



Comparative Assessment of Impact Potential of Social Enterprise and Government Delivery Models in India

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Contents

ABBREVIATIONS	4
INTRODUCTION.....	6
METHODOLOGY	7
INSIGHTS AND FINDINGS	14
PRIMARY HEALTHCARE SOLUTION SPACE.....	15
Government and SE Delivery Models.....	15
Comparative Analysis of Impact Potential.....	17
Opportunities for Collaboration	28
SECONDARY AND TERTIARY HEALTHCARE SOLUTION SPACE	30
Government and SE Delivery Models.....	30
Comparative Analysis of Impact Potential.....	32
Opportunities for Collaboration	40
SCHOOLS SOLUTION SPACE.....	42
Government and SE Delivery Models.....	42
Comparative Analysis of Impact Potential.....	44
Opportunities for Collaboration	53
TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SOLUTION SPACE	55
Government and SE Delivery Models.....	55
Comparative Analysis of Impact Potential.....	57
Opportunities for Collaboration	66
SOLID WASTE MANAGEMENT SOLUTION SPACE	67
Government and Social Enterprise (SE) Delivery Models.....	67
Comparative Analysis of Impact Potential.....	70
Opportunities for Collaboration	79
CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS.....	81
Areas of potential intervention.....	81
Recommendations on intervention design.....	83
Critical elements of successful collaboration between government and SEs.....	88
ANNEXURE 1: SE PROFILES.....	91
ANNEXURE 2: GLOSSARY.....	101

Exhibits

<i>Exhibit 1: 5 key stages of the methodology adopted</i>	7
<i>Exhibit 2: Solution space selection framework</i>	9
<i>Exhibit 3: Brief descriptions of selected SEs</i>	12
<i>Exhibit 4: Areas of impact comparison</i>	13
<i>Exhibit 5: Primary healthcare structure In India</i>	16
<i>Exhibit 6: Snapshot of primary healthcare enterprises</i>	17
<i>Exhibit 7: Short note on Mohalla Clinics</i>	23
<i>Exhibit 8: Short note on Indian quacks</i>	26
<i>Exhibit 9: Intensity of levers across impact parameters</i>	28
<i>Exhibit 10: Secondary healthcare structure in India</i>	31
<i>Exhibit 11: Snapshot of secondary healthcare enterprises</i>	32
<i>Exhibit 12: Short note on First Referral Units</i>	35
<i>Exhibit 13: Intensity of levers across impact parameters</i>	40
<i>Exhibit 14: Government delivery structure of school education in India</i>	43
<i>Exhibit 15: Snapshot of enterprises delivering education services in India</i>	44
<i>Exhibit 16: Short note on Social Welfare Schools</i>	47
<i>Exhibit 17: Intensity of levers across impact parameters</i>	53
<i>Exhibit 18: Snapshot of TVET enterprises in India</i>	57
<i>Exhibit 19: Short note on National Academy of Construction</i>	60
<i>Exhibit 20: Intensity of levers across impact parameters</i>	66
<i>Exhibit 21: Municipal solid waste delivery model</i>	68
<i>Exhibit 22: Snapshot of waste management enterprises in India</i>	70
<i>Exhibit 23: Intensity of levers across impact parameters</i>	79
<i>Exhibit 24: Indicative structure of Social Enterprise Collaboration Lab (SECL)</i>	85
<i>Exhibit 25: Risk innovative financing mechanisms</i>	86
<i>Exhibit 26: Indicative structure of Social Enterprise Development Facility (SEDF)</i>	87
<i>Exhibit 27: Indicative structure of Japan-India Social Enterprise Alliance (JISEA)</i>	88

ABBREVIATIONS

AI	Artificial Intelligence
AIDS	Acquired Immune Deficiency Syndrome
AMC	Ahmedabad Municipal Corporation
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activists
BBMP	Bruhat Bengaluru Mahanagara Palike
CDSS	Clinical Decision Support System
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHC	Community Health Centre
CITS	Crafts Instructor Training Scheme
CPHEEO	Central Public Health and Environmental Engineering Organization
CRM	Customer Relationship Management
CSR	Corporate Social Responsibility
DBIT	Design, Build, Implement, Transfer
DBMT	Design, Build, Manage and Transfer
DBO	Design, Build, Operate
DGT	Directorate General of Training
DWCC	Dry Waste Collection Centres
ECG	Electrocardiography
ERP	Enterprise Resource Planning
FRU	First Referral Units
GIS	Geographic Information System
GOI	Government of India
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HTD	Hire, Train and Deployment
HWC	Health and Wellness Centers
IBM	International Business Machines Corporation
IEC	Information, Education, Communication
IHF	India Health Fund
IMA	Indian Medical Association
ISO	International Organization for Standardization
ITI	Industrial Training Institute
JSY	Janani Suraksha Yojana
KMC	Kolkata Municipality Corporation
KSRTC	Karnataka State Road Transport Corporation
LMS	Learning Management System
MBBS	Bachelor of Medicine and Bachelor of Surgery
MIS	Management Information System
MIT	Massachusetts Institute of Technology

MMU	Mobile Medical Units
MoEF	Ministry of Environment and Forests
MSDE	Ministry of Skill Development and Entrepreneurship
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
MT	Million Tonnes
NAC	National Academy of Construction
NCVT	National Council for Vocational Training
NEEPCO	North Eastern Electrical Power Corporation
NGO	Non-Governmental Organisation
NHP	National Health Programs
NICU	Neonatal Intensive Care Unit
NRHM	National Rural Health Mission
NRLM	National Rural Livelihood Mission
NSDC	National Skill Development Corporation
OPD	Outpatient Department
PCTS	Pregnancy, Child Tracking and Health Services Management
PET	Polyethylene Terephthalate
PHC	Primary Health Centres
PMKK	Pradhan Mantri Kaushal Kendra
PPP	Public Private Partnership
RFID	Radio Frequency Identification
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RTE	Right to Education
SBM	Swachh Bharat Mission
SC	Sub Centres
SC	Scheduled Caste
SDG	Sustainable Development Goal
SDH	Sub-Divisional Hospital
SE	Social Enterprise
SEWA	Self Employed Women's Association
SSA	Sarva Shiksha Abhiyan
SSC	Staff Selection Commission
SWM	Solid Waste Management
TE	Teacher Education
TPD	Tonnes Per Day
TRI	Transform Rural India
TSWREIS	Telangana Social Welfare Residential Educational Institutions Society
TVET	Technical and Vocational Education and Training
USAID	United States Agency for International Development
WHIMS	Wireless Health Incident Monitoring Service
WHO	World Health Organization

INTRODUCTION

Since independence, Government of India has been developing infrastructural resources across the country with the purpose of improving access to basic services for the people. Healthcare, education, water, sanitation, agriculture and energy have been some of the key focus areas for the government. However, a significant section of India's population especially in rural areas continues to lack access to basic services. A recent study revealed that about 70% of India's population lives in rural areas with limited to no access to basic sanitation, health services, and electricity¹. The lack of access to these basic services has bred multiple developmental challenges such as widespread poverty, unemployment, and increasing indebtedness of households.

A growing number of social enterprises (SE) with an aim to address the access and affordability challenges faced by underserved communities have been emerging. It is estimated that there are roughly 2 million SEs in India working across sectors and geographies². They focus on developing business models which are innovative, dynamic and aspire to address the unmet needs of underserved communities. However, lack of access to finance, skilled manpower, enabling regulations and bureaucracy are some of the factors that inhibit growth of social enterprises.

With complementing characteristics, collaborations between the government and the SEs could yield better developmental outcomes. Leveraging their respective strengths, especially the reach of government and innovation capabilities of SEs, can potentially create greater impact in terms of bridging access gaps in the development sectors, compared to their individual efforts to create impact in silos.

This study aims to assess and compare SE and government delivery models to identify potential areas of collaboration between them. Based on the assessment, the study aims to generate recommendations around potential avenues for JICA to support SEs scale and facilitate greater collaboration between them and government delivery models.

¹ "Need for emergency medical services in rural India". *ET Healthworld*. The Economic Times. Web. 2018 ([Link](#))

² "Social Value Economy: A Survey of the Social Enterprise Landscape in India ". British Council, ANDE, Ennovent. 2016 ([Link](#))

METHODOLOGY

Intellicap adopted a comprehensive methodology to arrive at the comparable solution spaces, identify the areas of comparison and collaboration opportunities. The entire exercise was conducted across 5 key stages;



Exhibit 1: 5 key stages of the methodology adopted

Stage 1: Detail social enterprise landscape and identify solution spaces across sectors

This study examined a database of 600+ social enterprises and found that most enterprises had nascent but growing operations geared towards solving key development challenges in the country. The study categorized and analyzed social enterprises across sectors by the solution spaces in which they engage with customers.

The analysis confirmed that most of the SEs in India are focused on addressing the gaps created by acute lack of access to basic products and services for underserved population segments in six critical sectors; Healthcare, Education, Water, Sanitation, Agriculture and Energy. Within these six sectors, SE activity and delivery models can be further classified into ‘solution spaces’.

1. Healthcare

a. Primary Healthcare & Diagnostics

- Provision of essential preventive and curative care, and diagnostics services
- Last mile delivery of a broad range of services from basic health promotion and preventive care to treatment of chronic conditions
- Diagnostic services which aid in the detection of diseases

b. Secondary & Tertiary Healthcare

- Specialized consultative care and treatments to patients referred by primary care providers or otherwise
- Secondary care is usually needed for a short period of time and/or for brief but serious illnesses, injuries, or other health conditions. It includes skilled attendance during childbirth, intensive care, and medical imaging services
- Tertiary healthcare includes treating serious conditions like cancer, neurological disorders, cardiovascular disorders etc. These are relatively large and comprehensive facilities offering multiple specializations under one roof

2. Education

a. Schools

- Solutions encompassing pre-primary, primary and secondary education
- Delivery models offering parallel and alternative schooling solutions which include schools promoting creative activities, non-certified classes etc.

b. Technical and Vocational Education and Training (TVET)

- Solutions aiming to bridge the gap that exists between education, skill and employment by imparting employable vocational skills and training to unskilled workers
 - These solutions also support employment by customizing training programs suited to specific industries
 - c. Ed-Tech
 - Solutions leveraging technology to improve teaching-learning outcomes
 - Models include simple platforms providing educational content and connecting publishers, students and teachers
 - Emerging models integrate game based learning by the way of mobile applications and computer-based learning solutions
3. Sanitation
- a. Sanitation solutions
 - Provision of toilet and hygiene solutions in semi-urban and rural areas including household toilets, community toilets, sanitation hubs, sanitary napkins, hygiene kits etc.
 - Different kinds of models exist in this solution space ranging from basic manufacturing and distribution of sanitation products, operating & maintaining sanitation products/facilities and Pay-as-you-go solutions
 - b. Waste Management
 - Consists of waste collection, transportation, treatment recycling, disposal and waste to value solutions for both solid and liquid waste
 - Services are offered through various government models, public-private partnerships and pure-play SE models as well
4. Agriculture
- a. Pre-harvest
 - Models are centered on provision of technology and inputs such as fertilizers, irrigation technologies, soil preparation equipment, tractors etc.
 - b. Post-harvest
 - Solutions encompassing primary and secondary processing, storage and market linkages
 - Some models provide cross-cutting solutions such as crop inputs, machinery, advisory and other value chain offerings. Use of technology to collectivize farmers and disseminate information has strengthened models in this space
5. Energy
- a. Product design and manufacture
 - Most private models work in off-grid energy space design and manufacture renewable energy products, with most of them focusing on solar solutions, while the government offers grid connected electricity
 - Some models exist in biomass, wind and hydroelectric spaces as well
 - b. Service delivery

- Most models work in off-grid energy space and focus on distribution of renewable solutions, with most of them focusing on solar solutions, and some focusing on biomass, wind and hydroelectric segments
- Few models design, install and maintain renewable energy solutions for their customers

6. Water

a. Wastewater Management

- Solutions encompassing treatment of polluted water and other forms of wastewater, and grey water
- Some models focus on treating specific types of effluents such as those from laundry services, large-scale washing units, among others

b. Water harvesting and storage

- Models that focus on creating water storage and harvesting facilities that promote water conservation and conscious consumption

c. Water supply and distribution

- Most models have hybrid solutions that purify water as well as make it accessible to low resource settings at affordable rate

Stage 2: Establish selection framework to shortlist solution spaces for comparison

A 3 stage filtering process was adopted to identify solution spaces that offer maximum potential for comparison between SEs and government delivery models. The filtering stages included selection of solution spaces which have both government and SE delivery models, ability to innovate and probability of co-existence. The solution space selection framework is depicted below.

