations. The lab, which occupies an area of 50,000 square feet is equipped to handle 5,00,000 investigations on a daily basis. In order to match the lab’s capacity with adequate distribution and collection mechanisms, Thyrocare expanded its franchise model to meet the capacity of the lab. In combination the two initiatives drove volumes, helping drive down logistical costs and in turn the price paid by end-customers. This combination of quality assurance and competitive pricing has allowed Thyrocare to continue expanding to become India’s largest thyroid testing service providers. Thyrocare’s is the only 100% franchisee-based model in India’s diagnostic healthcare market, and currently the fastest growing business in the sector, expanding at an annual average of over 50% for over 10 years (Express Healthcare, 2008).

Thyrocare’s model relies heavily on Logistics (CYGNUS Business Consulting and Research, 2009). Processing in excess of 1 lakh blood samples per day at a single location is no easy job. In order to solve the problem of tracking samples and disbursing results to end-customers, Thyrocare adopted a 100% bar-code based approach. Starting off with zero automation in logistics over 15 years ago, today Thyrocare has a fully automated system. It is an industry leader in this respect and the first company to bring bar-coded serum vials (BSV) technology to India. Previously all blood was stored and transported in test tubes, ampoules, beakers and flasks. Each and every sample is identified by the barcode on the vial, which once placed on the automated instrument is automatically identified, along with the test to be performed, and simultaneously the output data is synchronized with the software and directly uploaded onto the Thyrocare database. This ensures error-free reporting and helps in curtailing the time consumed or lost in pre-analytical procedures. BSV, thus makes logistics cheaper and faster resulting in less time between sample collection and report of results to the customer. The adoption of this technology has been a key enabler for Thyrocare’s volume based business model – which requires high volumes to stay cost-effective and competitive. To support the sheer size of its operations, Thyrocare laid emphasis on building a strong IT foundation from the start. Thyrosoft, an indigenous software platform built to support Thyrocare’s vast Laboratory Information System is handled by an in-house, dedicated and experience IT team. The software was developed by a cross-disciplinary team of pathologists and software professionals with a focus on patient needs. Together it’s strong IT backbone and nearly 100% automated logistics model cut errors and reporting times, ensuring smooth operations on a large scale (Thyrocare, n.d.)

Thyrocare’s business model is unique in its sector. While other diagnostic service providers looked at a merger and acquisition-based business model, Thyrocare evaluated the costs of acquiring smaller laboratories as being too high. Instead the business model focused on doing what they do best. Employing a hub and spoke model of “**One laboratory, many collection centers**” allowed for rapid expansion. Thyrocare ensures that all the entrepreneurs among it’s franchises, many of whom might not be specialists, are trained jointly once a year through a week-long training program. These collection centers provide door to door services, expanding Thyrocare’s reach and branding in towns and cities. Realizing the importance of entrepreneurs in sustaining Thyrocare’s own operations, it adopted a truncated revenue model. On average approximately 25-30% of revenues for any test are kept by Thyrocare while the remaining 70-75% is given to the franchisees. This allows franchisees to better manage their working capital and expand their own reach in their local area – an approach that allows Thyrocare to continually expand volume of sample collection as a business driver.

### → 6.2.3 Dr. Mohan’s Diabetes Specialities Center

Founded in 1991 by Dr. V. Mohan, internationally acclaimed diabetologist, and his wife Dr. M. Rema, Dr. Mohan’s DSC (Dr. Mohan Diabetes Care, n.d.) started with the purpose of providing state of the art, efficient and comprehensive care for diabetes patients at affordable costs. Within a span of 18 years, Dr. Mohan’s DSC has grown into an international centre of excellence in diabetes with over 3 lakh patients registered at the centre which is a testimony to its success. The center is a unique model in India, equipped to treat all diseases caused by diabetes under one roof. The main centre at Gopalapuram, Chennai, now has 75 beds housed in a six-storey

building with outpatient, in-patient and intensive care facilities for diabetes and associated complications. Other branches are located at Anna Nagar and Tambaram in Chennai, at Vellore and at Indira Park in Hyderabad. DMDSC is run by a team of 900 dedicated personnel including 21 consultant diabetologists. It has been designated as a World Health Organisation (WHO) collaborating centre for non-communicable diseases- 'prevention and control' as well as an International Diabetes Federation (IDF) Centre of Education.



**Vision:** Dr. Mohan's Diabetes Specialties Center's (DMC) mission is to be a center of excellence in diabetes care. The organization's vision is to provide high quality, affordable healthcare to diabetes patients across India and other parts of the world, as well as be a center of knowledge dissemination and training to improve the state of diabetes care and spread awareness.

**Impact States:** Andhra Pradesh, Tamil Nadu, Karnataka and Kerala

**Impact Domain:** "Total diabetes care under one roof"

#### Key features of the model

- Focus on niche segment of healthcare (diabetes)
- Partnerships with other organizations like Indian Space Research Organization

#### Target segment: silent epidemic

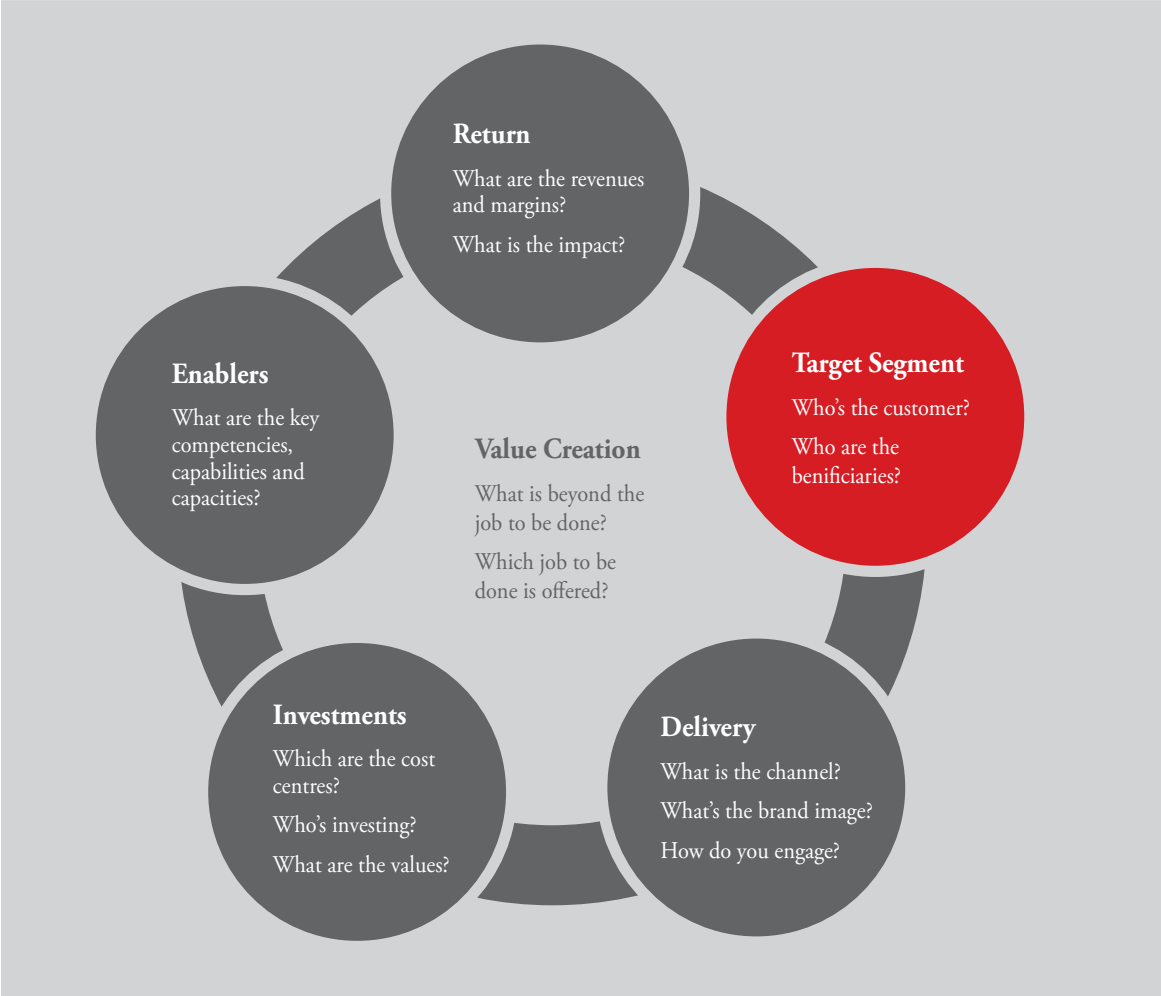
Diabetes mellitus is growing in epidemic proportions and rapidly becoming an important cause of morbidity and mortality worldwide. In developing countries like India it often disproportionately affects the poor, and young in the peak of their lives. The International Diabetes Federation (IDF) has reported that India currently has 51 million people with diabetes and these figures are predicted to increase to 87 million by the year 2030. An ageing population, globalization and economic development leading to increasing obesity rates are responsible for the growing epidemic of diabetes in India. To complicate matters, diabetes is traditionally known as a 'silent disease', exhibiting no symptoms until progression to late stages of complications due to organ damage.

The treatment of diabetes at DMDSC follows well-established protocols with ample scope for individualization depending on the type of diabetes, whether the patient has other active medical problems, whether the patient has complications of diabetes, and age and general health of the patient at time of diagnosis. Care is delivered by a diabetes management team comprising Diabetologist, Ophthalmologist, Cardiologist, Nephrologist, Neurologist and Nutritionist. Since all care is provided under one roof, the patient receives comprehensive care at DMDSC. Similarly the work load is divided among many cadres of staff, with the nutritionist sharing the major work of communicating to the patient. On any given day a consultant may see 20 to 30 patients.

Quality control is given great importance at DMDSC, as it is handling about 300 outpatients a day and has to provide quality care to all. To prove its quality management processes, DMDSC has gone in for ISO certification in 1998.



**Figure 11** Key strengths according to business innovation framework: Target segment



The lab facilities have been accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories). As a part of this accreditation, 19 standard protocol manuals have been developed for different departments. Processes across the hospital are standardised as per these manuals and the quality manual is updated once in three months. A dedicated quality control department with four staff and fifty internal quality auditors is responsible for monitoring the quality across the system. They conduct internal quality audit once in four months where the audit team checks the compliance in accordance to standards. If any non conformity is found, report is given to both the respective department and quality department. The respective department has to give the explanation for the non conformity and rectify it. All these non conformity reports are discussed in the management review meeting for further follow up and action. The quality department also ensures that each department sets their “smart objectives” and it is evaluated once in six months against the performance. Each department is evaluated against external customer feedback, internal customer feedback, training assessments and documentation error. Clinical quality is monitored through assessing mortality rates and surgical complication rates. DMDSC understands that quality standards continue to evolve, influenced by technological innovation and changing patient expectations. To monitor that evolution, regular feedback is collected from patients and analysed. A good customer feedback management system is in place to respond to all the customer complaints regularly


**Innovative partnerships to reach the rural poor**

Currently DMDSC supports the poor and needy patients through DIRECT, the non-profit charitable wing of

DMDSC. It conducts educational activities on diabetes for health care personnel (general physicians), for the public and also organizes large scale free screening for diabetic patients through DIRECT. Apart from this, with the state health insurance schemes in Tamil Nadu (Kalaingar Health Insurance Scheme) and other state-level schemes, DMDSC believes more people will be able to afford their services. The organization started Sai Rural Diabetes Centre in 2006 at Chunampet situated 100 km away from Chennai. This project was initiated to test and develop a replicable model for providing total diabetes care in rural areas where the prevalence of diabetes is increasing rapidly, with an estimated 20 million people in rural India suffering from the disease. The rural centre was started in collaboration with World Diabetes Foundation (WDF), National Agro Foundation and the Indian Space Research Organisation (ISRO).

The project used a mobile telemedicine van fully equipped with diagnostic and primary care equipment to reduce the costs of reaching the rural population. Over 25 thousand people (above 20 years of age) from over 40 villages have been screened for diabetes and its related complications, especially eye and foot complications (87% of the rural population in the area). Those identified to have sight threatening diabetic retinopathy are treated free of cost at the main centre. With the support from WDF, tests and specialized treatments are done free. Thus effective strategies for community based diabetic screening in a rural setting were evolved. DMDSC is now working on using mobile telemedicine to replicate the initiative in other rural locations for primary screening of patients. Under DIRECT a unique Juvenile Diabetes Sponsorship Scheme was introduced to provide free treatment and lifelong free insulin for children with Type 1 diabetes. DIRECT attracts donations from philanthropists and socially minded organisations to support these children with type 1 diabetes who need to be under medication throughout life. DMDSC conducts free diabetes camps under DIRECT once a month in Chennai at Raja Annamalai Puram and Tirumangalam. Around 3,200 patients receive free consultation, check up, blood test and free medicine at these centres annually. Apart from this, DIRECT conducts free diabetes detection camps at various parts of Chennai and surrounding areas. Around 800-1,000 patients are screened free of cost every year along with the support from a philanthropic organisation, the Satya Sai Organisation, Tamil Nadu. Those who are detected with diabetes are referred to DMDSC for free investigations and treatment.

## → 6.2.4 Aravind Eye Care



**Vision:** To eliminate needless blindness

**Impact States:** Southern India

**Impact Domain:** Aravind Eye Care has grown to become the largest and most productive eye care facility in the world. It is sometimes referred to as the 'McDonalds of eye care' for its wide spread and streamlined processes.

Aravind Eye Care (Aravind Eye Care, n.d.) provides eye care to patients in India through 5 owned hospitals, 4 managed hospitals, a training institute, eye bank, research lab, drug and eye care equipment manufacturing arm (Aurolab), and an international training facility (LAICO) which consults and trains eye hospitals in other developing countries. Aravind has pioneered ways to reach the poor and rural blind, providing care free of charge to patients unable to pay for care. They hold eye camps in rural villages using community workers and



local sponsor organizations to conduct widespread publicity in the villages. The enterprise (GOVEL Trust, under which Aravind Eye Care is run) was founded by Dr. Venkataswamy, following his retirement at age 58 in 1976. Presently, over 285,000 eye surgeries are conducted providing over 2.4 million persons with outpatient eye care per year at the 5 Aravind owned hospitals

- Key features of the model**
- High quality and standardized operations and patient care
  - Strong delivery model and partnerships



The basis of the Aravind eye clinics is standardization and engineering cataract surgery for high volume production. The hospital applies principles of mass marketing and industrial engineering to create a model of eye care that combines high service volumes and quality with low cost and innovation to sustainably meet the needs of patients. The Aravind system offers services that range from a simple pair of spectacles to optical oncology. The bulk of surgeries are to treat cataracts -- removing the cataract and replacing it with an artificial intra-optical lens. The

assembly-line approach is most evident in the operating room, where each surgeon works two tables, one for the patient having surgery, the other for a patient being prepped. In the operating room, doctors use state-of-the-art equipment such as operating microscopes that can swivel between tables. Surgeons typically work 12-hour days, and the fastest can perform up to 100 surgeries in a day. The average is 2,000 surgeries annually per surgeon -- nearly 10 times the Indian national average. Despite the crowding and speed, complication rates are low, the system says. Outside the operating rooms, conditions are as spartan as the tables at a fast-food restaurant: Often, only a straw mat on a ward floor for postsurgical recovery. Patients who pay more than the basic USD 40, about 30% of patients, can receive cushier treatment such as private rooms for extended recovery, and hot meals.

### **Delivery – Inclusive business model & development of the ecosystem**

One secret of Aravind's productivity is its well-trained battalion of ophthalmic assistants. These are young village women who've undergone two years of training to take on the routine tasks associated with eye surgery. This allows Aravind's doctors to focus on diagnosis and the surgical procedure itself. It's also cost effective: instead of two doctors (the standard in the field), each surgery is performed by one doctor with two assistants standing by.

Also, Aravind Eye Care has invested in a number of segments in its value chain to ensure the most optimal costs. Key elements essential for this have been added – for example, a dedicated factory for producing lenses, a training centre to provide key skills, specialist ophthalmic research centres, and an international eye bank. Of particular importance has been the Aravind Eye Camp model which takes the system out to rural locations, offering advice and diagnosis and feeding patients into the core hospitals where the high productivity model can treat them. This brings an element of preventive medicine into the system – by identifying early symptoms, particularly amongst children, relatively low cost measures (such as corrective glasses) can be implemented. There is now an extensive education programme linked to the camps which reach out to rural communities. (For example, in 2002 around 70,000 children were screened and 3000 given glasses to correct refractive errors).

Another important element in the system approach is the attention given to training to ensure an adequate supply of key skills. 900 ophthalmic assistants are taken on and trained each year to support the specialist doctors, whilst other skills such as counselling and education are also developed via dedicated training courses.

Central to the success of the model have been the economics (Dr. Bhupinder Choudhury, 2012). The key is in the volume – around 200,000 patients are treated each year, based on the high volume/low margin kind of business model which Henry Ford used on the Model T and which now drives the low cost airline industry. Inevitably the approach involves rethinking the underlying model. In a conventional Western hospital an eye operation would typically take 30 minutes while the Aravind system needs only 10. This high productivity is achieved by significant process innovation driven by close analysis of value adding time. For example, each surgeon works on two operating tables alternately, and is supported by a team of paramedics to carry out less-skill dependent aspects such as washing the eye, putting in sutures, giving anesthetic injections etc. 70% of activities are carried out by a team of 4 nurses supporting the surgeon, 2 assisting directly and 2 acting as running nurses bringing fresh instruments from the sterile area. Of considerable importance is the fact that this treatment is not provided at low cost by compromising on quality. A key statistic in medical care is infection rate – the Aravind system actually has better performance than many Western hospitals.

## **6.3 Product & Technology**

Probably the strongest and most apparent growth in this sector has been in the domain of medical devices and diagnostic instruments. This industry has also seen significant investments and a distinct focus on research and design. While some designs are technologically advanced with high capital requirements, others are quite simple and focused on rural issues and problems.



This section catalogues some of the innovative products and the contribution that they make to the society while maintaining a sustainable business model.

### → 6.3.1 Jaipur Foot



**Vision:** Provide cost effective prosthetic option to people suffering from loco-motor disabilities

**Impact State:** Global

The Jaipur foot, an innovative prosthesis invented by Mr. Ram Chandra in 1968 under the guidance of orthopedic surgeon Dr. P.K. Sethi, has provided mobility to many amputees around the world. Being inexpensive, convenient and durable it has gained widespread popularity in areas torn by strife and war like Afghanistan and Rwanda apart from India. It is primarily fabricated and fitted by the Bhagwan Mahavir Viklang Sahayata Samiti (BMVSS) (Jaipur Foot, n.d.), which is a non religious, not for profit NGO. It has seven centers in India and provides prosthesis fittings to 16,000 people and services another 44,000 annually. Since inception, BMVSS has rehabilitated more than 1.3 million amputees and polio patients by fitting / providing artificial limbs (Jaipur Foot variations), calipers, and other aids and appliances, mostly in India and additionally in 26 countries across the world.

A large part of the success is attributed to the organization’s value system and customer centric management practices (Bottom of Pyramid, n.d.). The procedures for client admission, treatment and prosthetic fitting have been kept simple. Further, patients are provided lodging and boarding facilities till the time they are given prosthetic limbs, calipers or other aids. Importantly Jaipur foot is custom fitted, and often within four hours of the patient checking in (Macke, et al., 2003).

**Key features of the model**

- Simple low costs design of product
- Partnerships with other organizations for delivery

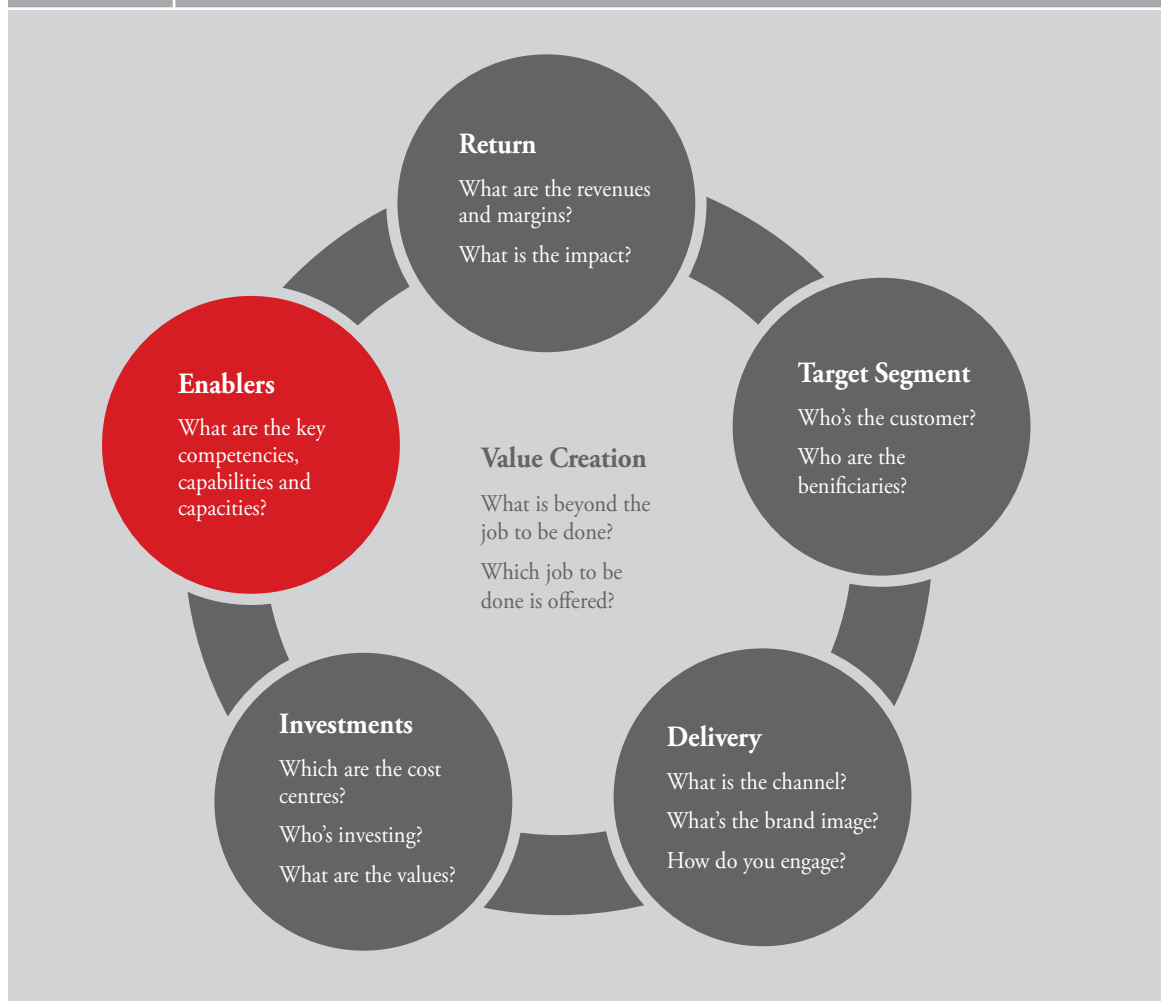
**Target segment: Cost effective alternative prosthetics**

A prosthetic foot in USA costs about USD 8,000 whereas Jaipur foot provides an alternative at just USD 30.



Figure 13

## Key strengths according to business innovation framework: Enablers



This opens it up to a huge segment of the population who has either lost a limb due to a disease (polio etc.) or accident and cannot afford the international prosthetics.

The number of people suffering from loco-motor disabilities ranges between five and six million in India alone. Of these one million people are estimated to have lost their limbs and another four million suffer from Polio. There has also been rise in road accidents and incidence of other wasting diseases, and almost 25,000 new cases get added to the population of amputees every year. Amputation, apart from being a physical loss, also affects the patient psychologically and greatly restricts his or her productivity. Hence, its economic consequences, both on patient's household at the micro-level and the economy at a larger level are adverse. This makes the fitment of artificial limbs an important health-care as well as economic and developmental issue in India.

Jaipur Foot adopts a patient centric management system to cater to its target segment.