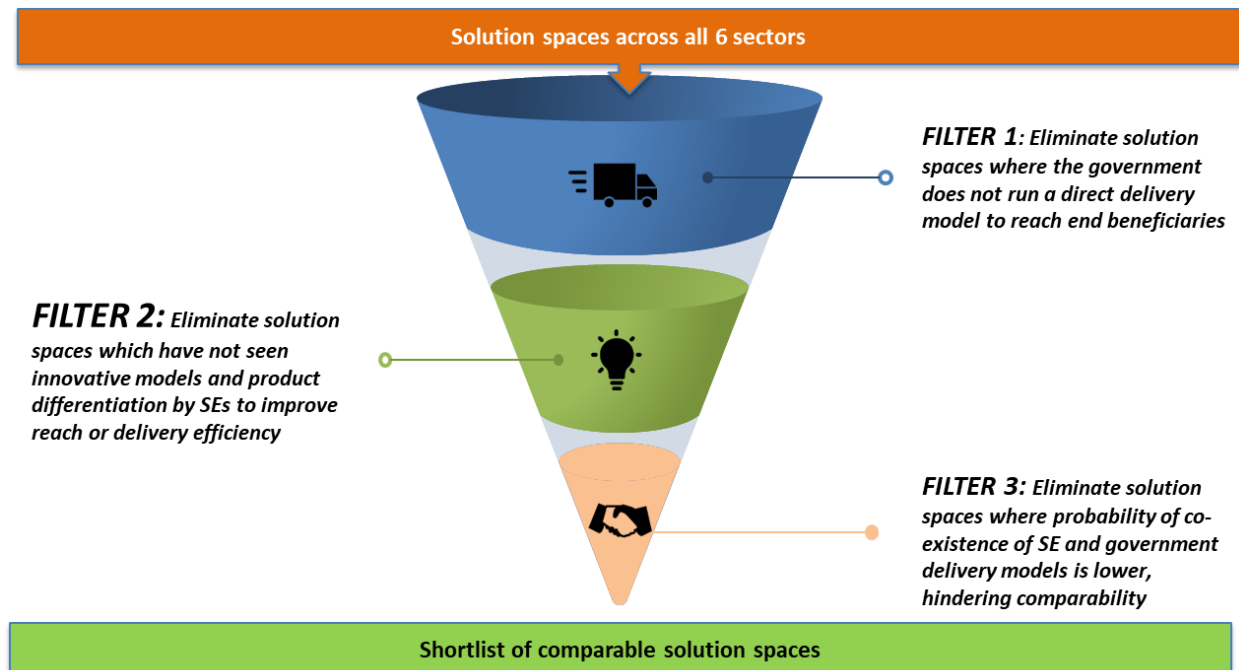


Exhibit 2: Solution space selection framework

The 3 filters were applied on the different solution spaces to identify those for which detailed assessment was undertaken. The eliminated solutions spaces under each stage of filtering were:

FILTER 1: Eliminate solution spaces where the government does not run a direct delivery model to reach end beneficiaries

In order to arrive at a comparative analysis, the researchers first eliminated those solution spaces where government does not adopt a direct delivery model. In other words, all those solution spaces where government does not offer any service or products to the end consumer have been eliminated. On application of the filters, the following solution spaces under each sector have been excluded from further analysis;

- Agriculture – Post harvest: In post-harvest, instead of direct delivery, the government focuses on facilitating infrastructure development. Government initiatives like setting up warehouses are primarily accessed by large processors and traders, and they tend to be located far away from smallholder farmers
- Energy – Product design and manufacturing: Government does not have a direct delivery model in the product design & manufacturing solution space within the energy sector. Such activity is outsourced to private sector companies
- Education – Ed Tech: Government does not have a direct delivery model in Ed-Tech. It plays the role of a facilitator by setting up online portals to bring publishers, schools and students together to facilitate access of knowledge.
- Water – Water storage: Most SE delivery models in this solution space are observed around promoting rain water harvesting. While the government has regulations around rain water harvesting and storage, they do not offer direct delivery of the same.

FILTER 2: Eliminate solution spaces which have not seen innovative models and product differentiation by SEs to improve reach or delivery efficiency

As part of the second filter, the researchers eliminated those solution spaces which offered limited opportunity for the SEs to innovate and differentiate their service offering. In such solution spaces, by focussing on improving processes and efficiency, the government service delivery model can be improved. Hence, in such cases there is very limited role for SEs to play. Post application of this filter, the Pre-harvest, Waste water management and Water supply solution spaces have been eliminated. The reasons for their elimination are indicated below;

- Agriculture – Pre harvest: This solution space does not allow SEs to significantly differentiate their offerings to expand reach and delivery efficiency, and charge a premium. In case of inputs like seeds and fertilizers for example, it is difficult for SEs to improve quality and delivery efficiency since farmers' willingness to pay a premium is limited.
- Water – Waste water management: Most waste water management systems across the country are owned by the government and operated under standard specifications and guidelines. This leaves limited opportunity for SEs to innovate in terms of delivery of services.

- Water – Water supply: Consumers view water as a free commodity. SEs in this solution space focus on community based water systems. Innovation quotient is found to be low both in terms of mode of delivery or technology

FILTER 3: Eliminate solution spaces where probability of co-existence of SE and government delivery models is lower, hindering comparability

The researchers observed that, out of the identified solution spaces, few of the solution spaces were dominated by the government both in terms of reach and scale. Due to this, these solution spaces offered limited opportunities for SEs to enter and develop a sustainable business models. Hence, such solution spaces were not considered for further analysis. Such solution spaces were prominent in sectors like Energy and Sanitation.

- Energy – Service Delivery: SEs providing off-grid solutions will find it difficult to co-exist in areas where grid electricity is available. Hence, the solution space will not allow comparability between SE and government delivery models.
- Sanitation – Sanitation facilities: The scope for SEs to deliver solutions in areas/locations where government has established sanitation infrastructure will be low. Government focuses on direct delivery through 2 different routes; development of community toilets in rural/urban slum areas and construction-cum-maintenance through public private partnerships (PPP). In both models, there is very limited SE activity.

Five solution spaces were shortlisted post application of the filtering process for further analysis and comparison.

- Healthcare – Primary healthcare and diagnostics
- Healthcare – Secondary and Tertiary Healthcare
- Education – Schools
- Schools – TVET
- Sanitation – Waste Management

Stage 3: Conduct field visits to select social enterprises and comparable government delivery providers

As a part of this study, the team conducted in-depth primary research comprising of in-person interactions with two SEs in each of the five identified solution spaces. The team undertook field trips to visit a total of 10 SEs spread across 7 states, namely Maharashtra, Telangana, Rajasthan, Gujarat, West Bengal, Haryana and Karnataka. In addition to this, detailed in-person and telephonic consultations were also conducted with 8 experts with considerable experience in the identified solution spaces in general and on government delivery models in particular.

Primary Healthcare	<ul style="list-style-type: none"> iKure Techsoft: It delivers primary healthcare through a hub and spoke model aided by an in-house data analysis software. Portfolio of services include on-site general medicines, maternal and child care, eye care, pathology services and telemedicine. Karma Healthcare: It operates 'e-Doctor' clinics that provide nurse-assisted online primary health consultations by qualified doctors, diagnostic services and referral services to secondary and tertiary care facilities. It aims to establish a pan India network of healthcare centres in rural and semi-urban areas. 	 
Secondary & Tertiary Healthcare	<ul style="list-style-type: none"> Vaatsalya Healthcare: It runs primary and secondary care hospitals all over Karnataka in rural and semi-urban towns. Basic specialities at each hospital includes paediatrics, gynaecology, medicine, surgery and physiotherapy. Cygnus Hospitals: It is a chain of 10 superspeciality hospitals serving rural and semi-urban areas across North India. Basic specialities include cardiology, oncology, physiotherapy, joint replacement, pediatrics, general surgery and nephrology among others. 	 
Schools	<ul style="list-style-type: none"> Sudiksha Knowledge Systems: provides affordable early childhood education through low-cost preschools run by recruiting educated housewives in low-income urban and semi-urban regions Bodhi School: It provides high-quality activity based education to children from impoverished backgrounds. It caters to children from pre-school to class 7 	 
TVET	<ul style="list-style-type: none"> Pipal Tree Ventures: Provides rural youth access to vocational training and placement support in the construction industry through a hub and spoke model and an innovative fee structure Edubridge: A skill development and vocational training organisation that aims to bridge the skill gap between semi-urban and rural youth and industry requirements across 'skilling' value chain 	 
Waste Management	<ul style="list-style-type: none"> Nepra Resource Management: A waste management company that operates under 'Lets Recycle' brand and has built a supply chain that connects dry-waste generators and collectors to recyclers SweepSmart: Links municipalities that need a waste solution to informal recycling sector entrepreneurs by ensuring a professional waste management system. They provide Design, Build, Manage and Transfer (DBMT) services to municipal bodies. 	 

Exhibit 3: Brief descriptions of selected SEs

Stage 4: Establish framework to benchmark impact created by SEs and government models

Intellicap analyzed the impact created by SEs and government delivery models across 7 areas; (1) Reach, (2) Service Delivery Outcomes, (3) Efficiency, (4) Quality of service, (5) Ease of access, (6) Behaviour change, (7) Employment and Gender empowerment. The parameters considered under each of these areas are indicated below;

Sr. No.	Areas of impact comparison	Details
1	Reach	The scale at which both the models are currently operating in terms of number of beneficiaries served and channels adopted for the same
2	Service Delivery Outcomes	Key service level outcome like maternal mortality rate, reduction of dropout rates, improvement in knowledge levels etc. The outcomes are at various levels for different solution spaces.
3	Efficiency	The operational and/or financial efficiency of the service delivery models
4	Quality of Service	The focus on improving service quality and customer

		satisfaction levels
5	Ease of Access	The convenience of accessing the services from the customer perspective
6	Behaviour Change	The level of community engagement undertaken by both the delivery models to drive positive behavior change
7	Job Creation and Gender empowerment	The number of jobs created (in total as well as at local level) along with the focus on integrating gender balance

Exhibit 4: Areas of impact comparison

Stage 5: Arrive at recommendations for program design to facilitate greater collaboration

The recommendations were arrived around (a) support required by SEs which will enable them to scale and (b) degree of complementarity of SE and government activities.

INSIGHTS AND FINDINGS

This section contains comparative analysis of government and SE delivery models in the five focus solution spaces, across the seven impact parameters identified earlier. Primary interactions with Social Enterprises and Government bodies revealed that across these seven impact parameters, key differentiators for the 2 delivery models are magnified on two parameters; the innovation in business model and the level of technology integration. While other parameters like customer type, human resources, capital deployed etc. do exist; the business model flexibility (Agility) and the technology integration (Technology) have been the most impactful.

- **Agility:** SEs tend to be agile and dynamic since they need to quickly adapt to mitigate challenges and leverage opportunities. They conduct extensive research in order to iterate their business models to improve their relevance to target markets and accelerate their scale-up.
- **Technology:** SEs consciously rely on technology to improve their processes and serve their target markets. Technology usage includes but is not limited to the use of internet, automation, software, cloud storage, artificial intelligence and modern equipment.

These two levers form fundamental pillars of SE business delivery models across the solution spaces and heavily influence their operational and strategic roadmaps. The influence of the 'Agility' lever on each of the seven identified impact parameters is rated 'high' or 'medium' or 'low' based on the ability of SEs to navigate challenges and react to opportunities through innovative approaches:

- *High:* High ability to navigate challenges and react to opportunities through innovative approaches
- *Medium:* Moderate ability to navigate challenges and react to opportunities through innovative approaches
- *Low:* Limited ability to navigate challenges and react to opportunities through innovative approaches

Similarly, the influence of the 'Technology' lever on the impact parameters is rated 'high' or 'medium' or 'low' based on the extent to which technology is integrated in various aspects of business operations:

- *High:* Technology is used to improve overall business functions
- *Medium:* Technology is used only for data capture
- *Low:* Technology is not used at all

PRIMARY HEALTHCARE SOLUTION SPACE

The Indian healthcare industry has been growing at a rapid pace and is expected to be worth USD 372 bn by 2022 on the back of rising incomes, healthcare awareness and access.³ However, despite this impressive outlook, India continues to perform poorly on most healthcare parameters. Government share of healthcare spending is only 25%, one of the lowest in the world.⁴ According to the World Health Organization (WHO), most of the healthcare expenditure in India, estimated at USD 63 per capita, comes from the private spending of households which forms approximately 65% of the total healthcare expenditure.⁵ Further, when available, health insurance is usually restricted to secondary or tertiary hospital care.

India has an infant mortality rate of 41 per thousand live births, higher than other developing countries such as Nepal, Bangladesh, Indonesia and the Philippines.⁶ Additionally, over 38% of the children under the age of five suffer from malnutrition.⁷ Maternal mortality rate of 174 per 100,000 live births in India is much higher than the Sustainable Development Goal (SDG) target of 70 per 100,000 live births.⁸ Over 26% of the deaths in the country are caused by communicable diseases and maternal, prenatal and nutrition conditions, which can be addressed by provision of adequate primary health care services and promotion and awareness of healthy lifestyle.⁹

Primary healthcare is the first point of contact with the health system and has strong referral linkages with secondary and tertiary healthcare institutions and facilities. It caters to healthcare needs at the earliest possible stage and integrates preventive, promotive, curative and rehabilitative health services. Such services also include dissemination of healthcare information with a focus on methods of identifying and preventing health problems; promotion of good sanitation practice, eating habits and nutrition requirements; maternal and child care, including family planning, among other things.

While the government delivery model is the primary model for healthcare delivery, given the density and rise of population in India, the existing infrastructure in rural areas is insufficient to cater to the healthcare needs of all people. This has prompted many impact-driven SEs to enter the space. By leveraging technology to diagnose and consult patients; and adopting innovative models to enhance reach such as the hub and spoke model and promoting telemedicine, they augment existing government efforts towards making quality healthcare accessible to all.

Government and SE Delivery Models

The government primary health care system in rural India is designed as a three-tier structure comprising of female volunteers called Accredited Social Health Activists (ASHAs), a network of Sub

³ "Healthcare Industry in India". India Brand Equity Foundation. 2019 ([Link](#))

⁴ "Domestic general government health expenditure (% of current health expenditure)". WHO database. 2016 ([Link](#))

⁵ "Current health expenditure per capita (current US\$), Out-of-pocket expenditure (% of current health expenditure)". WHO database. 2016 ([Link](#))

⁶ "Childhood Morbidity and Mortality in India – Analysis of National Family Health Survey 4 (NFHS-4)". Indianpediatrics.net. 2018 ([Link](#)),

"Mortality rate, under-5 (per 1,000 live births)". World Bank Database. 2017 ([Link](#))

⁷ "Prevalence of stunting, height for age (% of children under 5)". World Bank Database. 2015 ([Link](#))

⁸ "National Health Profile". Central Bureau of Health Intelligence. 2018 ([Link](#))

⁹ "Cause of death, by communicable diseases and maternal, prenatal and nutrition conditions (% of total)". World Bank Database. 2016 ([Link](#))

Centres (SCs) and Primary Health Centres (PHCs). ASHA workers are usually the first point of contact for people seeking healthcare and general awareness, who are then referred to the other tiers.

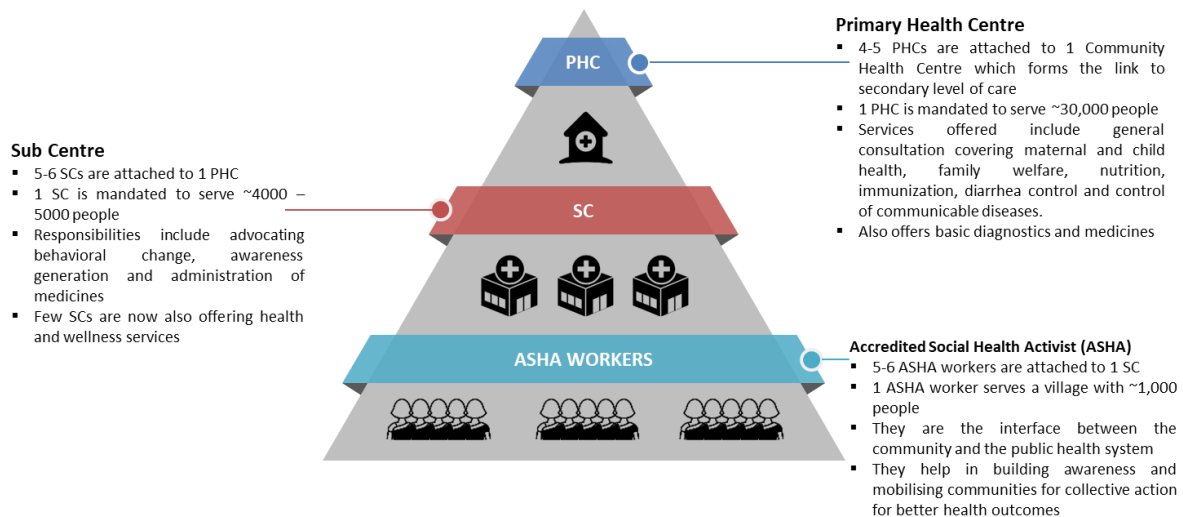


Exhibit 5: Primary healthcare structure In India

Indian primary care system concentrates on prevention of various communicable diseases and generating awareness around nutrition and sanitation with a special focus on maternal and child care. For most other health related issues, rural households tend to defer their decision of consulting doctors till the point it becomes unavoidable. High cost of healthcare and loss of productive hours are key reasons that explain such behavior.¹⁰ The public primary care system aims to provide services to overcome this resistance and places utmost importance to preventive and promotive care.

In terms of the social enterprises, for the purpose of the study, iKure Techsoft (iKure) and Karma Healthcare (Karma), two of the prominent primary healthcare social enterprises, were assessed. Both these SEs operate multiple clinics in a number of states across the country.

iKure delivers primary healthcare through a hub and spoke model aided by an in-house software and a network of doctors, health workers and equipment. It started in 2010 and has treated over 800,000 patients till date offering services including doctor consultation, ECG, blood tests, eye checkup, supply of medicines, healthcare products and telemedicine.

Karma leverages telemedicine to operate e-doctor clinics that provide nurse-assisted online primary health consultations by specialist doctors. It started in 2014 and has facilitated over 85,000 unique consultations till date. It also offers diagnostics, medicines and referral services to secondary and tertiary care facilities.

¹⁰ Primary interview



◀ A clinic operated by Karma Healthcare

An eye test being conducted at iKure



Auxiliary Nurse-Midwife ANM* at one of the sub centres ▶



▲ A government sub centre in Kolkata, West Bengal

◀ A government PHC in Karavali, Rajasthan

Exhibit 6: Snapshot of primary healthcare enterprises

Comparative Analysis of Impact Potential

1. Reach



Existing Scenario

The government delivery model has traditionally been the key medium for providing primary healthcare access for rural communities and has developed deep trust and credibility within the communities. While health is a state subject, there are certain programs that are rolled out nationally through the state infrastructure. For instance, Janani Suraksha Yojana (JSY) is an intervention for reducing maternal mortality implemented in all states. Launched in 2005, the annual number of beneficiaries grew from 739,000 per year in 2005-2006 to more than 11 million in 2010-2011.¹¹ Historically, whenever the government has taken up a specific healthcare cause like polio vaccination and maternal and infant mortality reduction on a mission mode, it has achieved substantial success. Given that the government delivery model offers free healthcare services, it becomes the first choice of rural people seeking healthcare. There are over 56,000 SCs and 25,000

¹¹ "The Impact of India's Janani Suraksha Yojana Conditional Cash Transfer Programme: A Replication Study". Natalie Carvalho & Slawa Rokicki. 2018 ([Link](#))

PHCs functioning in India.¹² While each PHC is mandated to cater to 30,000 people, in reality each serves approximately 52,000 people.¹³ The penetration also differs amongst states, with some states exhibiting deep coverage and others lagging behind. For instance, while there is one PHC for every 36,000 people in Rajasthan, West Bengal has one PHC for every 100,000 people.¹⁴ The government also deploys ASHA workers and mobile medical units (MMUs) to underserved areas in order to increase its reach. Presently there are over 972,044 ASHA workers and 1,741 MMUs registered under NRHM.¹⁵ The delivery model however, needs to scale further in order to achieve nationwide healthcare access.

Although SEs have recently started penetrating rural areas, given their budgetary constraints and core focus on delivering high quality paid curative services, they cannot compete with the government in terms of reach. They adopt innovative delivery models and offerings, but lag behind when it comes to scaling their operations. A well-established clinic operated by a

COMPARISON SNAPSHOT - REACH	
 Social Enterprise Delivery Model	 Government Delivery Model
50 <i>Patients served per day</i>	100 <i>Patients served per day</i>
<i>Improving reach by establishing credibility requires significant investment</i>	<i>Community trust enables higher penetration and reach</i>
<div style="background-color: #c00000; color: white; padding: 2px; display: inline-block;">CONS</div>	<div style="background-color: #006600; color: white; padding: 2px; display: inline-block;">PROS</div>

Source: Primary interview

SE registers a maximum footfall of about 50 patients per day, while this number is close to 100 for a typical PHC. This is because SEs are resource constrained in terms of their outreach efforts to generate community awareness; to build trust and generate demand for their services.

Application of levers by SEs to enhance reach

Given their relatively small size, SEs need to be agile in their approach and swiftly modify their models to reach and treat greater number of patients. iKure, for example, started as a healthcare solution provider to the government, not-for-profit organizations etc. Finding the model difficult to sustain, the enterprise forayed into last mile healthcare delivery in 2013. Through experimenting with a series of iterations, iKure operating model evolved into its current hub-and-spoke format. A hub is represented by a central clinic connected to 8 to 10 local spokes. Each spoke serves the population within a 5 kilometer catchment area, enabling the SE to expand its reach through focused catchment penetration.

Both iKure and Karma also experiment with a range of channels to generate awareness among patients. Some of these channels include conducting regular health camps, deploying local resources

¹² "Number of Sub-Centres, Primary Health Centres (PHCs) and Community Health Centres(CHCs)". Data.gov.in. 2017 ([Link](#))

¹³ "State/UT-wise Functioning of Primary Health Centres as on 31st March 2017". Data.gov.in 2017 ([Link](#)) and Intellicap analysis

¹⁴ Ibid.

¹⁵ "State wise number of Accredited Social Health Activist (ASHA) selected under National Rural Health Mission (NRHM) in India". Indiastat.com. 2018 ([Link](#))

to familiarize people about their offerings. They conduct surveys and capture data using mobile phones and make use of technology to store the same. To enhance customer loyalty, both iKure and Karma have also started distributing family health cards providing discounts for family treatments.



Most importantly, their outreach efforts vary based on the disease profile of the area and include specialized services like eye care and dental care apart from general treatment services. This helps them in customizing their services for the patients they serve and also raise awareness about their services among the communities.

Through these efforts, Karma’s nurse assisted clinics have covered a population of over 625,000 people and facilitated over 125,000 unique consultations till date. Similarly, iKure has covered a population of over 7.7 million people and treated over 800,000 people till date.¹⁶

2. Quality of Service

Existing Scenario

PHCs have a prescribed set of services that they offer at every location. This includes general outpatient department (OPD) and mother and child care besides focusing on nutrition and general well-being. Also, they are characterized by manual service delivery and limited use or lack of technology. Every PHC is mandated to have a qualified doctor to serve the patients. The government, however, experiences a serious challenge in filling the vacancies for the position of doctors at PHCs as it finds it difficult to attract and retain qualified doctors to work in rural areas. Over 60% of PHCs in India function with only 1 doctor and no support personnel. For instance, all PHCs in Gujarat have only 1 doctor. Similarly, over 80% of PHCs in Karnataka and Gujarat and over 75% of PHCs in Uttar Pradesh have only 1 doctor each.¹⁸ Additionally, primary interviews revealed that out of the total 913 PHCs in West Bengal¹⁹, 30% of them do not have doctors and the services at the PHCs are provided by general nurses and midwives instead.²⁰ The figure is over 40% in Rajasthan that has a total PHC strength of 2078.²¹

COMPARISON SNAPSHOT – QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Doctors are present throughout the consultation period at both Karma and iKure. In case of unavailability, replacements are duly identified to ensure uninterrupted service..</i>	<i>Presence of doctors varies across centres, however, doctor absenteeism as high as 43% and among health workers it is 39% across all facilities. In an audit conducted by an agency in Chennai, only 6% of the doctors were on duty during clinic hours.</i>
<i>Seamless access to a wider range of medicines and diagnostic facilities</i>	<i>Limited range and unavailability of medicines and diagnostic facilities</i>
CONS	PROS

Source: Primary interview and secondary research¹⁷

¹⁶ Primary interview

¹⁷ “Achieving quality in primary health care”. Anil P Pandit, Meenal Kulkarni, Swati Sonik. 2015 ([Link](#)). “Just 6% doctors are on duty at primary health centres: Survey”. Times of India. 2017 ([Link](#))

¹⁸ “Only one doctor in most primary health centres”. The Hindu. 2018 ([Link](#))

¹⁹ “State-wise Number of Sub-Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs) Functioning in India (As on 31.03.2018) “. Indiatat. ([Link](#))

²⁰ Primary interview

²¹ Primary interview, “State-wise Number of Sub-Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs) Functioning in India (As on 31.03.2018) “. Indiatat. ([Link](#))

Furthermore, PHC doctors are often required to double up as facility administrators and in effect, are physically available at the PHCs to consult patients for only about 2 days a week. On days that he/she is available, the facility receives high patient traffic which in effect, reduces the consultation time that the doctor can spend with each patient. Lack of access to specialist doctors at PHCs implies that a limited range of illnesses can be diagnosed and treated at the facility.

Additionally, medicines at PHCs are often unavailable and the range of diagnostic facilities is limited, making it difficult for the government to offer integrated services to patients. SEs on the other hand, devote maximum focus on ensuring that high quality service is provided at affordable prices. They offer solutions for a variety of health conditions, ensure doctors are available at all times and act as a one-stop shop for a patient's primary healthcare needs.

Application of levers by SEs to enhance their quality of service

SEs leverage both agility and technology to enhance their quality of offering, thereby increasing patient satisfaction levels. Every unit of iKure conducts over 5 camps and surveys every week to understand the healthcare needs of the people.²² Similarly, Karma conducts extensive research and draws up feasibility plans before opening an e-doctor clinic at a particular location. The objective is to offer specialized treatment in places with limited quality healthcare alternatives. It also conducts regular feedback calls with its patients to monitor patient experience. In addition to general physicians, they provide access to specialists such as ophthalmologist, gastroenterologist etc.