- **Timings:** BMVSS has an open-door policy. A disabled person can visit its Jaipur centre (which receives the highest number of patients) at any time of the day or night, without an appointment. At other centres, beneficiaries can also walk in without prior appointment during the designated treatment times.
- **Registration:** At its Jaipur and other centres, patients are first admitted and then registered. This contrasts with other healthcare organisations and systems which require prior appointment and registration before the patient



is admitted. Outstation patients (along with their attendants) get immediate board and lodge facilities (free of cost) at Jaipur. For the patients, this small change is a great help.

- **On-spot services:** The services are normally provided in one go in one-three days' time, but in complicated cases, requiring more time, the patients can stay put at the centre at the expense of BMVSS until his / her need is met in accordance with medical advice. Efficiency: Although limb / caliper fittings are customized services, BMVSS has, to a large extent, introduced the assembly line in many of its processes. This is to cover the largest number of patients in the shortest time. However, while doing so, quality standards are maintained.
- **Cost:** Being a non-profit organisation, efforts are made to keep the cost on overheads and administration as low as possible. The world-renowned management consultant, Prof CK Prahalad of Michigan University, in his book *The Fortune at the Bottom of the Pyramid*, concluded after diligent analysis, that overhead and administration costs of BMVSS are just 4 percent of its total budget. This is perhaps the lowest for any non-profit organisation worldwide.

**Enabler: Strong partnerships (JaipurFoot, n.d.)**

BMVSS has forged agreements with Stanford University, USA; Massachusetts Institute of Technology (MIT), USA; the Indian Space Research Organisation (ISRO); and Indian Institute of Technology (IIT), Jodhpur, for research and development, Professors of other IITs, namely Chennai, Delhi and Mumbai, too are helping BMVSS. Further, Malaviya National Institute of Technology (MNIT), Jaipur; National Institute of Technology (NIT), Delhi; and companies such as Jain Irrigation, Pinnacle Industries, Polymedicure and Universal Medicap have agreements with BMVSS for research. Other corporates also support BMVSS. Dow Chemicals, a leading company in polymers, is helping BMVSS in improving the components of its aids and appliances. Dow, MIT and the American Society of Mechanical Engineers are working together with BMVSS to further enhance the functionality and longevity of the polyurethane (PU) foot, which is likely to rehabilitate hundreds of thousands of amputees the world over.

The Stanford-BMVSS Jaipur Knee, which is the result of research due to a formal memorandum of understanding between BMVSS and Stanford University, was hailed by Time magazine (November 23, 2009 issue) as one of the world's 50 best inventions in 2009 (Jaipur Foot, n.d.).

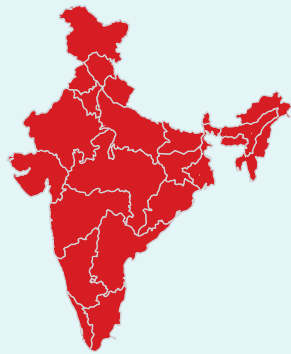
<b>Box 2</b>	<b>New foot forward</b>
<p>Tarabai Ingle has a new foot. Fitted with a wood-and-metal Jaipur Foot over 35 years ago, she now has a new polyurethane foot, lighter, easier to manipulate, better harmonised with her limb and less noticeable as a prosthetic. Close beside her at a recent camp for people with locomotor disabilities at Panvel, Raigad district in Maharashtra, Fatima Nusrat, studying for her BEd degree at SNDT University, waits for a replacement to her Jaipur Foot. "I have been physically challenged from birth, born with one limb almost non-existent while the other is completely normal," she says. "I have been wearing the prosthetic since I was about 18 months old. My first Jaipur Foot was fitted in Kanpur, my native place. I've had this one, an original from Jaipur, for about two years. Now I am looking forward to changing it to the new, more flexible prosthetic," she adds, smiling.</p>	

**→ 6.3.2 AYZH**

The AYZH Clean Birth Kit targets the "six cleans" recognized by the World Health Organization: clean hands, clean perineum, clean delivery surface, clean cord cutting and tying instruments, and clean cutting surface. The kits are sourced and assembled in India by rural women to create economic opportunities for communities living

in poverty. The packaging is biodegradable. The kit includes the following items (Maternova, n.d.):

- A sterile surface
- Sterilizing hand wipes
- Clamps for the umbilical cord
- Scalpel blade made of bamboo and handle for cutting the umbilical cord



**Vision:** Committed to save and change lives, one product at a time, making one happy woman at a time

**Impact State:** Pan-India

Ayzh is a for-profit social enterprise started by Ms. Zubaida Baig and has won numerous awards including the Echoing Green Award (2012), Ashoka Changemakers (2010) etc. and is supported by RTBI Incubator from IIT-Madras and New Economy Venture Accelerator from Colorado State University. Other than the kit, Ayzh also has additional products under development which include: a newborn kit, a post partum hemorrhage kit, and a groundbreaking sanitation and hygiene solution for women. Ayzh products are assembled and packaged by local women, creating economic opportunity in the communities it serves. Ayzh operates an innovative B2B business model, selling to health-based businesses (for-profit and non-profit) that are capable of giving Ayzh significant and scalable access to its target beneficiaries (underprivileged women).

#### Key features of the model

- Unique niche market segment addressed (pregnancy and child birth)
- Simple, easy to use product

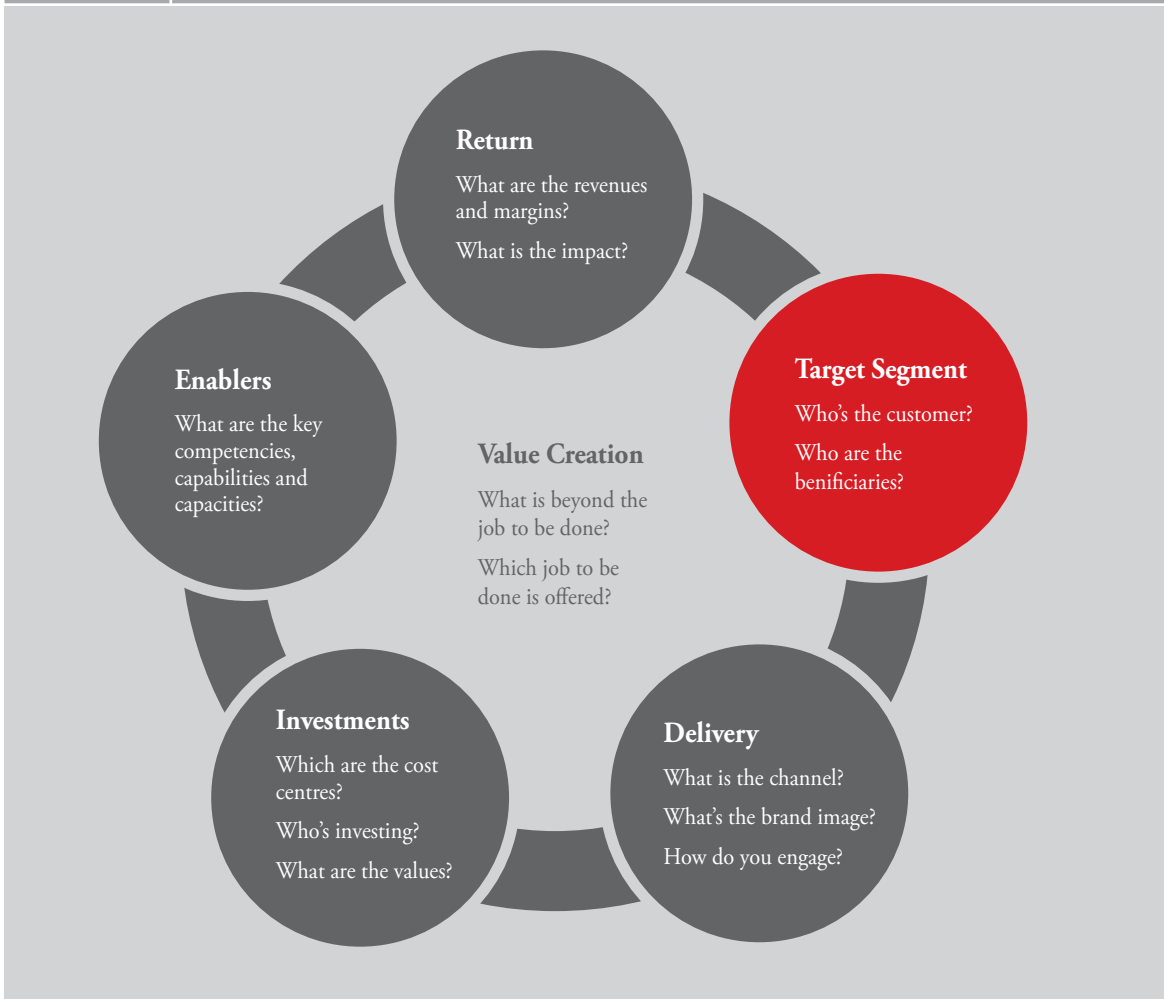
Ayzh employs women to package its first core product, JANMA components, in a biodegradable jute bag that can be reused by new mothers as a purse. Ayzh launched JANMA, a \$2 clean birth kit, to help hospitals and nonprofit organizations prevent infection at time of birth and reduce maternal and infant mortality. Headed by a woman and with woman in manufacturing, Ayzh exhibits a very unique gender inclusive organizational model. This also ensures that the products are designed in accordance with local culture, understanding and market needs and can hence sell well in the market.

Ayzh is working hard to become self sustainable. Strong rural penetration and deeper NGO partnerships are helpful. The organization has also expanded to Africa.

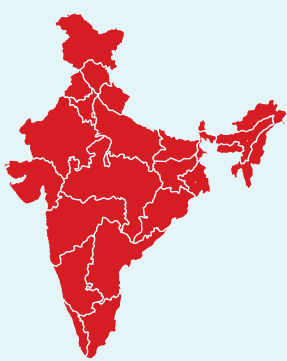


Figure 14

Key strengths according to business innovation framework: Target segment



➔ 6.3.3 Biosense



**Vision:** Noninvasive anaemia detection made accessible to all

**Impact State:** Pan-India

Biosense is a med tech company based in Mumbai, founded by a team of doctors, engineers and product designers (led by Dr. Abhishek Sen, Dr. Yogesh Patil Mr. Aman and Mr. Myshkin) determined to improve access to healthcare.

The team while working in a village found that a large population amongst women was anaemic. However due to inaccessibility and lack of roads, it was impossible for them to travel to the Primary Health Centers to get their blood samples tested. Furthermore, some did not even realize that they were anaemic and did not feel sick enough to justify the trip. This posed a huge danger to these women and was life threatening especially at the time of pregnancy. Keeping this problem in mind the team came up with a solution that would solve the problem but also be easy to distribute and also allows remote transfer of data.

TouchHb the Biosense product is a hand-held needle-free battery operated device that enables screening for anaemia and simplifies monitoring of treatment on a regular basis. It democratizes healthcare by empowering health workers with appropriate technology and enables them with actionable data. Screening for anemia and monitoring treatment are vital for the health of both the mother and the child. With TouchHb it is now possible to do this effectively, even in low resource settings.

The product (Biosense, n.d.) has a potential to be more effective because of its noninvasive nature, which means it does not require a finger prick. It does not require any special skill to operate, so the doorstep health worker gets an objective result to take an important therapeutic decision. There are no recurrent costs (needles, use of special lancets, micro-cuvettes, blotting paper etc.) other than the batteries that can be recharged and expected to last for more than 100 tests and the probe, which requires yearly maintenance. The cost per test is low and there is no bio-waste. Besides the product will also enable the doorstep health worker to keep a track of the local health and allow him/her to place request to the primary health center / village clinic for an appropriate supply of nutritional supplements. More than a diagnostic tool, it will be a system to monitor anaemia at the grassroots level and help in reallocation of invaluable resources to where it's needed most.

#### Key features of the model

- Revolutionary noninvasive design
- Partnerships for deliver

#### Enabler: Opening up new horizons

The product other than analyzing the blood also records the data and is based on a platform technology that can be integrated with other applications. This makes its future growth potential very strong and also lowers the distribution costs significantly as the data can now be transferred remotely.