They also define the roles of all teams and keep management or administrative work separate from actual healthcare service delivery. This ensures that doctors only focus on treating patients and not get involved in other tasks.

SEs address the challenges such as unavailability of doctors by adopting technology innovations. Both iKure and Karma leverage telemedicine to allow doctors to serve patients virtually across multiple locations. SEs also actively partner with technology players to improve their range and quality of services. iKure for example, partners with technology companies like Health Cube and Leven Care to use point of care devices to get instant artificial intelligence (AI) based results for blood tests, cholesterol and glucose levels, uric acid, glaucoma among others. iKure is also collaborating with IBM and MIT to test technology which can help monitor and collect patients' heart related statistics remotely through wearables. These innovations will make the data available to doctors on a need basis and reduce the need for patients to travel to diagnostic centers and wait for their test results to be generated.



²² Primary interview

3. Ease of Access

Existing Scenario

Despite its considerable reach, the government delivery

model is found lacking in terms of ease of access to services due to a number of challenges. The existing network of PHCs and SCs proves inadequate, given the sheer size of underserved population. The government delivery model also operates MMUs to deliver services closer to the patients, however, this initiative has not been well integrated with PHCs. Patients may have to travel distances of as much as 15 to 20 kilometers to reach the nearest PHC. Including wait time at the PHCs, one round trip to the PHC may consume as much as 5 to 6 hours. This is a key reason why patients either defer their visits to the PHC or depend on the services of unqualified local healthcare providers like quacks. Regular availability of qualified doctors is another challenge with respect to healthcare access at PHCs. Furthermore, as highlighted above, The government finds it difficult to fill vacancies for qualified doctors at many PHCs.

COMPARISON SNAPSHOT – EASE OF ACCESS	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Patients need to travel a maximum of 5-6 kilometers to access clinics</i>	<i>Patients may need to travel up to 15-20 kilometers to access PHCs</i>
<i>Diagnostic test results generated within 15-20 minutes</i>	<i>Diagnostic test results are not available on the same day</i>
<i>Doctors are available as per schedule</i>	<i>Doctors are available on limited number of days and durations</i>
CONS	PROS

Source: Primary interviews

PHCs are also mandated to provide free access to 167 designated medicines and 15 basic diagnostic tests. However, the medicines are often not available causing patients to travel up to 10 kilometers to purchase them from shops at the maximum retail price. Getting instant diagnostic results is also not possible at PHCs and patients are often referred to private diagnostic facilities

Application of levers by SEs to enhance ease of access

SEs like iKure and Karma leverage technology and their agility to adopt innovations like hub-and-spoke models and e-clinics to establish physical points of care for catchment populations within a radius of 5 to 6 kilometers. In addition to cutting down travel distance and time, SEs strive to take healthcare access to their doorsteps by deploying MMUs equipped with doctors and essential diagnostic devices. They ensure availability of MBBS doctors at their clinics which operate for 9 to 10 hours per day.

SEs adopt technologies like telemedicine and AI-enabled cloud-based software platforms to provide shared medical services by allowing specialist doctors to serve patients virtually at clinics across multiple locations. Leveraging technology and agility, SEs integrated diagnostics, pharmacy and referral services into their models to further improve ease of primary healthcare access.

iKure and Karma adopt point of care devices which generate diagnostic test results within 15 to 30 minutes, enabling patients to access further consultations based on the results on the same day. For more advanced diagnostic tests which are not available at their clinics, they assume the

responsibility of collecting blood samples, sending them to accredited laboratories and sharing test reports with doctors and patients.

In addition, to reduce the out of pocket expenses for the patients, they either have their own pharmacies or partner with nearby pharmacies to provide prescribed medicines at subsidized prices. SEs also provide referral services based on databases of doctors, their specializations and availability at secondary and tertiary care hospitals.



4. Efficiency

Existing Scenario

The government delivery model lags behind SEs with respect to efficiency in terms of wait time and operations. It also lacks the ability to capture and use data by leveraging technology to deliver faster and smoother access to primary healthcare services.

A PHC typically serves about 6,000 patients per month on average. Patients contend with high waiting time on days the doctor is available. In order to accommodate all patients, average time spent by doctor per patient can be as low as one minute. PHCs record patient data manually in registers and share the same with the block level medical health officer, based on which medicines and consumables stocks at the PHC are replenished.

Usually, there is limited technology application in collecting and analyzing such data. However, the Mohalla Clinic model (refer case box below) implemented by the Delhi government is an exception and is trying to leverage technology to improve service delivery efficiency. The Indian government also mandates PHCs to use Pregnancy, Child Tracking and Health Services Management (PCTS) software to track health status of pregnant women and infants.

COMPARISON SNAPSHOT – EFFICIENCY	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Low patient waiting time of 10 to 15 minutes</i>	<i>Patient waiting time can be as high as 1 or 2 hours</i>
<i>High average doctor consultation time of 10 minutes per patient</i>	<i>Doctor consultation time per patient can be as low as 1 minute</i>
<i>Monthly operating expenses per patient is as high as INR 150 for each clinic/ unit</i>	<i>Monthly operating expense per patient is INR 50 or lower for PHCs</i>
<i>One time set up cost for SEs like Karma is as low as INR 800,000</i>	<i>One time set up cost excluding land is INR 2,000,000</i>
CONS	PROS

Source: Primary interviews

In contrast, enhancing operational efficiency is a key objective for SEs. SEs consciously leverage technology and adopt an iterative approach to enhance their efficiency in terms of faster service delivery, backend process optimization and service quality improvement. By adopting innovative approaches, SEs are able to significantly reduce patient wait time and increase consultation duration per patient.

In terms of financial efficiency however, the government delivery model outperforms SEs by virtue of its reach and scale. The average monthly operating expense of a PHC is about INR 300,000 which means that the government spends approximately INR 50 per patient. In contrast, a typical hub-and-

spoke unit of iKure serves about 2,000 patients per month with a monthly operating outlay similar to that of a PHC, implying per patient operating cost of INR 150. Similarly, Karma spends about INR 30,000 per month as operating expense for a typical e-clinic to serve about 300 patients, indicating an operating cost of INR 100 per patient. This highlights the need for SEs to increase their reach and footfalls to benefit from economies of scale.²³

Mohalla Clinics- Redefining primary care in Delhi

The idea of Mohalla Clinics originated from the concept of MMUs and the realization that it was not sustainable in the long run. These clinics provide free healthcare within a walking distance of 2-3 kms with assured availability of basic health services, medicines and diagnostic tests. They aim at treating over 90% of health problems at this level, thereby reducing the number of patients in need for referrals.

- **Specialist services:** Specialists including paediatricians, gynaecologists and ophthalmologists are available on a weekly basis
- **Location:** Locations decided with inputs from local community/ surveys and verification of sites by a team of health personnel
- **Financing:** Construction cost of each clinic is estimated to be INR 2,000,000. Most of them are being operated in rented accommodations
- **Use of Technology:** Use of vending machine for patient queuing, electronic storage of patient record along with the use of tablets for data compilation and prescription writing
- **Doctor engagement:** Private doctors are recruited at “fee for service” basis at the rate of INR 30 per patient as consultation charges.

(Source: Journal of Family Medicine and Primary Care , 2017 and primary interview)

Exhibit 7: Short note on Mohalla Clinics

Application of levers by SEs to enhance efficiency

SEs leverage their agility and technologies like AI, cloud based data storage and data analytics to facilitate faster and more efficient delivery of a comprehensive suite of healthcare services. iKure, for instance has developed its own cloud based software called WHIMS, which enables capture and analysis of patient information for health screening, early detection and monitoring of diseases. The software also integrates dedicated modules for doctors, employees, and medicine supply chain management. Similarly, Karma has developed an AI-enabled technology platform to provide remote access to specialized doctors and digitally record extensive patient related data. The AI platform has an inbuilt range of about 450 health complaints/conditions and their corresponding diagnoses listed into the system. Based on diagnoses made by the specialist doctor via an in-built video conferencing facility, the system throws up suggested names, courses and dosage of medicines to be prescribed from a digitized list of medicines. Such a clinical decision support system (CDSS) through extensive data capture supports specialist doctors to remotely diagnose patients and take appropriate clinical decisions.



²³ Operating expenses refer to the expenditure incurred as a result of performing the normal business operations. It does not include any one-time or initial investments.

In addition to efficient delivery of patient care, SEs also exhibit a high degree of improvisation in applying technology for process optimization and service quality enhancement. Technology platforms adopted by SEs facilitate automated mapping of patients to doctors thereby reducing patient wait time. In Karma’s e-clinic model for example, specialist doctors are available virtually for specific durations on specific days of the week. Its AI-based software platform automatically builds and maintains a queue of patients across different locations for each specialist doctor. In effect, patient wait time is reduced to only 10 to 15 minutes. The system also ensures average consultation time of about 10 minutes. The software platforms integrate automated medicine pricing and inventory management systems. They also capture video recordings of each patient consultation which helps in monitoring service quality.

5. Service Delivery Outcomes

Current Scenario

PHCs regularly collect and report data on various health outcomes such as maternal and infant mortality rates, change in health indices etc. to inform the government’s healthcare policies and strategies. The data collected however, often lacks accuracy due to incomplete datasets collected manually by scarce base of human resources deployed by the government such as ASHA workers and Auxiliary Nurse Midwives (ANMs). A study conducted in 2014 by USAID assessed that only 45% of public healthcare delivery facilities in India had adequate personnel trained in data capturing and reporting.²⁴

COMPARISON SNAPSHOT – SERVICE DELIVERY OUTCOMES	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Rigorous data capture and analysis using technology</i>	<i>Patient data is mostly captured manually</i>
<i>Data collected is seldom used for measuring broader delivery outcomes</i>	<i>Data is used to monitor broader delivery outcomes like maternal mortality reduction</i>
CONS	PROS

Source: Primary interviews

Additionally, there are large disparities among states on various indicators. The indicators of some States are comparable to that of some upper middle income countries and high income countries. For instance, Neonatal Mortality Rate (NMR) in Kerala is similar to that of Brazil or Argentina. However, other States have outcomes similar to that of the poorest countries in the world. NMR in Odisha is close to that of Sierra Leone. To motivate States to improve overall population health and outcomes, the Government has now launched an initiative called the Health Index to measure their performance. Started in 2017, it is a score incorporating 23 indicators covering key aspects of health sector performance.²⁵

Similar to the government, SE’s collect and analyze a significant amount of patient data they generate using technology, to improve monitor and improve their services. However, due to limited

²⁴ “Overcoming data challenges in tracking India’s health and nutrition targets”. Observer Research Foundation. 2016 [\(Link\)](#)

²⁵ “Healthy States Progressive India”. NITI Ayog. 2019 [\(Link\)](#)

bandwidth and financial constraints, they do not actively use the data for broader delivery outcomes such as improvement of health parameters of their catchment population.



Application of levers by SEs to enhance service delivery outcomes

SEs leverage technologies such as cloud based software and AI to analyze the data they collect. Rigorous data analysis helps them design strategies for enhancing the range and quality of their service portfolio. Monitoring and reporting of data on broader health outcomes achieved is driven by the mandates of their donors and investors.

6. Behavior Change

Existing Scenario

The government delivery model is in a preeminent position to drive required healthcare related behavior change in rural areas, given its thrust on preventive and promotive healthcare delivery. PHCs and SCs through their longstanding association with rural populations, have developed a deep connect and credibility with them. The government deploys a network of frontline health workers called ASHA workers who are the first point of contact for health related needs of rural households. They mobilize communities and create awareness on various health aspects such as proper diet, nutrition, sanitation as well as offer services

COMPARISON SNAPSHOT – BEHAVIOUR CHANGE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>SEs conduct over 5-6 camps every week to raise awareness and market their products</i>	<i>ASHA workers are mandated to visit families daily to promote health practices for up to 2 hours every day, for up to 4 or 5 days a week</i>
<i>SEs focus on curative care and view awareness generation initiatives as non-core activities</i>	<i>The model is best positioned to drive behaviour change given their focus on preventive and promotive care</i>
CONS	PROS

Source: Primary interviews

for maternal and child care. National Rural Health Mission (NRHM) guidelines prescribe that they visit families in their allocated communities for up to 2 hours, for at least 4 or 5 days a week to encourage preventive and promotive healthcare.²⁶ Traditionally due to poor availability of doctors at PHCs, rural patients rely on unqualified health practitioners or quacks (refer case box below). However, due to the intense awareness generation initiatives by the government and SEs in underserved areas, patients are realizing the benefits of getting consulted by qualified doctors.

SEs base their business models primarily on paid curative care (which comprises consultations, diagnostics and medicines) and referral services. Although they also undertake preventive and promotive services to generate awareness, these services are akin to marketing efforts towards demand generation and increasing footfalls for their curative services. SEs struggle to allocate necessary resources and budget for awareness generation and counseling services but are forced to undertake them in absence of required ecosystem support for adequate demand generation.

Indian Quacks – A parallel informal healthcare delivery channel

Quacks are widespread in rural India with there being as many as 1,000,000 of them practicing

²⁶ “Guidelines: Accredited Social Health Activist (ASHA)”. NRHM. [\(Link\)](#)

allopathic medicine in the country and being the first source of primary care for rural people. They do not possess the required medical qualifications and hence, have been deemed illegal by the Supreme Court of India. Most of them are compounders, assistants to doctors, lab technicians, medical store owners and unqualified practitioners of Ayurvedic medicines among others. Since they are locals from the community they are able to exercise huge influence over people making it easier for them to convince patients of their treatment which in most cases includes high dosage of antibiotics and injections leading to quick results which might or might not be the correct treatment.

Source: Indian Medical Association (IMA), 2013- <http://imagesb.com/anti-quackery/>

Exhibit 8: Short note on Indian quacks



Application of levers by SEs to drive behavior change

Despite the fact that driving behavior change is not a core competency and business focus of SEs, they leverage their agility to opportunistically make efforts to generate health awareness and as sourcing mechanisms. SEs deploy outreach health workers to understand the needs of patients to enable them to curate relevant health services as well raise awareness on good health practices. Every health worker deployed by iKure, for instance, visits 10 to 15 houses daily for generating health awareness and each hub-and-spoke unit organizes about 6 health awareness camps per week. SEs also enter into partnerships with other organizations to run awareness campaigns. iKure for example, has partnered with a sanitary napkin provider to promote and distribute over 15,000 napkins to target communities.

7. Job Creation and Gender Empowerment

Existing Scenario

The government delivery model aims to attract qualified doctors and create local jobs. However, it faces significant challenges in securing and motivating the requisite number doctors to take up the positions at rural PHCs. A typical PHC employs one MBBS doctor, two nurses, one lady health supervisor, two ANMs, one lab technician, one pharmacist and one ward boy. Similarly, a sub-center employs one female ANM, one male health worker and a voluntary worker to help the ANM. Additionally, approximately five to six ASHA workers are attached to each sub-center. The government prioritizes employing local resources for most of the positions, except for doctors. Similar to PHC's, SEs employ doctors, paramedics and health workers, with a conscious focus of hiring local resources.

COMPARISON SNAPSHOT – JOB CREATION & GENDER EMPOWERMENT	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>SEs like Karma have atleast 2 healthcare staff in a clinic and over 4 doctors available remotely at all times.</i>	<i>1 PHC is mandated to have 9 health personnel for different job roles</i>
<i>SEs like Karma have a gender ratio of 60% in favour of women</i>	<i>Female doctors comprise only 17% of all doctors in the country. However, over 90% of nurses are women</i>
<i>Explicit focus on delivery of services for women is limited</i>	<i>Strong emphasis on delivering healthcare for women</i>
CONS	PROS

Source: Primary interviews and secondary research²⁷

²⁷ "Situation Analysis of the Health Workforce in India". Public Health Foundation of India. [\(Link\)](#)

The gender ratio of human resources in primary healthcare is skewed in favor of men, with both the PHCs and SEs employing more men than women. While some SEs like Karma have a gender ratio of 60% in favour of women, overall the ratio echoes the ratio of the entire healthcare sector where only 38% percent of all health workers are women.²⁸ Since recruiting the desired number of doctors is a big challenge, maintaining gender diversity takes a back seat. However, over 90% of nurses in both the models are women.

With respect to beneficiaries, the government delivery model has a strong focus on mother and child care including maternal, reproductive, newborn and child health. SEs on the other hand, focus on disease profiles and health indices of each location rather gender. Both SEs and government delivery models however, organize separate awareness camps for women, covering areas such as menstrual hygiene, reproductive health and pregnancy monitoring.

Application of levers by SEs to enhance job creation and gender empowerment

There is no explicit application of the two levers with respect to job creation and gender empowerment. However, in case of job creation, SEs are trying to find different ways of recruiting and retaining different resources. For example, Karma and iKure provide requisite training to local resources and introduce attractive incentives structures to motivate and retain people. SEs hire nurses and outreach workers from local communities and equip them with necessary training. Although SEs by design, do not specifically focus on women, they are often mandated by donors supporting them to prioritize interventions for women and children. At Karma's donor funded clinics 70% of patients are either women or children.

Among the 7 impact parameters, high influence of the levers is visible in enhancing quality of service, ease of access and efficiency. Reach and behavior change are moderately impacted by the two levers. While technology is the primary lever in case of enhancing data collection to help in measuring service delivery outcomes, agility plays an important role in job creation with SEs able to implement innovative hiring and retention strategies. Both levers exert limited influence over these two parameters.

²⁸ "The Health Workforce in India". WHO. 2016 ([Link](#))

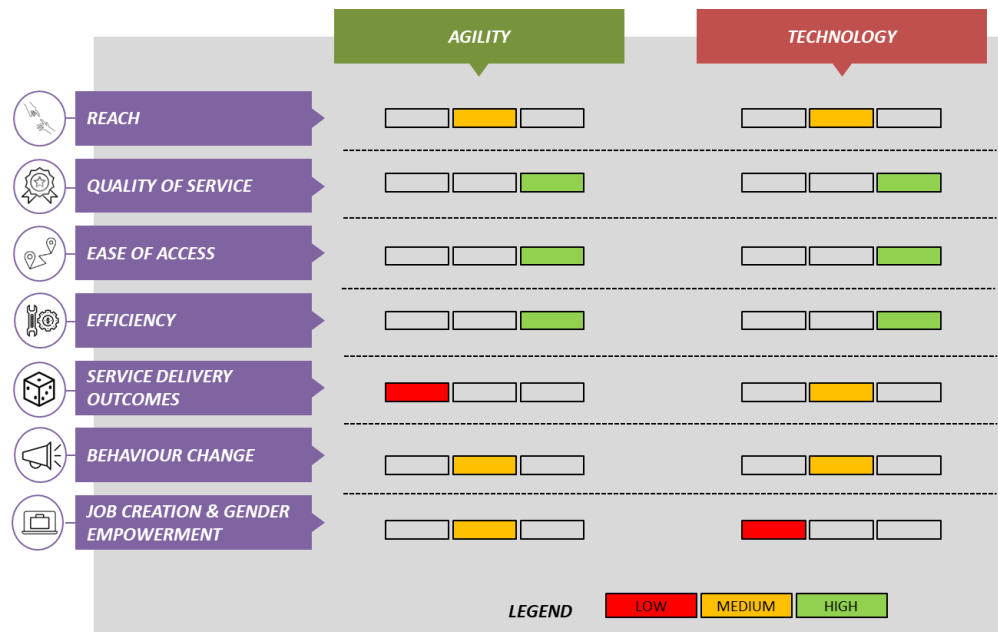


Exhibit 9: Intensity of levers across impact parameters

Opportunities for Collaboration

The above analysis indicates areas of relative strengths and weaknesses of the government and SE delivery models. More importantly, the analysis surfaces a set of aspects where the government and the SEs require support and can potentially complement each other. For SEs, the two key aspects are (a) the need to accelerate demand generation by expanding reach and (b) access to capital to fund growth. The government delivery model needs support in (a) improving its efficiency, (b) enhancing service quality and (c) ease of access to its services. Based on the emerging elements of complementarity, following are some indicative collaboration avenues that the government and the SEs can explore.

- **The government can allow SEs to use the existing PHC infrastructure through a public private partnership (PPP) model to deliver their services.** Such a collaboration mechanism may prove strategic in case of PHCs where appointment and retention of doctors is a challenge. This has the potential to enhance provision of high quality primary healthcare delivery to the catchment population and at the same time, help SEs scale. While services provided by nurses at the PHC can continue, SEs can combine the services of a trained nurse and the power of their technology platforms to deliver virtual access to specialist doctors, diagnostics, medicines and referral services. The credibility enjoyed by PHC and existing footfall at PHC will help SEs tap the existing demand and break even faster. Access to pre-existing infrastructure can also significantly reduce the SEs' capital requirement.
- **Government can provide a mandate to SEs to operate Health and Wellness Centers (HWC) which it aims to open under its Ayushman Bharat Yojana (Healthy India Scheme) launched in 2017.** The government has set itself an ambitious goal of establishing 150,000 HWCs within existing sub-centers to bring primary healthcare services at the doorsteps of India's rural population. HWCs aim to provide a range of services including maternal and child health services, treatment of non-

communicable diseases, eye care, dental care etc. SEs can apply their technology-enabled service delivery models to provide access to virtual specialist doctor consultations through telemedicine and deliver required diagnostic services at the HWCs. Technology-enabled granular patient data collection and analysis can help inform government policy decisions and interventions. Automated medicine inventory management system can enable tracking of status and managing of inventory across all the HWCs operated by SEs.

- **The government in partnership with donors can introduce innovative financing mechanisms to help SEs to scale their innovations and amplify their impact through affordable and timely primary healthcare delivery.** One of the biggest challenges faced by SEs in scaling their primary healthcare delivery models is access to requisite capital. Innovative mechanisms like impact bonds, outcome based mechanisms and impact funds dedicated to scaling innovations in the primary healthcare sector can significantly augment the delivery of capital to SEs and thus enhance the quality of India's primary healthcare delivery infrastructure. The India Health Fund (IHF), a collaborative initiative led by Tata Trusts in partnership with donors and philanthropists, is a case in example. IHF supports innovations and technologies through strategic projects designed to combat tuberculosis and malaria which cause 420,000 deaths in India annually.

SECONDARY AND TERTIARY HEALTHCARE SOLUTION SPACE

The low-income population in India faces significant hardships due to inadequate access, high cost and poor quality of healthcare. According to data published by the Ministry of Health, there is one government doctor available for every 11,082 people across the country, while the recommended ratio is 1 for every 1,000.²⁹ India needs an additional 2 million doctors by 2030 to match global benchmarks as well as its latent demand for healthcare access.³⁰ Similarly, with 1.5 nurses for every 1000 people, India needs an additional 2.4 million nurses to adequately meet patient demand.³¹

Secondary healthcare represents the second tier of health system, in which the patients from primary health care are referred to specialists in higher hospitals for further treatment. It also includes provision for primary care and aims at attending to people's curative healthcare needs. It covers hospital care and acute care including hospital admission, attendance in childbirth, advanced diagnostic services and facilities for intensive care units. The tertiary healthcare system comprises of district hospitals and medical colleges. Within the solution space, SE activity is largely limited to secondary healthcare solution space. Given this, this section focuses on a comparative analysis of SE and government secondary healthcare models.

Similar to primary healthcare, government is the dominant healthcare provider when it comes to secondary and tertiary healthcare solution spaces. However, the current government infrastructure is not sufficient to cater to the growing population and healthcare needs of the people. With insufficient number of SCs and PHCs, public secondary healthcare infrastructure also becomes responsible to cater to people's primary healthcare needs, especially in the rural areas. Additionally, many specialties such as cardiology are not adequately provided at public healthcare facilities due to reasons such as insufficient manpower etc. SEs are trying to bridge this gap by starting operations in underserved areas. These hospitals are professionally managed and have provisions for specialties which might not be available at public facilities. Through their existence, the patient load of public facilities is also getting reduced.

Government and SE Delivery Models

Government's secondary healthcare system in India is designed as a two tier structure comprising of Community Health Centres (CHCs) and the Sub-District or Sub-Divisional hospitals (SDHs). CHCs provide curative medical services for cases referred by PHCs and for cases in need of specialist care. The secondary healthcare system forms the middle layer of the Indian public healthcare system. It provides linkages to the tertiary care ecosystem of the country.

²⁹ "National Health Profile". Central Bureau of Health Intelligence. 2018 ([Link](#))

³⁰ "Health Management Workforce for India in 2030". Ritika Tiwari, Himanshu Negandhi and Sanjay P. Zodpey. 2018 ([Link](#))

³¹ "2015 Health Care Outlook, India". Deloitte. 2015 ([Link](#))

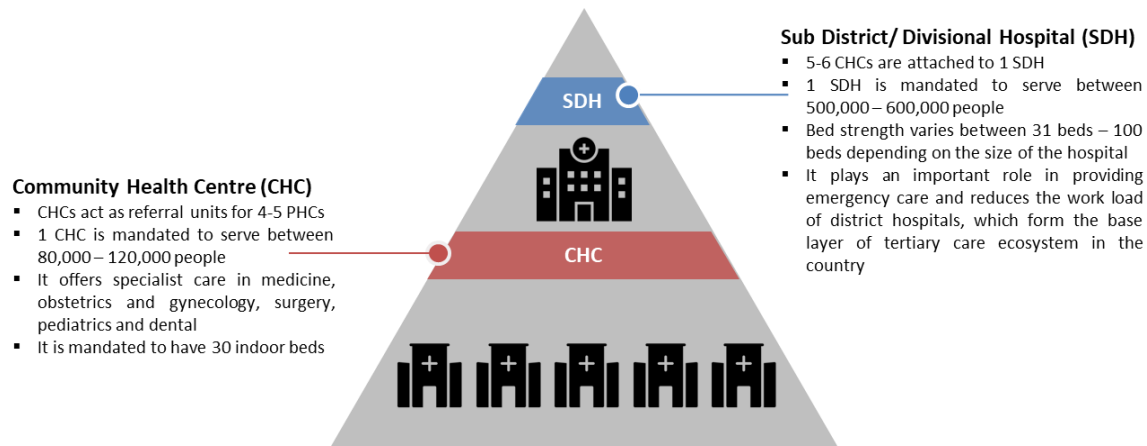


Exhibit 10: Secondary healthcare structure in India

Due to inadequacies in primary healthcare infrastructure, CHCs and SDHs also take on the role of providing primary healthcare services and thus offer preventive and promotive healthcare as well. With increase in awareness of the importance of healthcare services and roll out of national programs such as Ayushman Bharat³², the patient load at the secondary care facilities is increasing. To put this into perspective, currently India has 1 public bed for every 1,050 patients which is below that of other large countries such as Japan which has 1 bed for 85 patients and the USA where the ratio is 1 for 350.³³ This highlights the need for increasing the number of beds in order to maintain a healthy bed to patient ratio. The increased demand on existing secondary health care delivery infrastructure provides an opportunity for SEs to augment secondary healthcare delivery.