The organization is a new startup but has won numerous awards and has also managed to raise equity funding for its growth. It has a strong business model focus and has assured cash flow strength due to the high demand and easy acceptance of the product.



Figure 15

Key strengths according to business innovation framework: Enablers



➔ 6.3.4 Embrace



**Vision:** Embrace's mission is to advance maternal and child health by delivering innovative solutions to the world's most vulnerable populations.

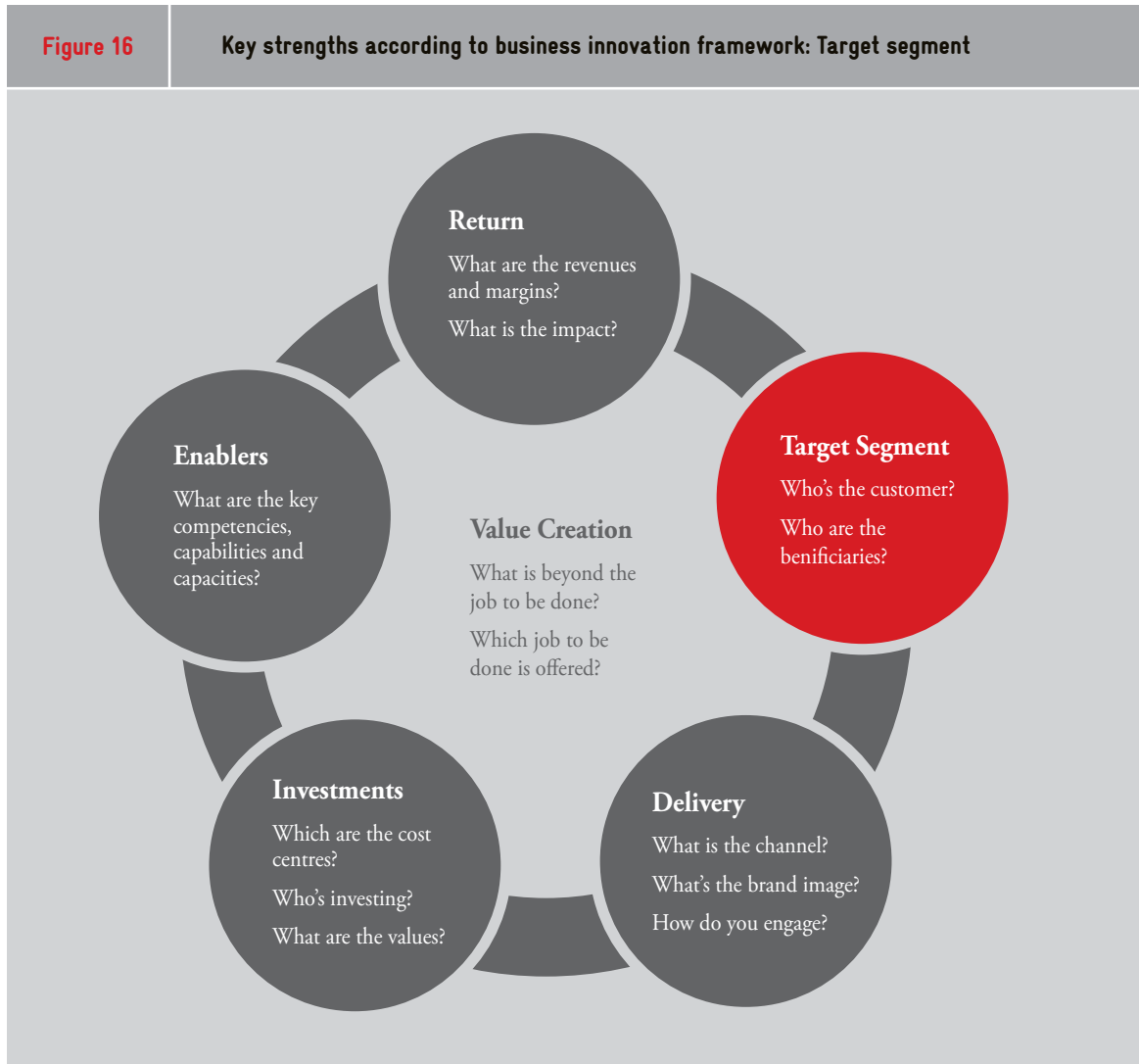
**Impact State:** Pan-India



Embrace started at Stanford University in 2007 with four co-founders led by Jane Chen (Embrace, n.d.). They sell cost effective baby incubators called ThermPod to hospitals all over the country. This incubator is at a fifth of the cost of the present ones used and is also very portable and robust.

**Key features of the model**

- Niche high impact segment (baby incubators)
- Large deals and partnership with delivery organizations like General Electric (GE) etc.



**Target segment – Solving a global problem**


According to WHO estimates, nearly 2 million babies are born low weight and pre-mature each year and as many as 450 die every hour. This occurs primarily in developing countries, often in areas that don't have access to innovations in modern medicine. One of the biggest problems these babies face is hypothermia: they are not able to regulate their own body temperature, and therefore cannot stay warm. In fact, room temperature for



these small infants feels freezing cold. 4 million babies die within their first month of life. Those that do survive often develop life-long health problems such as early onset of diabetes, heart disease, and low IQ.

Embrace envisages solving this problem by providing affordable and accessible solutions to prevent hypothermia. The business model is based on sales to large commercial child product distributors like General Electric and donations to rural like minded NGOs. The team also constantly collects data and information to improve the product while also running program activities for awareness (Embrace, n.d.).

### → 6.3.5 Jeevan Blood Bank



**Vision:** To make safe blood and blood components available to all in need

**Impact State:** Tamil Nadu

**Impact Domain:** Blood & bodily fluids

Jeevan Blood Bank and Research Centre (Srinivasan, 2013) was started on 24th September 1995 with the vision of providing on demand, safe blood and blood components collected from non-remunerated voluntary blood donors using appropriate and current technologies and in accordance to international standards.

It is an 18 year old organization and was founded by post graduates in medicine with over 60 years of cumulative health care experience. Dr. P. Srinivasan, co-founder of Jeevan is a stalwart in this healthcare industry and has been a pioneer in this field for the last twenty five years. The blood bank has collected over 130,000 blood donations and made available over 290,000 units of safe blood and blood components to the community. Safety of every blood transfusion is assured by a combination of blood donor selection and the technology and tests used to test the donated blood. Jeevan is the only independent blood bank in Chennai accredited to the highest healthcare standards in India - NABH.

In 2008, Jeevan launched Jeevan Stem Cell Bank, a not for profit public stem cell bank and in 2011, they released the first unit of cord blood derived stem cell for treatment of a 5 year old boy with bone marrow disorder

**Key features of the model**

- Strong experience in the sector
- First of its kind in India



Figure 17

## Key strengths according to business innovation framework: Delivery

**Delivery: Time tested commitment to quality and safety processes**

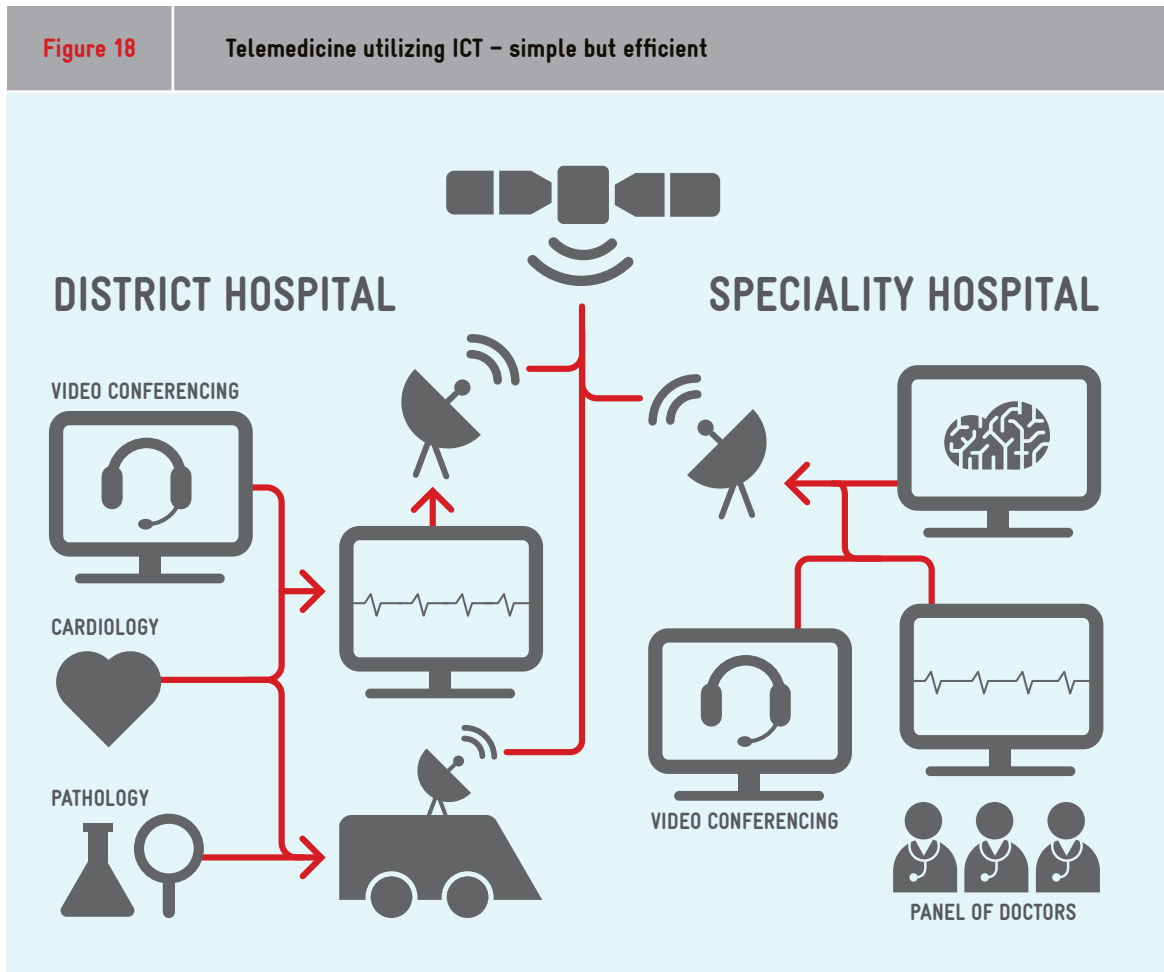
Some processes followed by Jeevan Blood Bank make it a very replicable and successful enterprise. It has institutionalized the 'blood donation culture' among its associates and partners as it totally depends on voluntary blood donors for the past 17 years. For this, Jeevan works with over 100 industrial and corporate houses in and around Chennai and conducts blood drives every year – sometimes more than once.

Jeevan also follows strict testing mechanisms and the experience of the Co-founders running one of India's best pathology centres has contributed to the streamlining of this area. Jeevan's commitment to quality was reiterated way back in 1999 with Jeevan becoming the first blood centre in India to be certified to ISO standards. Jeevan still maintains and demonstrates this commitment by adhering to NABH (15189) standards. This is yet another area Jeevan excels when compared to the peer group. This is the reflection of the team's understanding of the goals, processes and transparency.

**Returns: Self sustainable with high social impact**

Over the last 17 years, Jeevan has issued over 290,000 units of safest blood components to over 130,000 patients in and around Chennai. Jeevan's blood bank operation is a self-sustainable one. Jeevan depends on a cost recovery process from patients who can afford (approx. 90%) and those who cannot afford (children with cancers, Thalassemia, patients with renal failure and on dialysis) get the blood component free of any cost. This is met by the "Make Blood Free" program run along with Rotary Club of Madras Metro.