For the purpose of the study, Vaatsalya Healthcare (Vaatsalya) and Cygnus Hospitals (Cygnus), two notable multi-specialty secondary healthcare enterprises, were assessed. Both these SEs operate multiple hospitals in a number of cities across the country.

Vaatsalya started in 2005 as a mother and child hospital and later expanded to include other specialties. Currently it offers general surgery, orthopedics, physiotherapy, gynecology and pediatrics among other specialties. Through its chain of 7 hospitals, Vaatsalya aims to offer round the clock affordable primary and secondary care at rural areas and semi urban cities of Karnataka.

Cygnus operates a chain of 10 multi-specialty secondary and peripheral tertiary care hospitals in underserved towns on the periphery of New Delhi. It started in 2011 and offers emergency care in cardiology, neurology, gastroenterology, gynecology etc. The hospitals are strategically located close to the highways surrounding New Delhi, where chances of road accidents are the highest and which necessitates immediate delivery of emergency care.

³² Refer to the glossary

³³ "2015 Health Care Outlook, India". Deloitte. 2015 ([Link](#))



◀ A hospital operated by Karma Healthcare in Karnal, Haryana



▶ An operation theatre operated by Vaatsalya in Gadag, Karnataka



◀ A district hospital in Karnal, Haryana



▶ Waiting area of Vaatsalya in Gadag, Karnataka

Exhibit 11: Snapshot of secondary healthcare enterprises

Comparative Analysis of Impact Potential

1. Reach

Existing Scenario

Similar to primary healthcare, the government delivery model has traditionally been the key medium for providing secondary healthcare access for primarily rural and also urban communities. Additionally, the fact that services are offered for free helps in reaching out to and attracting greater number of patients. There are over 5,568 CHCs and 1,130 SDHs functioning in India.³⁴ Much like in primary healthcare, the distribution of CHCs and SDHs vary across states where some states exhibit good coverage, while others lag behind. For instance, in Haryana, the secondary care infrastructure with respect to both CHCs and SDHs is falling short of the mandate, with 1 CHC serving over 214,000 people and 1 SDH catering to over a million people. In comparison to this, Karnataka's SDH coverage is line with the mandate where 1 SDH caters to 472,000 people. Its CHC coverage however, is similar

³⁴ "State-wise Number of Sub-Centres (SCs), Primary Health Centres (PHCs) and Community Health Centres (CHCs) Functioning in India (As on 31.03.2018)". Indiastat. [\(Link\)](#)

to Haryana and is low where 1 CHC serves over 333,000 people. Scarcity of infrastructure leads to high footfall in existing facilities. A CHC registers a maximum footfall of about 200 patients daily and

an SDH registers over 700 patients per day. To cater to this footfall, there are on an average 80 beds in every government secondary care facility including CHCs and SDHs in Haryana and 140 beds per facility in Karnataka.

The current public infrastructure is inadequate to cater to the ageing and increasing population of the country. This challenge has led to the emergence of many SEs that offer secondary healthcare services. Given that majority of the population lives



in rural areas³⁵, many SEs that began their operations in semi-urban areas have started expanding to rural areas as well. While they bring with themselves innovative and agile business models, given their budgetary constraints and core focus on delivering high quality paid secondary care services, they cannot compete with the government in terms of reach and scale. A typical secondary care facility operated by an SE has a catchment area ranging between 15–20 kms. Each facility receives a footfall of 100-150 patients per day, including 20-25 for inpatient admissions. Each hospital of Cygnus receives a footfall of 150 patients per day and has a capacity of 100 beds. Vaatsalya, on the other hand, registers a footfall of 100 patients per day and has an average bed capacity of 60 beds.

Application of levers by SEs to enhance reach

Most SEs face budgetary and space constraints. However, they exhibit agility by partnering with the government and modifying their models in ways that ensure that they provide services that are most needed in a particular area and thus have the potential to treat maximum number of patients.

Both Cygnus and Vaatsalya have enrolled themselves under the Ayushman Bharat scheme in the anticipation that it would accelerate patient flow to their facilities. Treatment is delivered free of cost for such referred patients. The scheme reimburses the cost of treatment basis pre-determined rates set by the government.

Additionally, to understand the health profiles of their target market, both Vaatsalya and Cygnus conduct regular health camps in their catchment areas including at schools and community clubs. In addition to distributing pamphlets, Vaatsalya also leverages the reach of ASHA workers to familiarize people about the camps organized. By the way of these camps, SEs aim to collect information in order to adapt their offerings such that they can include specialties that will cater to the needs of most number of patients. This data is collected using mobile phones and stored digitally on

COMPARISON SNAPSHOT - REACH	
 <p>Social Enterprise Delivery Model</p>	 <p>Government Delivery Model</p>
<p>~125 Patients served per day</p>	<p>200 (CHC), 700 (SDH) Patients served per day</p>
<p><i>Improving reach requires considerable investment in terms of marketing effort</i></p>	<p><i>Community trust enables higher penetration and reach</i></p>
CONS	PROS

Source: Primary interviews

³⁵ "Rural population (% of total population)". World Bank Database, 2018. [\(Link\)](#)

computers for subsequent analysis. For instance, Vaatsalya started in 2005 as a clinic offering mother and child care services. However, once they studied their target market, they expanded their offerings to include other types of care including urology and orthopedics. Since SEs charge a premium for their offerings, it becomes important for them to understand their patient demographics and offer personalized care in a way that ensures maximum patient footfall.



The camps also help in generating awareness among patients and draw them towards availing the services offered by SEs. Patients referred to the hospital from the camps organized by Vaatsalya are offered free initial consultation at the hospital. This has helped Vaatsalya increase its footfall. Similarly, Cygnus has reached over 200,000 patients through camps and over 50% of these patients have made prescribed repeat visits to the hospital.³⁶

2. Quality of Service

Existing Scenario

Similar to public primary care facilities, CHCs and SDHs offer a prescribed set of services. CHCs are mandated to offer specialist care in medicine, obstetrics and gynecology, general surgery, pediatrics and dental care. Eye specialist services are offered at 1 out of every 5 CHCs.³⁸ SDHs on the other hand offer OPD, inpatient and emergency care including general medicine and surgery, general orthopedics, pediatrics, ophthalmology, dental care, diagnostics etc. In principle, CHCs, SDHs and district hospitals are mandated to act as First Referral Units (FRUs) in providing emergency obstetrics care and neonatal care (See box 3). However, out of the 6,698 facilities offering secondary healthcare services, only 2,428 operate as FRUs. Haryana has only 51 FRUs, out of which over 20% do not offer facilities for blood storage. Karnataka, on the other hand, has 230 FRUs but 40% of them do not have blood storage facilities.³⁹

Additionally, field observations indicated that the government’s neonatal intensive care unit (NICU) facilities were overloaded and could pose a health risk.⁴⁰ For example, each incubator at the facility visited accommodated 4-5 babies while ideally it should not handle more than 2 babies at a time.

COMPARISON SNAPSHOT – QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
SEs like Vaatsalya have 6 doctors per hospital available at all times	Shortfall for the positions of specialists observed at most CHCs and SDHs. At least 1,412 facilities in Uttar Pradesh do not have any doctors
Daily doctor to patient ratio of 1:15	Daily doctor to patient ratio of 1:50
CONS	PROS

Source: Primary interviews and secondary research³⁷

First Referral Units

An existing facility (community health centre, district hospital, sub district hospital etc. can be declared a fully operational FRU only if it is equipped to provide round the clock services for emergency obstetric and new born care, in addition to all emergencies that any hospital is required to provide. There are 3 critical determinants of a facility being declared as a FRU: (a) availability of

³⁶ Primary interview

³⁷ “With 1 Doctor Every 20,000 Patients, UP Government Hospitals Need Care”. NDTV. 2019 ([Link](#))

³⁸ “Indian Public Health Standards, Guidelines for Community Health Centres”. Directorate General of Health Service. 2012 ([Link](#))

³⁹ “State-wise Number of First Referral Units (FRUs) Operational under National Health Mission (NHM) in India”. Indiastat. 2018 ([Link](#))

⁴⁰ Primary interaction with a doctor

facilities to carry out emergency surgical intervention, (b) new born care and (c) blood storage facility on a 24 hour basis.

FRUs are expected to be provided certain basic services as follows:

- 24 hour delivery services
- Emergency obstetric care including surgical interventions and new born care
- Emergency care of sick children
- Full range family planning services
- Safe abortion services
- Blood storage facilities
- Essential laboratory services
- Referral (transport) services

(Source: Guidelines for operating First Referral Units, Department of Family Welfare)

Exhibit 12: Short note on First Referral Units

The government finds it difficult to attract and retain qualified personnel in rural areas due to challenges such as poor living conditions, weak infrastructure, professional seclusion and the stress of administrative work. Currently, there is an 81% shortfall of specialists at CHCs. Shortfall in Karnataka is relatively lower at 40%, while that in Haryana is an overwhelming 95%.⁴¹ At a CHC 1 doctor attends to over 50 patients in a day thus reducing the consultation time that the doctor can provide.⁴² Additionally, to make up for the shortfall, doctors from PHCs are mandated to do shift duties to provide emergency services at CHCs. This puts pressure on the already limited manpower available at PHCs and impacts quality of consultations at the primary healthcare level.

The government provides a list of essential medicines to be stocked at both CHCs and SDHs. Availability of medicines becomes a challenge due to logistical issues making it difficult for the government to offer integrated services to patients. SEs on the other hand, focus on delivering a cohesive set of limited services that meets key secondary healthcare needs of patients including diagnostics, treatment and medicine delivery.

Application of levers by SEs to enhance their quality of service

SEs leverage both agility and technology to enhance the quality of their offerings, thereby increasing patient satisfaction. They use their agility to attract, train and retain qualified medical professionals and ensure a healthy doctor to patient ratio. Additionally, they use modern equipment for performing healthcare procedures, thereby improving the quality of service offered.

They face similar challenges as the government delivery models when it comes to attracting qualified personnel. To address this, they offer attractive remuneration to doctors which is comparable and sometimes even more than what they would earn in a metro city.⁴³ Additionally, they hire nurses from local communities and train them regularly so as to enable them provide good quality patient care. Vaatsalya trains its nurses daily and also offers them hostel accommodation along with food. Similarly, Cygnus trains its nurses ten times in a month. It also trains ambulance operators on how to handle trauma in case of any emergency while transporting patients to a

⁴¹ "Health manpower in rural India". Health Management Information System. 2017 ([Link](#)) and Intellicap analysis

⁴² Primary interview

⁴³ Primary interview

Cygnus facility or from a Cygnus facility to a tertiary care hospital in the metro city. The objective of this training is to reduce transit deaths from the current 5 for every 10 patients transported to 3.⁴⁴



SEs employ a separate management team that looks after their hiring activities and ensures that adequate qualified doctors are available at all times to attend to patients. Cygnus has 20 full time doctors available daily for 8 hours. Individually, they attend to 7-8 patients per day. Vaatsalya ensures that 2 general physicians are available at all times, each attending to 25-30 patients per day.

By way of networking and continuous business development, SEs partner with various technology players to improve the range of available equipment for imaging and surgical procedures. These are regularly serviced and well maintained which enhances the quality of service and improves the result of health treatment.

3. Ease of Access

Existing Scenario

Given the size of underserved population, the existing secondary healthcare network and infrastructure is inadequate, both in terms of the manpower and physical touch points. A patient and her caregivers may spend over 8 hours in a round trip to a CHC or a SDH. Similar challenges exist in case of PHCs where people end up relying on the services of local unqualified healthcare providers. As a result, they never get a chance to experience the secondary care offered by CHCs and SDHs.

COMPARISON SNAPSHOT – EASE OF ACCESS	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Owing to their personalized offerings, SEs attract patient from as far as 50-70 kms</i>	<i>One round trip to a CHC/SDH may take over 8 hours</i>
<i>Doctors are available round the clock</i>	<i>Limited availability of doctors and services</i>
CONS	PROS

Source: Primary interviews

While Ayushman Bharat has made it easier for people in rural India to avail free of cost secondary and tertiary care at both public and empaneled private facilities, it also comes with certain challenges. While the scheme covers 1,350 medical packages⁴⁵, over one-third of the procedures including OPD are mandated to be provided only by the public sector.⁴⁶ When these services are not available at a CHC or other public facilities, rural patients are left with no other alternative for accessing treatment since they cannot afford to pay at private facilities.

Application of levers by SEs to enhance ease of access

SEs adapt their models to come up with solutions for challenges faced by patients while availing public secondary care in ways that make it easy for patients to access private healthcare. They offer personalized round the clock attention, innovative financing options and integrated offerings to their patients which help reduce overall time taken to seek healthcare.

SEs like Vaatsalya and Cygnus offer round the clock healthcare service via qualified MBBS doctors. Owing to their personalized service and attention to patient care, they attract patient traffic from as

⁴⁴ Primary interview

⁴⁵ National Health Authority website ([Link](#))

⁴⁶ Primary interview

far as 50 to 70 kilometers. Patient traffic especially increases at night when doctors are not available at public facilities. For instance, 50% of the admissions at Cygnus happens post OPD hours. All essential services in terms of diagnostics and a well-stocked pharmacy are available in-house which reduces the need for the patient to travel elsewhere, contributing to a reduction in overall travel time. They also provide referral services based on databases of doctors, their specializations and availability at tertiary care hospitals.



In addition to this, SEs also offer innovative financing options to patients who cannot afford to make lump sum payment for treatment. In certain cases where patients cannot to pay for procedures, Cygnus offers to accept payments in installments without charging interest and at other times offers discount on the overall amount to be paid by deducting bed charges and other fees so as to make it easy for the patient to pay for the treatment.

4. Efficiency

Existing Scenario

Public secondary healthcare facilities face similar challenges as primary healthcare in terms of operational efficiency and the speed of delivering quality healthcare. With over 6,000 patients visiting a CHC every month on an average, the time spent with a single patient is significantly reduced in an effort to attend to all patients. On days when patient traffic is heavy, a consultation can last for less than a minute. This directly impacts the quality of service delivered.

SDHs are mandated to have computers with internet connection for management information system (MIS) services and for information to flow from PHCs/CHCs to SDHs and from there to district hospitals and other organizations. While over 85% of the CHCs are equipped with a computer along with resources for MIS operations, their implementation is rarely observed at the facilities.⁴⁷ This results in manual capture and storage of data which increases scope of error and reduces operational efficiency.

COMPARISON SNAPSHOT – EFFICIENCY	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Low patient wait time of 15-20 minutes</i>	<i>Patient waiting time can be as high as 1 hour</i>
<i>High average doctor consultation time</i>	<i>Doctor consultation time as low as 1-2 minutes</i>
<i>Technology is used to store patient data</i>	<i>Limited use of technology is observed to store internal and patient data</i>
CONS	PROS

Source: Primary interviews

Application of levers by SEs to enhance efficiency

SEs leverage agility and technology to deliver quicker and more accurate delivery of healthcare services. They use their agility to define job roles and leverage technology to streamline internal processes which improves their operational efficiency.

⁴⁷ "Health manpower in rural India". Health Management Information System. 2017 ([Link](#)), primary interview and Intellectap analysis

To enhance effectiveness and efficiency of medical professionals, SEs keep management and administrative work separate from actual healthcare service delivery. This ensures that doctors only focus on treating patients and not get involved in other tasks. This contributes in keeping them motivated to do what they do best and increases time spent on individual patient consultation. By not getting pulled into administrative tasks, they are also able to serve more patients and increase the efficiency of their work.

While the application of technology is lesser than what is seen in the primary healthcare solution space, SEs offering secondary care have started storing electronic health records which will make it easier for doctors to track patient history and reduce consultation time. Cygnus has introduced electronic storage of all gastroenterology and endocrinology patient prescriptions and will soon be extending it to other functions as well. In addition to electronic health records, SEs also have automated management information systems to track inventory, medicines and internal data.



5. Service Delivery Outcomes

Current Scenario

Similar to primary healthcare, CHCs and SDHs regularly report data on various health outcomes. They are mandated to monitor various health outcomes which are used to inform policy decisions surrounding healthcare and also throw light on the overall health status of the country. The data collected, however, often lacks accuracy due to incomplete datasets.⁴⁸ Similar to the government, SEs collect and analyze a significant amount of patient data. This data, however, is not used for reporting purposes.

Application of levers by SEs to enhance service delivery outcomes

SEs leverage technology to collect and analyze broader impact data. They maintain digital notes of patient information and their health records that they use to assess hospital and doctor performance. Reporting of data is however driven by the mandates of their donors and investors.

COMPARISON SNAPSHOT – SERVICE DELIVERY OUTCOMES	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Rigorous data capture and analysis using technology</i>	<i>Patient data is mostly captured manually</i>
<i>Data collected is seldom used for measuring broader delivery outcomes</i>	<i>Data is used to monitor broader delivery outcomes like maternal mortality reduction</i>
CONS	PROS

Source: Primary interviews



6. Behavior Change

Existing Scenario

As highlighted earlier, the government delivery model is at the forefront of driving health-related behavior change activities in rural areas. These activities are mostly performed by ASHA workers

⁴⁸ “Overcoming Data Challenges in Tracking India’s Health and Nutrition Targets”. Oommen C. Kurian. 2016 ([Link](#))

and ANMs in their respective geographies and controlled at the PHC level. CHCs are mostly tasked to deliver various national health programs (NHP) such as the HIV/AIDS Control Program, National Program for Control of Blindness etc. These are delivered by offering essential diagnostic facilities at the centres and by engaging communities to raise awareness. They also offer counselling and education on various subjects such as early detection of mental disorders, hearing and visual impairments, promotion of healthy dietary and physical activities, stress management etc. In areas where there is insufficient coverage of PHCs, CHCs take on the role of driving behavior change and offering other primary care services.

COMPARISON SNAPSHOT – BEHAVIOUR CHANGE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>SEs view awareness generation initiatives as non-core marketing activity</i>	<i>The model is best positioned to drive behaviour change given their focus on preventive and promotive care</i>
CONS	PROS

Source: Primary interviews

While SEs focus on delivering quality secondary care, they conduct some preventive and promotive health camps to generate demand for their services and convince patients to visit their facilities.



Application of levers by SEs to drive behavior change

As discussed earlier, SEs use their agility to understand their target market and make strategic decisions about their offerings through data collected at health camps. These camps also act as a tool to raise general awareness and implement positive behavioral change among people.

7. Job Creation and Gender Empowerment

Existing Scenario

The government delivery model seeks to recruit qualified doctors and create local jobs. However, as discussed in earlier sections, it faces significant challenges in filling all vacancies. Like in primary healthcare, public secondary healthcare delivery model exhibits skewed gender ratio, with more male doctors and female nurses in the system. In terms of service delivery however, the government has a strong focus on women wellbeing including maternal and reproductive health.

COMPARISON SNAPSHOT – JOB CREATION & GENDER EMPOWERMENT	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Supports local job creation</i>	<i>Creates local job</i>
<i>Explicit focus on delivery of services for women is limited</i>	<i>Strong emphasis on delivering healthcare services for women</i>
CONS	PROS

Source: Primary interviews

A typical CHC is mandated to employ 8 medical personnel, 22 paramedical and 6 administrative staff. Similarly, a SDH with 31-50 beds employs 17 medical personnel, 45 paramedical and 12 administrative staff. Similar to CHCs and SDHs, SEs also employ doctors, paramedics, nurses and

employees for administrative duties. They have teams that focus on marketing and building awareness among communities about their offerings. Recruiting qualified doctors is a challenge for SEs as well and hence, maintaining gender balance is not a priority. However, similar to the government, they actively conduct camps for women around topics such as menstrual and reproductive health.

Application of levers by SEs to enhance job creation and gender empowerment

Most SEs are mandated to prioritize interventions for women and they do so by the way of their offerings and conducting various women centered awareness camps. Outside of this, limited application of agility or technology is observed to impact job creation or job empowerment.

Similar to primary healthcare, high influence of both the levers is visible in the context of quality of service, ease of access and efficiency. Reach and behavior change are moderately impacted by the two levers. Both levers exert limited influence over monitoring service delivery outcomes and job creation.

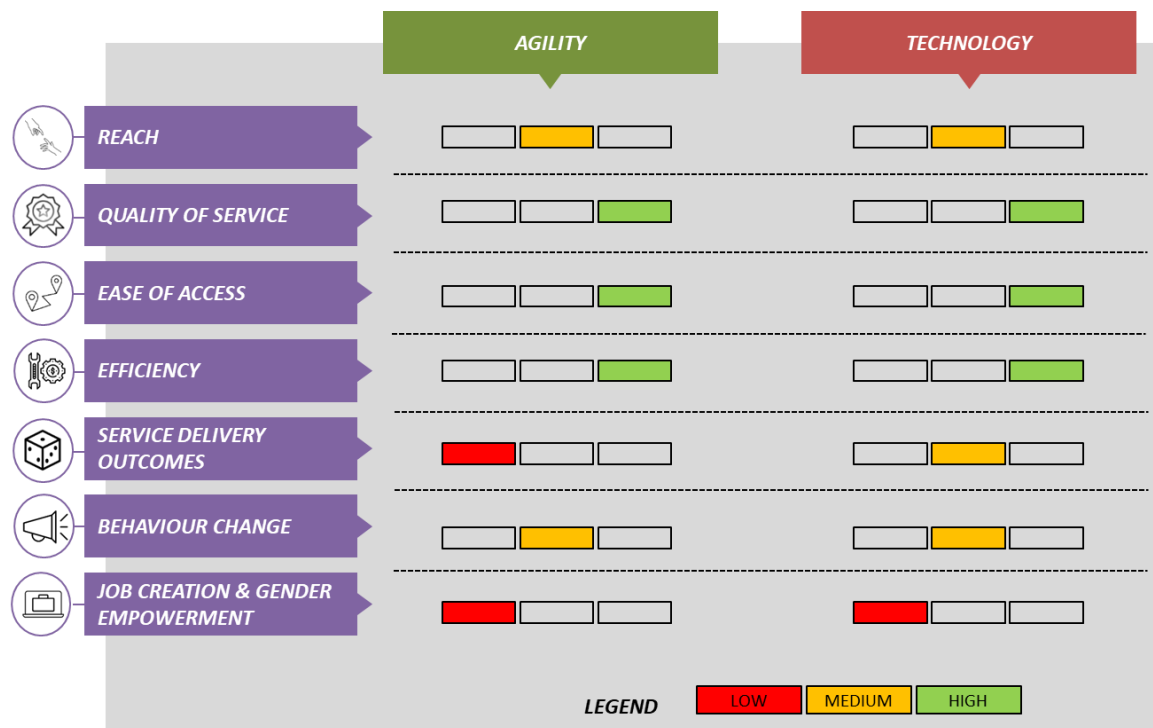


Exhibit 13: Intensity of levers across impact parameters

Opportunities for Collaboration

The above analysis indicates that the state of public secondary healthcare system is very similar to primary healthcare in terms of strengths and weaknesses. Aspects in which the government needs support are (a) the need to manage the increasing patient load, (b) improving efficiency and (c) enhancing service quality and ease of access to its services. SEs despite being agile and innovative, require support in areas such as (a) demand generation and (b) access to finance to fund growth.

- **The government can relax the norms of healthcare programs and create a more inclusive ecosystem with greater private sector involvement.** Ayushman Bharat aims to increase the access to healthcare for underprivileged sections of the population. The scheme offers cashless treatment without any cap on family size or age of family members. It also includes treatment of certain pre-existing diseases covering both secondary and tertiary healthcare. However, as discussed earlier, the scheme precludes the private sector from treated a number of health conditions. Opening up these treatments to the private sector can significantly help ease the existing pressure on resources and infrastructure at government facilities and improve their efficiency. On the other hand, it promises to improve patient traffic for SEs and help them break-even faster.

SCHOOLS SOLUTION SPACE

The Indian education sector consists of government and privately run institutions along with allied education products and service providers. With over 500 million people in the age bracket of 5 – 24 years, India has a big addressable market and high potential for investment in the education sector.⁴⁹ Despite an extensive network of over 1.4 million schools, India has the lowest per capita expenditure on education globally.⁵⁰ Although 96.5% of the children between 6 – 14 years are enrolled in schools, majority do not receive quality education. Out of every 100 children, only 32 are able to complete age appropriate school education. It is also estimated that 1 in every 4 children of school-going age drops out of school. Moreover, only 2% of the total schools in the country offer complete education from class 1 to 12.⁵¹ To meet the desired outcomes, India will need to add another 500,000 schools with a shift in focus on higher grades and an investment outlay of USD 355 bn by 2034.⁵²

Efficient and effective delivery of formal school education is critical for a child's development. The role of school education is to ensure the broad-based development of children, covering development of their cognitive, social, emotional, cultural and physical skills and prepare them for their future educational aspirations. School education in India can be divided into pre-primary, primary, secondary, senior secondary and higher education levels.

Government and SE Delivery Models

The government plays a preeminent role in delivering education in the country across levels, with the greatest exposure at the primary, secondary and senior secondary levels. SEs on the other hand, predominantly focus on delivering pre-primary and primary education. Hence, for the purpose of comparison, the analysis in the following section is restricted to pre-primary and primary education delivery models operated by the government and SEs.