## 6.4 Telemedicine & Mobile Healthcare



Telemedicine and mobile health clinics present an innovative and scalable solution to India's rural health care challenge. More than just a 'helpline', telemedicine provides the technology infrastructure to deliver consultancy, diagnostic services and treatment guidelines through internet and telephone connections from urban centers to remote rural villages. These centers use teleconferencing technology and remote diagnostic devices to measure a patient's basic parameters and transmit this data to a doctor in an urban center for interpretation. The doctor then communicates a treatment plan which is implemented by the local primary care worker in the rural location. The technology is an answer to the ensuing healthcare problem of a lack of trained doctors in rural India. Most trained practitioners either get trained in urban centers and reside there or eventually move to an urban location for lack of well-paying jobs and well-equipped hospitals in rural areas. Only 3% of India's physicians live in rural areas and less than 25% live in semi-urban areas. Furthermore, in a country where there is already a short fall of an estimated 600,000 doctors, the technology also provides a way for trained practitioners to see more patients from the comfort of their own clinic or office. Its use allows for better primary care training for primary health care workers in rural areas. Better rural practitioners improve the quality of service provided to villagers, thereby increasing demand for these services, generating footfalls to rural clinics and creating further employment as the network expands. In this way the advent of telemedicine also helps strengthen existing human resources in rural areas.



➔ 6.4.1 NARAYANA HRUDAYALA'S TELEMEDICINE NETWORK



**Vision:** Initiate a medical revolution in India by bringing high quality coronary care and general primary health care services at affordable rates to the poor

**Impact States:** Pan-India

**Impact Domain:** Telemedicine centers for coronary care

Narayana Hrudayalya (NH) is one of the largest super speciality hospitals for cardiac care in the world. NH came into existence in 2001 and rapidly grew into one of the largest super specialty hospitals for cardiac care in the world.

Established by cardiac surgeon Dr. Devi Prasad Shetty, its team has performed over 17,000 open heart surgeries of which over 7,000 have been on children below the age of one. Its telemedicine network is the largest in the world, with over 900 telemedicine centers in 60 countries, 800 of which are scattered across India. Through creative partnerships with both government and private entities it has successfully developed a unique model for extending general primary care and tele-cardiology services to poor patients in remote areas. The network currently performs over 3.5 lakh tele-consultations annually (Wharton Knowledge, 2012).

**Key features of the model**

- Extremely large tele-medicine network and empanelled doctors
- Extensive utilization of emerging technologies like mobile networks and satellites
- Strong research partnerships

**Enabler: High mobile technology penetration and satellite networks** (Menon, 2012)

The advent and very fast growing mobile network in India has been a key enabler for the early adoption of telemedicine by Indian non-profit and for-profit health care institutions. Where internet services are slow, diagnostics and patient advisory are carried out over phone lines.

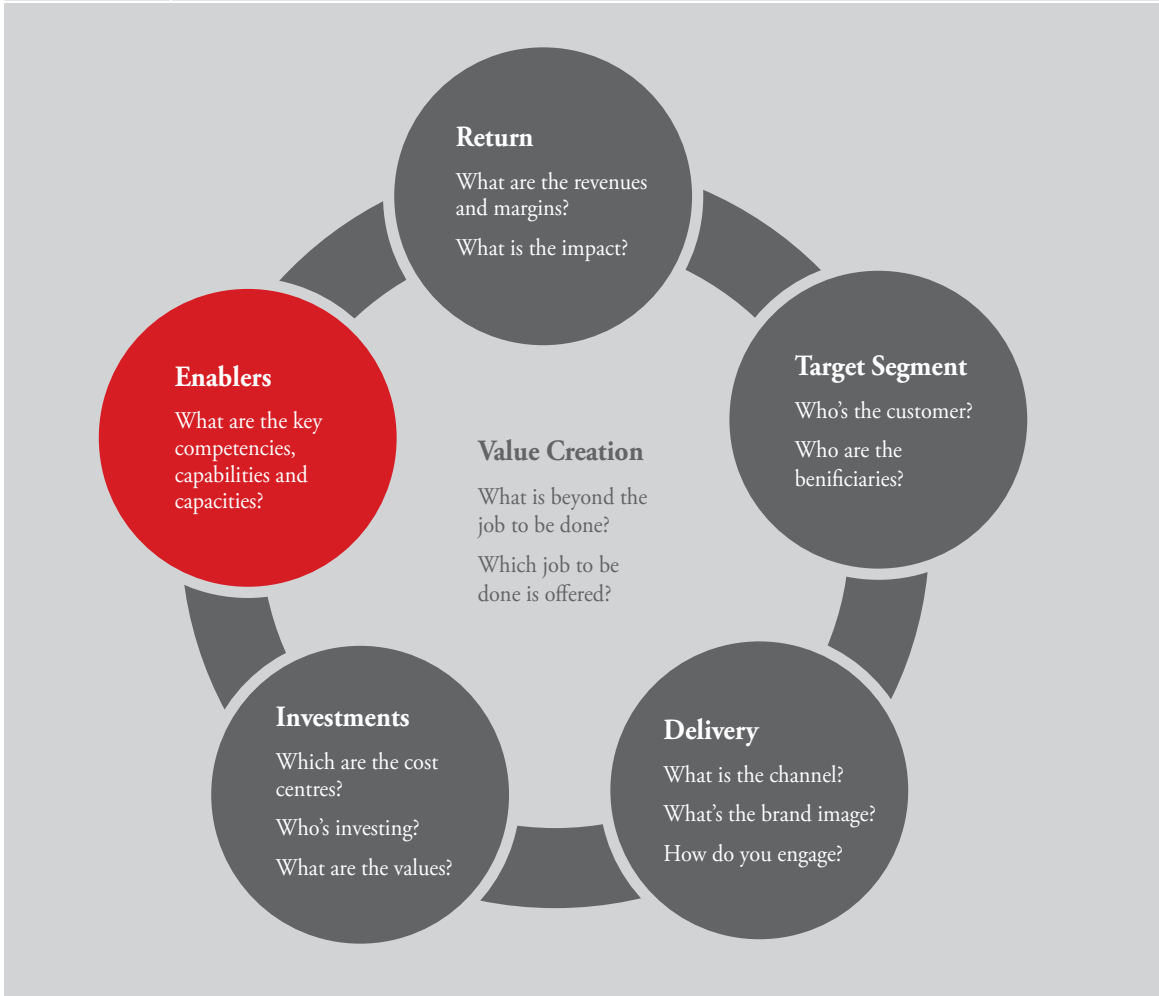
Telemedicine involves the use of electronic communication networks for transmitting clinical information and patient data related to the diagnosis and treatment of medical conditions (Wharton, 2010).

Telecommunications provide a two-way audiovisual network that gives hospitals, doctors and clinics access to medical and technological resources via satellite link, telephone networks and other media. The network consists of customized medical software, integrated with computer hardware and medical diagnostic instruments and connected via commercial Very Small Aperture Terminals (VSATs) at each location. Information such as medical



Figure 19

Key strengths according to business innovation framework: Enablers



records and diagnostic information is sent via this network from a remote rural location to a doctor at a clinic or hub at an urban location, who in turn provide diagnostic recommendations to patients and local medical staff in rural areas over a tele-conference.

NH's telemedicine initiative partnered with India's Satellite Research Organization (ISRO) to lower the operating costs of the network by using ISRO's satellite network to increase the reliability and quality of the network. The innovative partnership, which started out with 2 hubs and 3 unique networks for conducting tele-consultations, has grown into the world's largest network of telemedicine centers with over 800 centers across rural parts of India.

**Enabler: Private Public Partnerships – ISRO partnership (Kothandaram, 2007)**

The growth of telemedicine would be impossible without public sector intervention and innovative public private partnerships (PPPs) in this space. Narayana Hrudayalaya leveraged partnerships with ISRO to get satellite-enabled connectivity at their rural centers. This allowed for faster connections, less time wasted and a more real experience for the end-user.

In early 2002, NH partnered with ISRO to provide dedicated spectrum through its satellite network for tele-consultations from rural centers to two dedicated telemedicine hubs, one running out of its own central hospital in Bengaluru and the other at the Rabindranath Tagore International Institute of Cardiac Sciences (RTIICS).

Cardiologists at these two institutions use ISRO's satellite technology (that is provided free of cost as part of the partnership), ISDN lines and broadband internet to read patient reports and interact with patients and local medical staff via tele-conferencing facilities. The NH model employs 3 networks for reaching rural areas:

- 1 **Coronary Care Unit network (CCUs):** This network consists of hospitals and clinics run by state governments as well as charitable trusts where NH placed trained doctors and medical staff to provide primary coronary care and emergency care. In addition, NH supplied these CCUs with additional beds and state of the art medical equipment like ECG machines. Physical infrastructure was provided by the local managing entity, satellite enabled teleconferencing facilities were provided by ISRO and training, medical equipment upgrades and doctoral referral services were offered by NH.
- 2 **Karnataka Integrated Tele-medicine and Tele-health Project (KITTH):** NH worked with ISRO and the Karnataka state government to set up a network of 37 tele-medicine enabled district hospitals. CCUs were established using standardized protocols in each government hospital and satellite connections were provided free of cost by ISRO. Local doctors would complete primary screenings after which on a case by case basis, the patients would be referred to the NH's central hospital in Bengaluru.
- 3 **Family Physicians Network:** NH established the Family Physician's Network to set up a network of private practitioners trained in using free software for the transmission of ECG scans via broadband or satellite networks for NH for assessment. Trans-telephonic Electrocardiogram (ECG) machines and software was provided free of cost by NH to the practitioner network. These machines helped local practitioners send ECG scans directly to NH in Bengaluru where professionals would interpret scans and recommend next steps to the local medical staff. This system also helped increase footfall to NH through referrals for surgeries from the rural centers.

ISRO's help in providing satellite connectivity was essential for the following reasons:

- 1 **Time savings:** In addition to cost savings, a reliable satellite network increased the speed of data transmission shortening the length of each tele-consultation to 20 minutes or less, allowing doctors to see more patients. ECG scans and other data could be submitted in real time decreasing the time for diagnosis and a treatment plan
- 2 **Increasing rural footfalls:** A high quality video conference was essential to instill confidence in the rural patient. Since most rural dwellers needed to be sensitized to the process, it was essential that they could see and hear the doctors well in order to establish trust in the system. The increased footfalls made each rural centre more commercially viable freeing up capital for expansion and saving marketing and awareness building costs.

### Box 3

#### Farmer benefits from diagnostic and follow-up treatment at local CCU in Karnataka


Kuttarai, a 47 year-old subsistence farmer visited the local government hospital in Chamrajanagar in Karnataka complaining of severe chest pain. He was admitted at the local center and regularly interacted with a specialist at NH in Bengaluru through the tele-consultation facility which was provided free of charge. He had visited many hospitals in the past and found the tele-consultations to be far more cost-effective. Kuttarai said, "The CCU and doctors saved my soul. My treatment cost was Rs. 7,000 only here, but in Mysore hospital I was told the same treatment would cost Rs. 25,000"

## → 6.4.2 E Health Point

Healthpoint Services Global was founded by long-time social entrepreneurs Al Hammond and Amit Jain as they sought to transform health care delivery to patients at the Base of Pyramid (BOP) (Dowser, 2011). Combining innovations in telemedicine, advanced diagnostic tools, licensed doctors, water treatment and low



cost medications, Healthpoint brings affordable care to thousands of patients underserved by traditional health care infrastructure. Care delivery is provided through local E-Health Points (EHPs) owned and operated by its Indian entity, Healthpoint Services India (HIS), which was set up in 2009. The team integrates telemedicine with on-site staff at rural health care outposts called E Health Points



**Vision:** Transform primary and preventative healthcare in rural India through a sustainable service model for public health authorities and capital markets

**Impact States:** Punjab

**Impact Domain:** Rural, clean drinking water and telemedicine centers

**Key features of the model**

- Bundling of services (providing clean drinking water with curative healthcare services)
- Innovative partnerships for delivery

**DELIVERY: Bundling clean water with curative care**

E Health Point’s (EHP) key value proposition lies in their provision of clean drinking water bundled with curative health care services and medicines to the community from their tele-health centers. Water treatment is carried out using advanced reverse osmosis technology and EHPs provide water to families in their respective catchment areas on a monthly subscription basis (Ashoka Changemakers, 2011). A subscription fee of only INR 75 per month (roughly half the daily wage for a poor household) per household is charged and covers an assured 20 liters per day. Apart from helping curb water borne diseases as a preventative measure the ‘Water Point’ serves the larger goal of generating foot falls for the EHP. Typically each water point has the capacity to cater to a catchment area of 100 households and is quick to achieve high penetration. Customers that visit the EHP for water are a captive audience who are further educated about the telemedicine, diagnostics and others services provided at the EHP, helping the EHP generate awareness in the community and expand its clientele for the health services. Frequent visits to EHPs also provide social cover for patients with conditions that are considered social taboo such as tuberculosis or HIV.

**Enabler: Technology as a primary enabler**

The EHP model relies heavily on broadband technology to operate a doctor-to-patient model in real time. The consultation fee charged at Healthpoint Services India’s urban tele-medical centers is a meagre fee of about INR 20 per consultation. Consultation rooms are equipped with the tele-medicine system that is a screen to view the doctor and diagnostic tools. Clinical assistants (ANMs) set up the video conference between the patient and the doctor. To make villagers more comfortable, the doctors are sourced from local areas for linguistic and cultural familiarities and are specially trained in providing tele-medical consultations and identifying such cases that may

Figure 20

## Key strengths according to business innovation framework: Delivery




require referral for advance treatment. In order to overcome the distance barrier and boost association with the villagers, these doctors periodically meet the community in EHP villages. In addition, electronic medical records are maintained for all patients and at a macroscopic level for the community, to help doctors in the urban tele-medical centers do an accurate diagnosis and treatment. Professionals at EHPs are rigorously trained and staff at each EHP can administer approximately 70 diagnostic tests (Center for Market Innovations, 2012).

#### **Delivery: Hub and spoke model enables deeper penetration and lower operational costs**

An EHP unit can utilize facilities, staff, and technical support more efficiently than a water treatment unit, a clinic, and a pharmacy operating separately, enabling lower costs for patients. The HSI electronic health records provide detailed knowledge of the health profile of a community and also have a real-time disease surveillance capability alerting local and State health officials on new disease outbreaks if and when the need arises.

### → 6.4.3 Ambulance Service – Ziqitza Healthcare Limited

Ziqitza Healthcare, a for-profit company was launched in Mumbai in 2002. In 2005 it started the Dial 1298 for Ambulance program to provide reliable high-quality emergency ambulances in India. By 2009, with additional support from the Acumen Fund, 1298 operated over 90 ambulances in five states. The name Ziqitza was derived from the Sanskrit chikitsa, meaning medical treatment, and zigyasa, meaning quest for knowledge. It was founded by four social entrepreneurs, Ravi Krishna, Naresh Jain, Manish Sancheti, and Shaffi Mather who all

**Vision:** Fast, efficient and affordable ambulance access for all

**Impact States:** Mumbai, Bihar, Punjab, Rajasthan and Kerela

**Impact Domain:** Ambulance service

**Key features of the model**

- Unique cross subsidization revenue model
- Strategic partnerships for knowledge and technical expertise

left lucrative positions to start the venture (Dial 1298, n.d.).

The 1298 Ambulance service provides the following support:

- Basic Life Support (BLS): Administered oxygen, treated splint fractures, controlled bleeding, and performed CPR in cases of cardiac arrest.
- Trained helper (nurse) and driver on board.
- Advanced Life Support (ALS): Administered sophisticated equipment to monitor, shock, and pace the heart of the patient with trained EMS doctor and driver on board.
- Patient Transport Service (PTS): Provided patients with transportation, including hospital to hospital or other destinations in nonemergency situations. BLS or ALS ambulance dispatched, depending on the care required.
- Free Transport: Offered to all accident and disaster victims. BLS or ALS ambulance dispatched, depending on emergency situation.

**Delivery – Unique Revenue model**

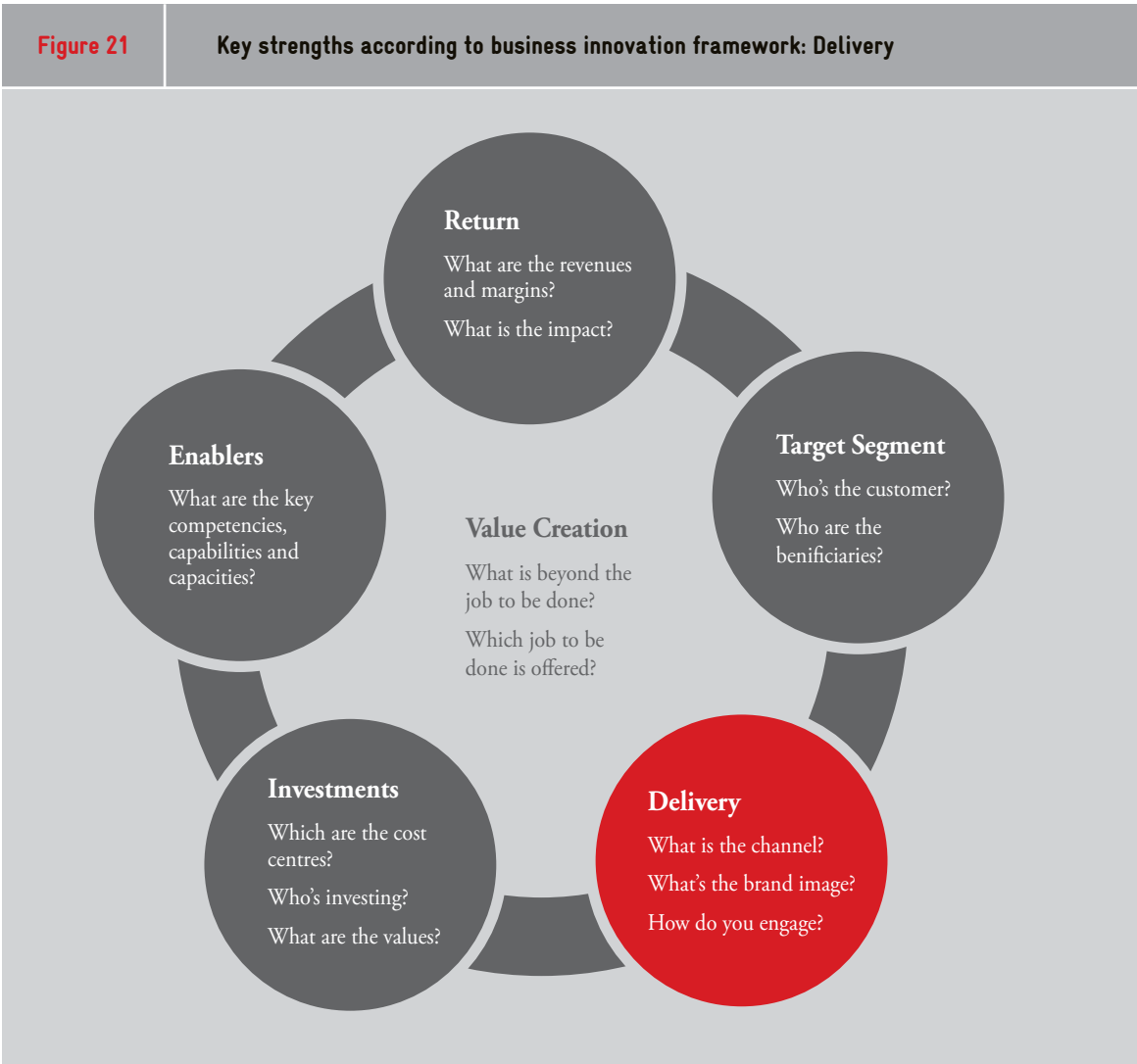
Other than Ziqitza’s focus on processes and quality, its revenue model is also unique as it uses a sliding scale to charge its patients (Acumen Fund, n.d.).

“Those who go to free government-run hospitals pay a subsidized rate for services,” explained one analyst, “while those who ask to be taken to Mumbai’s more expensive private hospitals pay accordingly. The price range starts from 750 rupees for basic services to about 1,500 rupees for cardiac care.” The so-called cross-subsidy model, under which more affluent patients in effect subsidized the care that BPL and other low income clients received, allowed Ziqitza the potential to serve any and all citizens in Mumbai who requested EMS through Ziqitza Healthcare. In addition, accident and disaster victims are transferred to a government-run hospital free of charge.

**Enabler – Strong partnerships**

Ziqitza business model needs investment as it has capital requirements to buy ambulances and setup its infrastructure. For this the enterprise has raised funds from philanthropic as well as commercial investors like





Acumen Fund, AMR/GMR, HDFC, IDFC and India Value Fund.

It has also created strategic partnerships with organizations from whom it can get knowledge support and technical expertise like London Ambulance Service, Life Supporters Institute of Health Sciences and New York Presbyterian Emergency Medical Service (NY-EMS).

Other than these business cases a few other initiatives have also been following highly sustainable approaches for effective healthcare delivery and high social impact. Some of the innovative ones highlighted below are the 'e-Mamta (One World . Net, 2012) initiative of the Government of Gujarat and the Muskaan Ek Abhiyan - The Smile Campaign (Goel, n.d.) initiative by the National Rural Health Mission in Bihar (Goel, et al., 2010).

**Box 4**      **E-Mamta: Government of Gujarat initiative**

**E-Mamta is a citizen-centric service delivery initiative by the Government of Gujarat. It leverages information and communication technology to track pregnant mothers and children, and integrates non-recipients of services into the health care system.**



E-Mamta is a name-based mother and child tracking information management system designed to facilitate effective citizen-centric service delivery. It was conceived by the State Rural Health Mission of the Health and Family Welfare department of Gujarat in January 2010. The programme adopts an innovative working design that harnesses ICT as a tool to strengthen primary health care facilities and service delivery in Gujarat. Based on a case-based tracking software, 'e-Mamta' aims at integrating all pregnant mothers and children as recipients of maternal and child health care services.

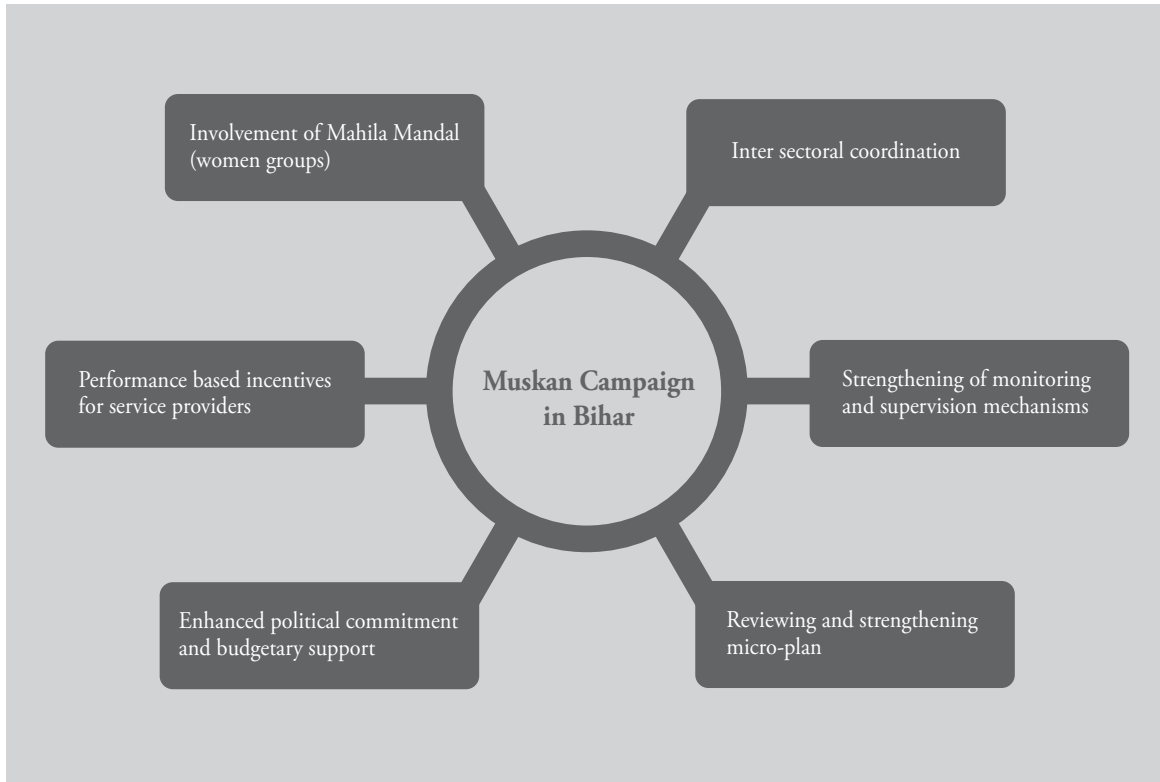
The working of 'e-Mamta' can be classified into four important phases:

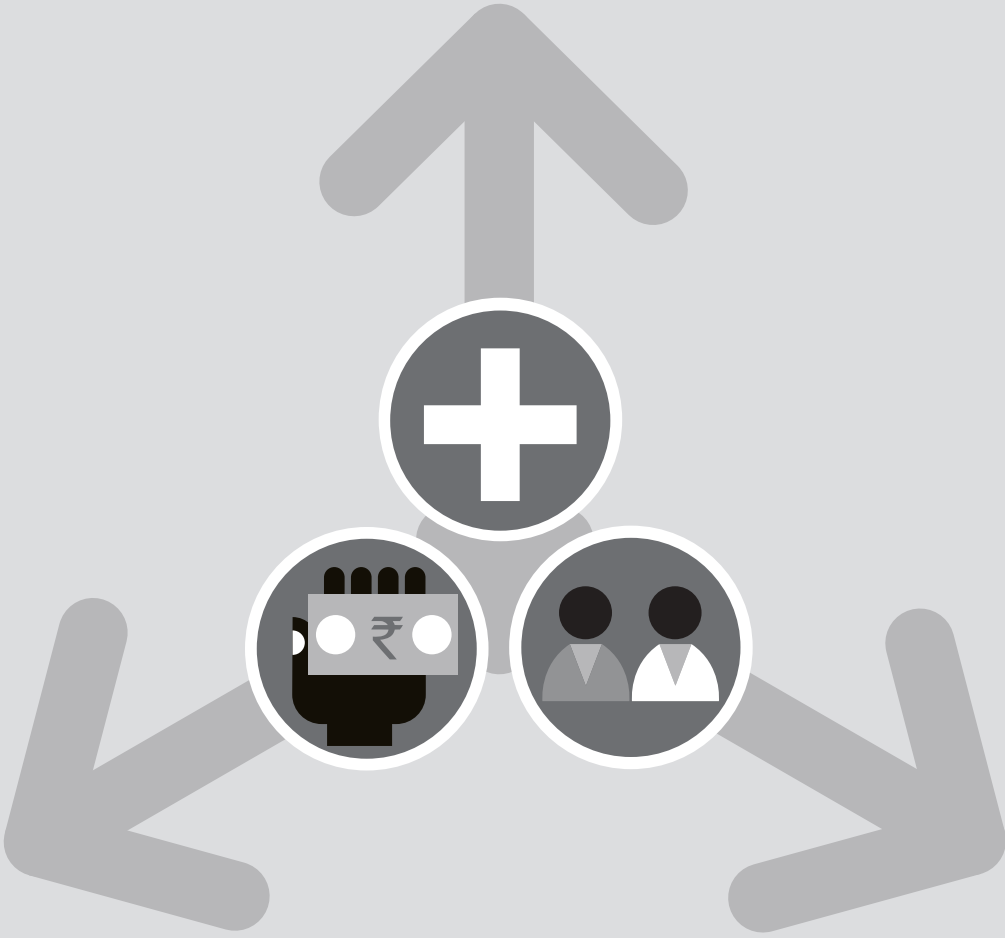
- 1 Family Health Survey:** This facilitates the compilation of individual health records of 480 million beneficiaries. The survey covered components like identification details (location, name, date of birth, caste, ration card, BPL card, RSBY card), health provider details (ANM, ASHA, Chiranjeevi yojna, private hospitals), ANC, pregnancy and PNC details for pregnant mother, child, adolescent and family planning. The survey is conducted by local health workers and has been successful in covering over 80% of the total population from both rural and urban (slum) areas. The data is updated every year.
- 2 Registration:** Pregnant women and children (0-6 years) once identified are registered. They are provided a unique mother and child Health Identity card.
- 3 Work plan to track service delivery:** Health care services delivered to pregnant women and children are tracked through a unique system of work plans. The work plan is a novel concept that has been introduced in the public health for the first time through e-Mamta. It contains relevant and accurate information for service delivery and tracking the non recipients of services. The work plans are prepared on a weekly or monthly basis by the medical officer as per the requirements of the PHC.
- 4 Monitoring and Evaluation:** The e-Mamta software facilitates effective monitoring of the delivery of health services. Regular evaluations are conducted based on the information generated through the system.

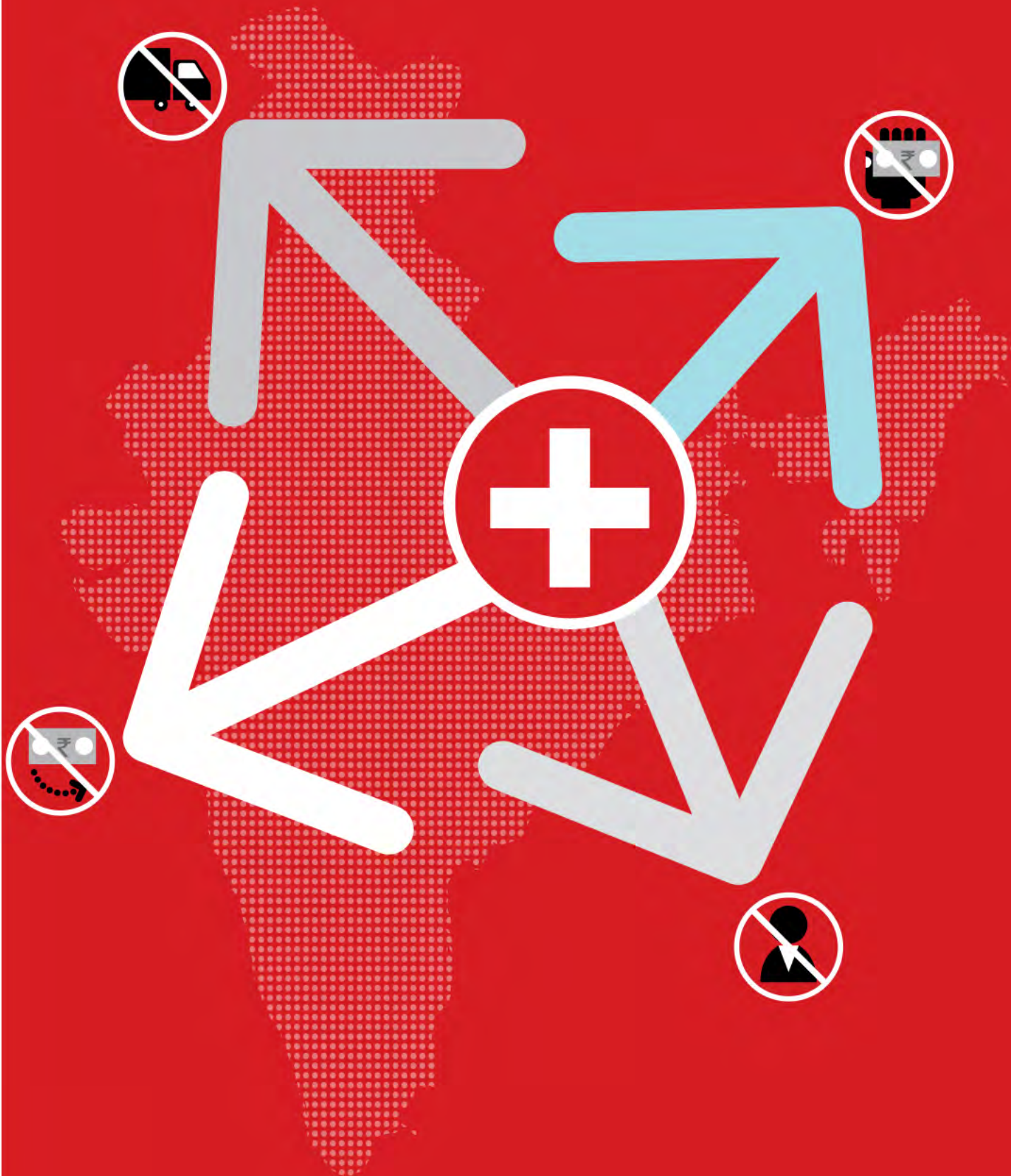
**Box 5****Muskaan (The Smile Campaign)****Mobilizing all children in a village for immunization given by ASHA workers and track all pregnant and new born children**

The Bihar state has started this initiative to track pregnant women and new born children and ensure that they are properly immunized. Launched in October 2007, this program has been quite successful in increased pre and post natal coverage and immunization numbers have significantly increased. Prior to implementation of this program only about 19% of the children were immunized (in 2005). This has gone up to 49% (in 2009).

The main strategies of the Muskaan campaign were reviewing and strengthening immunization micro-plans, enhanced inter-sectoral coordination between the Departments of Health, and Women and Child Development, increased involvement of women groups in awareness generation, enhanced political commitment and budgetary support, strengthening of monitoring and supervision mechanisms, and provision of performance based incentive to service providers.









# 7 Challenges from the Field

A number of challenges still exist for potential entrepreneurs in the healthcare sector in India. The recently concluded GIZ India & CII-ITC Center for Sustainable Development Workshop on Improving Indian Healthcare Systems (4th December, 2012), captured a number of these potential roadblocks directly from the entrepreneurs working in this field<sup>2</sup>. The challenges have been broken up by different causal parameters:

## → Challenge due to target segment

- 1 Illiteracy and lack of awareness: This prevents the flow of information and also hampers communication and data exchange
- 2 Detrimental Government Schemes: Many public healthcare schemes have corrupted the target customers and have had a negative impact on business model driven health care enterprises
- 3 Mission customer profiling: Very little or incoherent data exists about the rural customer and his medical history. This prevents adequate detection and prevention of healthcare problems
- 4 Remote distribution challenges: Some target customers are so remote and inaccessible that most logistics models don't work satisfactorily
- 5 Lack of support grassroot partners: More grass root organizations are needed to disseminate information and run health awareness campaigns so as to create demand for the right healthcare products and services

## → Challenges due to delivery

- 1 Remoteness and lack of infrastructure: Roads, transports, retailers etc. are missing in many rural locations preventing proper delivery
- 2 Conflict of interest with public services: Peer jealousy and conflict of interest with existing ineffective health care public services often create roadblocks in front of progressive health care techniques
- 3 Block in replication of franchise models: Replicable models are needed which can be rapidly franchised out
- 4 Lack of channels: More creative innovations in potential partner channels are needed

## → Challenges with regards to financing

- 1 Identification of influence makers: Its hard for new entrepreneurs to identify key individuals or motivators to share financial risks
- 2 Expensive training: Providing technical expertise is expensive and very few skilled workers are available
- 3 Difficulty with obtaining equity investments: Due to higher risks, equity investments are hard to come by

2. Improving India's Healthcare System – Practitioners' Workshop (4th December 2012) was organized in New Delhi by GIZ India in association with CII – ITC Centre of Excellence for Sustainable Development in order to help potential entrepreneurs understand a business model oriented approach to healthcare enterprise development. The authors were also the moderators for this workshop and a number of findings from it have been incorporated in this study. The workshop was attended by 15 entrepreneurs representing different healthcare enterprises from different parts of South Asia



**→ Challenges with regards to returns**

- 1** Low and slow payback: Most healthcare establishments in rural areas take a long time to break even and the financial returns generated in the first few years are not enough to sustain the enterprise
- 2** Incorrect pricing models: Creative pricing models are needed to accommodate rural and agricultural income patterns and requirements

**→ Challenges due to lack of support infrastructure**

- 1** Energy deficiency: Most rural areas don't have proper energy coverage and hence running healthcare enterprises are difficult
- 2** Government restrictions: Many government programs limit private parties from accessing local resources









# 8 Key Findings

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- The healthcare sector in India is undergoing a phase of reform propelled by rapid economic growth. Apart from the healthcare providers, emerging markets such as diagnostic chains and medical device manufacturers, are attracting increasing amounts of investment
- India's healthcare spending is extremely low with twelve states spending less than USD 100 million each in 2006, together representing less than 4.5 percent of total national expenditure and 3.6 percent of the population
- There has been a significant growth in the healthcare sector over the past five years and its expected to reach USD 280 billion by 2020
- The main growth is seen in low costs hospitals in Tier II, Tier III cities and rural India
- A number of enterprises have come up over the past five-ten years that are working towards healthcare for the part of society currently underserved. The successful ones among these are those that are following a business innovation approach
- The main challenges on the field still are in terms of logistics, lack of awareness, government apathy and rudimentary delivery channels
- While investments are growing in this sector, the shortfall is still huge as many investors still consider healthcare (esp. rural and low costs health care) as a risky and low return business
- Innovations that build on technology, ICT as well as private-public partnerships (PPP) are relatively more successful and a number of good examples can be found on the ground. These along with specialized care hospitals represent the next generation of low cost rural healthcare and are developing quite rapidly
- The focus has now also come on process optimization, standardization and inclusive models to ensure long term sustainability and cost effectiveness



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# Appendix

## Key takeaways from the CII-GIZ workshop on healthcare – 4th December 2012

Improving India's Healthcare System – Practitioners' Workshop (4th December 2012) was organized in New Delhi by GIZ India in association with CII – ITC Centre of Excellence for Sustainable Development in order to help potential entrepreneurs understand a business model oriented approach to healthcare enterprise development. The authors and organizers were also the moderators for this workshop and a number of findings from it have been incorporated in this study. The workshop was attended by 15 entrepreneurs representing different healthcare enterprises from different parts of South Asia

The participants represented the following companies:

Table 7		Enterprises attending the workshop	
S. No.	Enterprise Name	S. No.	Enterprise Name
1	Mobile Harvest Solutions Private Limited	10	LeapRx Healthcare Private Limited
2	Health at Home Private Limited	11	ERC - Eye Care Center
3	SIDART	12	CARE Foundation
4	Akhand Jyoti Eye Hospital	13	Zimmer
5	International Union Against TB and Lung Disease	14	Navkar Skills
6	Ujjeewan Healthcare Private Limited	15	Staunch Healthcare
7	Clinton Health Access Initiative / Gsf Accelerator	16	Vision Spring
8	Dimagi Software Innovations	17	Hindusthan Lever Limited
9	Swasti Health Resource Centre		

The workshop was lead by representatives from GIZ – Ms. Stefanie Bauer and Mr. Lalmuanzuala Chinzah, from CII – Ms. Swati Pandey and Ms. Sachin Joshi and the author Mr. Rustam Sengupta.

The workshop also included subject matter experts and mentors from the field who help the participants in the discussions and shared their best practices from the field.

The mentors were the following:



Mentor Company	Mentor/s
CIIE	Shashank Rastogi
Vision Sping	Keerti Pradhan
Ehealth point	Amit and Sumeet
GCDW	Dr Rajesh and Rajkumari

**Group Feedback (Additional to that captured in Chapter 6: Challenges from the Field)**

**→ Value creation**

**Solution:**

- Look at gaps in systems that can be plugged

**→ Target segment**

**Challenges:**

- Consumers are mainly from the rural areas and are illiterate or semi literate
- Government schemes seem to spoil market dynamics
- There is a lack of resources to tackle every bottleneck/node in the value chain
- Consumers are not technology savvy
- There is very little awareness among consumers
- There is a problem in communication
- Real consumer profile is missing
- There is a challenge in convincing consumers about their real needs which hinders their purchase decisions
- Even if last mile delivery distribution has been solved. There is a time gap in delivery from last mile to consumers to consumption by consumers eg. drugs
- There is a challenge in generating consumer demand. Sometimes perceived problem is not the real problem
- Problems in identifying partners for dissemination

**Solutions:**

- Businesses should not depend on Government as sole customer but should leverage Govt. programmes instead.
- Infrastructure existing should be ridden on instead of creating new channels/infrastructure
- Businesses should attempt to foster change in consumer behavior
- Long term approach and vision should be adopted
- Businesses should find point of contacts for influencers
- Once primary influencers are identified sampling/prototypes/pilots would be initiated with them to convince them
- Once primary stakeholders are identified institutions/networks for dissemination should be created around them
- Right approach from initiation should be adopted in approaching rural consumers/target groups as first impression is last impression
- Presumptions should be shelved and study of target consumers should be done
- Peer influencers should be used for dissemination and replication
- If customers are fragmented/huge in number than organizational stakeholders should be depended as multipliers
- Not just consumers but purchase influencers should be identified
- Once platforms for addressing needs are provided to consumers, one can co-create solutions and products/contents
- Use the community

- If capacity building or training is the need then it should have elements of standardized as well as locally customized content

## → Delivery

### Challenges

- Physical connectivity is a problem
- Last mile delivery challenge especially in remote places
- If existing institutional infrastructure is tapped there can be conflict of interest and peer jealousy eg. Aasha workers

### Solutions

- Capacity building/training should be done at the doorstep
- To approach consumers/influencers events like festivals/melas should be banked upon
- Create a network of peer influencers
- Make product aspirational and create demand/pull from market
- Get real needs assessment done and feed the needs into designing the product/service
- An approach for picking volunteers should be sticking on to the hanger ons to the last minute in public meetings
- Convince community influencers eg. NGOs with same vision and bring them in as primary stakeholders
- Don't involve people engaged in Govt. programs
- Make effort to educate users about benefits of products and services

## → Investments

### Challenges

- Who is the purchase influencer/decider?
- There is an HR cost in getting people with right technical skills
- Without incentives which are costs, volunteers cannot be procured
- There is a cost in getting bandwidth and technology
- General HR cost

### Solutions

- Try to subsidize costs by getting in grants and corporate sponsors
- Price product a little above ability to pay
- Learn the value chain/distribution chain and cut the middlemen
- Do proper cost benefit analysis and price product accordingly
- In presence of a wide spectrum of offering, find gaps that are not catered to by these offerings and value it and price accordingly
- Show/demonstrate/sensitize successful projects to upcoming professionals for the goal of dissemination and replication
- Set price by benchmarking with alternatives
- Adopt optimal fix pay model
- Look for local funding

## → Return

### Challenges

- Output/use is relatively easier to measure than real impact
- If institutions are used as intermediaries there is a high cost wrt to commission
- There is a problem in terms of collection for disseminated and large number of consumers



- Price modeling is a problem
- There is a challenge in measuring impact of training/capacity building

#### **Solutions**

- Use/bank on existing networks for payments
- Develop efficient and innovative franchisee models
- Design efficient and right structures/processes for payment
- Make intermediary stakeholder pay –design model in such a way
- Conduct baseline study for measuring impact
- Use technologies and innovative solutions for payments
- Build correlations with related topics to measure impact
- USE MFI model
- Don't tie up with insurance companies

### **→ Enablers**

#### **Challenges**

- Lack of support infrastructure eg. blood banks
- Lower tiers (below doctors/nurses) medical professionals are not properly trained
- Govt. support programmes are mostly failures  
Sometimes Govt. regulations restrict training of local resources

#### **Solutions**

- Train existing Govt. workers eg. Aasha workers for common services.
- Identify appropriate platforms for advocacy
- Use RTIs/tools for circumventing bureaucracy
- Educate bottlenecks in systems/processes to policy maker
- Train alternative local persons for delivering services eg. for Local science graduates for lab technicians
- Govt. should provide infrastructural support to at least the level of Primary Health Centers for local hub and spoke model
- One should train beyond doctors eg. nurses for emergency response



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# About the Author

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Rustam Sengupta is a social entrepreneur and base of the pyramid (BoP) expert. He researches on sustainable social enterprise design and implements his work first hand on the field. Rustam is the founder and CEO of Boond ([www.boond.net](http://www.boond.net) | [www.boondfoundation.org](http://www.boondfoundation.org)), a social enterprise that creates rural entrepreneurs and distribution channels for development products like solar lamps, solar home systems, water filters, efficient cook-stoves etc. in the remote parts of India. He is an expert on designing and data analysis for products and services for the BoP and has also been consulting to numerous universities and institutions on market entry, sustainable healthcare and emerging market economics. Boond has won a number of awards (Economic Times Power of Ideas 2010, Nokia DLD Global Challenge, UN Women etc.) and more importantly has impacted the lives of over 50,000 people in remote villages of Rajasthan, UP and Kashmir over the past two years.

Rustam is an INSEAD MBA graduate and also holds an MS in Electrical Engineering from the University of California, Irvine. He has lived across three continents and worked in banking and consulting for companies like Standard Chartered (in Singapore), Syngenta (in Switzerland) and Deloitte Consulting (in the US). He loves theatre, acting and directing plays in his spare time and is also an avid traveler who has been to over 35 countries in all the inhabited continents of the world. Rustam believes in sustainable models for development and social impact and other than putting everything he has in Boond also spreads the message of sustainability by teaching courses on social responsibility, sustainable healthcare and climate change in Indian universities and consulting with international development agencies.

TEDx Change Delhi Talk: <http://youtu.be/UB4kZTm2BsE>

TEDx SPSU Talk: <http://youtu.be/n2tSVIffH9rU>

Times Now Show Amazing Indians: <http://youtu.be/sAqP61ZVWio>

Boond : [www.boond.net](http://www.boond.net) | [www.boondfoundation.org](http://www.boondfoundation.org)

Boond on Facebook: <http://www.facebook.com/pages/Boond/293122089953?ref=ts>

Endeva Development Consultants: [http://www.endeva.org/institute/people/rustam\\_sengupta/](http://www.endeva.org/institute/people/rustam_sengupta/)



## MSME Promotion Programme: Promoting Innovative Businesses with Social Impact

India's growth story can only be sustainable in the long run if its decision makers in the business sector and in the policy sphere manage to successfully address the increasing disparities, at the same time responding to the competitive pressures on India's economy in a strategic manner. Acknowledging the need for innovation in the country, the Prime Minister Dr. Manmohan Singh has announced the period 2010 – 2020 as the “Decade of Innovation” and has established the National Innovation Council, whose mandate it is to create an Innovation Movement in the country and to develop models of innovation promotion, which can be up-scaled by other institutions on national or state level.

Beyond increasing competitiveness through innovations, India's sustainable economic development is dependent on innovations that accelerate more inclusion and more sustainable growth. Innovative solutions are necessary that change people's lives with products, services, processes and business models and also tackle the twin challenges of the 21st century: poverty and natural resource strain. This requires a different outlook on the innovation concept itself and demands for a rethink of innovation processes.

As a sub-component of the Umbrella Programme for the Promotion of Micro, Small and Medium Enterprises (MSME), GIZ has partnered with the CII-ITC Centre of Excellence for Sustainable Development (CII-CESD) for Innovation System Promotion. The CII-CESD has coined the term ‘Sustainable & Inclusive Innovation’ or “SI2” to innovations that are set apart by four distinctive characteristics, in addition to some other dimensions in describing such innovations:

- 1 Such innovations add value to the life of the people much beyond the immediate use of the product or service;
- 2 Such innovations create a product or service of an uncompromising quality at a price that is affordable;
- 3 Such innovations address the challenge of resource use efficiency to manage drastically low cost structures; and
- 4 finally, such innovations are scalable and replicable to suit requirements of local circumstances and complexities.

The project aims to foster the eco-system for innovation and go beyond present research and focus on the questions of how innovations come about and consequently how they can be fostered. Following questions will hence be addressed: What are the strategies, tools/instruments required to make innovation work? How can public and private actors contribute to the creation of an enabling environment for sustainable and inclusive innovations? How does one ensure that innovation as an end as well as a process is both sustainable and inclusive, i.e., not leaving out the poorer segments of the population? How sustainable and inclusive innovations can be mainstreamed for the benefit of the MSME and the general public and how it can be a harbinger for South-South exchange?

### About CII-ITC CESD

The CII - ITC Centre of Excellence for Sustainable Development is an institution that creates a conducive, enabling climate for Indian businesses to pursue sustainability goals. It creates awareness, promote thought leadership and build capacity to achieve sustainability across a broad spectrum of issue. A pioneering effort by CII, the Centre is the fountainhead of ideas and practices to promote Sustainability. It enables Indian businesses become sustainable, and channels the potential of Indian industry to power India's agenda for inclusive growth and sustainable development. It enables businesses transform themselves by embedding the concerns of sustainable development into their own strategies and processes.