Historically, the government has played a preeminent and a very direct role in delivering primary education. The Right to Education (RTE) Act provides free access to educational services to children in the 6 to 14 year age group. The government runs or supports over 1 million^{53,54} recognized primary schools, making it the largest primary education provider in the country. With respect to pre-primary education delivery, anganwadis serve as the key government delivery channel. However, it is important note that anganwadis do not have an exclusive focus on delivering primary education. It forms a part of the broader portfolio of services provided by anganwadis which include maternal healthcare, nutrition and childcare services.

Even though the government offers free education and has an extensive network of public schools, it faces several challenges when it comes to staffing. As discussed in subsequent sections, over 11% of government schools have only 1 teacher. This impacts the quality of teachers and as a result the education outcomes. The gap is bridged by SEs who lay emphasis on recruiting and training teachers

⁴⁹ "Education & Training Industry in India". India Brand Equity Fund, sector overview. 2019 ([Link](#))

⁵⁰ "Overview of the Indian Education Industry". CARE Ratings. 2018 ([Link](#)) and Intellicap report – Innovative Social Enterprises from India

⁵¹ "Statistics of Children in India". CRY. 2017 ([Link](#))

⁵² "Future of India, the Winning Leap". PWC. 2014 ([Link](#))

⁵³ "Educational Statistics at a Glance". GOI. 2016 ([Link](#))

⁵⁴ "Education in India". Wikipedia ([Link](#))

while also maintaining a healthy teacher to student ratio. They experiment with their curriculum and focus on experiential learning. The difference in the quality of service is discussed in subsequent sections which explain why it is important to have private models for schooling in underserved areas.

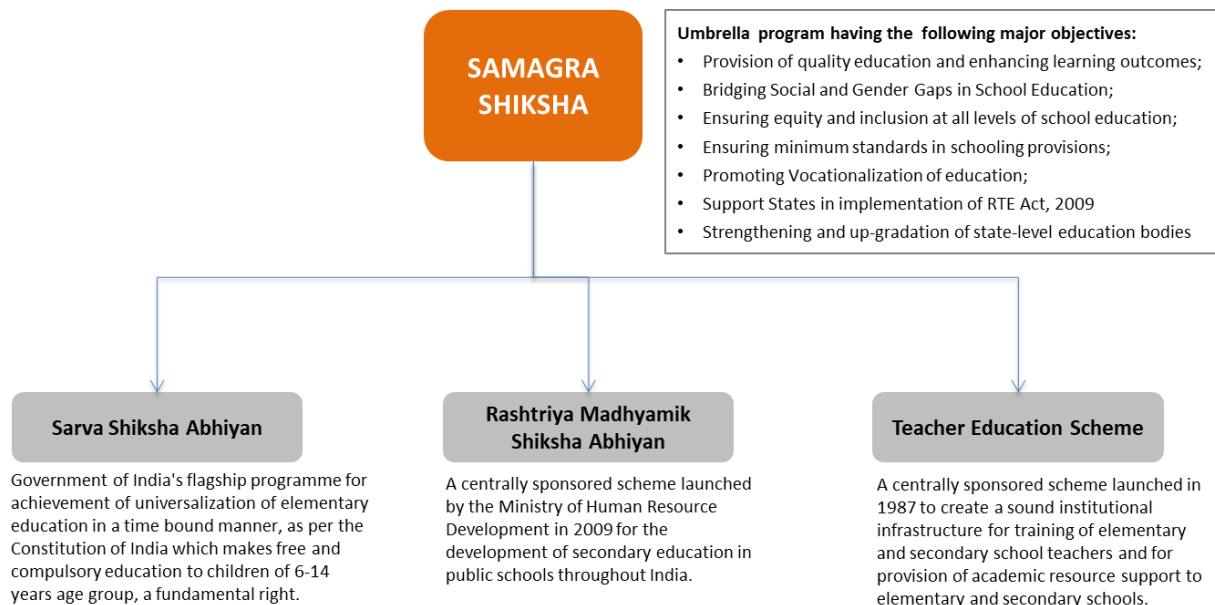


Exhibit 14: Government delivery structure of school education in India

Recent government initiatives suggest that it aims to transition from merely increasing reach to improving quality of education imparted and learning outcomes. As a part of the 2018-19 Union Budget the Government proposed the introduction of Samagra Shiksha⁵⁵, an overarching program for delivery of comprehensive school education extending from pre-school to class XII. It subsumes the three erstwhile schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE). The Samagra Shiksha scheme is expected to synchronize implementation mechanisms and transaction costs at national, state, district and sub-district levels and incentivize state governments to improve quality of education.

Sudiksha Knowledge Solutions (Sudiksha) and Bodhi Tree Schools (Bodhi), an initiative by Bodhi Tree Educational Foundation were two social enterprises were assessed as a part of the study. While Bodhi delivers pre-primary and primary education to underprivileged children in a remote rural area, Sudiksha operates a chain of pre-primary schools for children in urban slums.

Bodhi delivers primary school education to 500 underprivileged at a school in a remote rural area of Telengana. Started in 2009, Bodhi focuses on providing enquiry based alternative education and experiential learning.

Sudiksha runs a chain of 11 pre-primary schools to provide quality education to about 700 children residing in urban slums in Hyderabad and Bhopal. Since its inception in 2011, Sudiksha has focused on adopting innovative curriculum and methodologies to make learning more exciting for students.

⁵⁵ "Samagra Shiksha". Ministry of Human Resource Development, GoI ([Link](#))





Exhibit 15: Snapshot of enterprises delivering education services in India

Comparative Analysis of Impact Potential

1. Reach

Existing Scenario

The government delivery model has the greatest reach when it comes to providing primary education (includes lower primary i.e. from class I to IV and upper primary i.e. class IV to VIII) to economically marginalized sections of the society and the situation is expected to remain the same in the foreseeable future. A large section of the population, despite limited economic wherewithal, has transitioned from viewing education as a discretionary spend to a necessity for shaping a better future for their children. Since, government primary schools offer free education, they become a

COMPARISON SNAPSHOT - REACH	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Limited scale – Total students catered to by an SE is a few thousands</i>	<i>Significant scale – Over 1 million government primary schools catering to about 140 million children</i>
CONS	PROS

Source: Primary interviews and secondary research⁵⁶

⁵⁶ “Educational Statistics at a Glance”. GOI. 2016 ([Link](#))

natural choice for this population. India has about 1.27 million⁵⁷ recognized primary schools, of which 80%⁵⁸ are government run or supported schools, making it the largest provider of education in the country. Government schools account for 70%⁵⁹ of the total of 197.6 million children enrolled at the primary education level in the country. Similarly, anganwadis which serve as the key government delivery channel for pre-primary education, have deep reach into the urban and rural last mile. There are over 1.3 million anganwadis in India with over 2.5 million frontline anganwadi personnel operating them.⁶⁰

SEs mainly focus on delivering access to pre-primary and primary (i.e. class I to V) education. While SEs like Sudiksha concentrate their efforts to serve children in urban slums given higher catchment population densities, others like Bodhi consciously focuses on serving remote rural areas. Through their efforts, Sudiksha has enrolled over 11,000 students so far and Bodhi has been able to impact over 9,900 students in 21 villages till date. The ability of SEs to scale their operations is however, restricted by the ability of the target segments to pay, access to capital and regulatory norms. In effect, they lag far behind government delivery models in terms of reach and scale.

The inability to comply with regulations and challenges with financial viability prompted Bodhi to scale down its operations. Currently, it operates a single school in a remote rural area of Telengana, which caters to about 500 underprivileged students. Sudiksha has also reduced its number of pre-primary schools over time and currently operates 11 such schools in urban slums, with each school catering to average of 70 students. The dearth of access to patient capital and limited paying capacity of target segments restricts Sudiksha's ability to scale its model.

Application of levers by SEs to enhance reach

SEs exhibit agility in adopting iterative approaches and modifying their models to reach greater number of underserved students, without compromising on quality of education provided. However, expanding reach beyond a point becomes difficult for them due high capital requirements and lack of financial viability given the limited leeway to increase tuitions fees. Sudiksha, for example, began its operations in 2011 with the aim of setting up 200 to 300 pre-primary schools by adopting a franchise model. However, they quickly realized that the model would be unviable due to significant capital requirement and the low levels of fees charged to students. The average monthly fees of about INR 300 per student implied that margins were very thin, limiting the enterprise's ability to scale. For making its unit model sustainable, Sudiksha had to eventually increase its average fees over time to about INR 900 per student. Instead of rapidly expanding the number of schools, Sudiksha focused on tapping into the latent demand within the well-defined catchment area for each school.

SEs also adopt innovative approaches to reach parents and students in their catchment areas to trigger positive word of mouth for the quality of education they impart at affordable fees. Sudiksha mobilizes its teachers to undertake door-to-door canvassing within the school catchment areas to

⁵⁷ "Educational Statistics at a Glance". GOI. 2016 ([Link](#))

⁵⁸ "Education in India". Wikipedia ([Link](#))

⁵⁹ "Government Versus Private Primary Schools in India". Emerald Insight. 2013 ([Link](#))

⁶⁰ Press Release. Press Information Bureau. 2014 ([Link](#))

generate awareness and secure enrolments. The teachers are incentivized through commission payment of INR 500 per student enrolled. Bodhi conducts awareness campaigns every June when they reach out to parents and children to emphasize on the need for quality primary education. In contrast to government schools which benefit from a natural pull among the catchment population, SEs find it difficult to assign significant resources, time and budget for undertaking outreach activities necessary for spurring interest and enrolments.



2. Quality of Service

Existing Scenario

By aggressively increasing the number of schools, the government has played a preeminent role in ensuring over 96%⁶¹ of children in the age group of 6 to 13 years in India have been enrolled in the primary education system. However when it comes to quality of education imparted, the government delivery model falls short significantly, particular in rural areas⁶².

According to a recent report⁶³ published by PRATHAM, a Delhi based NGO, despite free education offered by government schools, the percentage of rural students opting for private schools to access better quality education has steadily increased to about 29% in 2016-17. Despite the government’s effort to improve facilities like playgrounds, drinking water facility, toilets, and provision of mid-day meals, government schools largely continue to focus on standard text-book based curriculums and classroom-based teaching methods. Further, government schools suffer from a severe shortage of qualified teachers at the primary education level with about 18%⁶⁴ of the positions for teachers vacant.

The use of technology in government schools for teaching by way of using audiovisuals and multimedia content is limited to a few schools in progressive states like Kerala. The Social Welfare Schools of Telangana, supported by the state government is one notable exception to this and is trying to leverage both innovation in business model and technology to improve its quality of service and produce better educational outcomes.

COMPARISON SNAPSHOT – QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Conscious focus on improving quality of education imparted</i>	<i>Quality of education imparted is relatively low</i>
<i>Innovative curriculum and methodologies adopted to offer enquiry-based experiential learning</i>	<i>Standard curriculum and classroom based learning</i>
CONS	PROS

Source: Primary interviews

⁶¹ “Educational Statistics at a Glance”. GOI. 2016 ([Link](#))

⁶² “Annual Status of Education Report”. PRATHAM. 2019 ([Link](#))

⁶³ Ibid

⁶⁴ “How is lack of Teachers in Govt Schools impacting Student’s Learning Outcomes”. iDream Education. 2017 ([Link](#))

Social Welfare Schools, Telangana

Telangana Social Welfare Residential Educational Institutions Society (TSWREIS) runs 268 residential educational institutions for the needy and deprived children, most of whom belong to the scheduled caste (SC) community (75% seats are reserved for SCs) hailing from the remote areas of Telangana.

- The school focuses on promoting life skills such as problem solving, innovation, collaboration, leadership and communication skills by the way of academics and extracurricular activities.
- It also offers coaching for admissions into top engineering colleges, medical colleges etc.
- Free accommodation, uniform and textbooks are provided to all students and minimum fees are charged for admission: INR 1,100 per month from class VIII to X; INR 1,500 per month for intermediate and degree courses.
- Students are empowered to teach within the institutes and paid for the same. They are sent to various schools facing the shortage of teaching staff. They get paid INR 3,500 per month for their efforts in teaching their peers.

Technology plays a great role in imparting knowledge and taking learning beyond textbooks. Programs are offered in coding and robotics, interactive touch screen kiosks are installed to enable students access a variety of information, student attendance happens online, tablet based learning is encouraged etc.

Exhibit 16: Short note on Social Welfare Schools

SEs on the other hand, assign the greatest focus on providing access to high quality affordable education to underserved children. They consistently innovate around developing innovative teaching methodologies, improved curriculums, teacher training and experiential learning.



2.1. Application of levers by SEs to enhance their quality of service

SEs use technology opportunistically and are more agile in ensuring better learning outcomes. They focus on developing methodologies which provide enquiry-based experiential learning. Bodhi, for example, focuses on imparting enquiry based alternative education and encourages teachers to improvise and engage with students through story-telling, experience sharing sessions and activities like role plays. Sudiksha sharpens its teaching curriculum and methodologies every year to make it more engaging for students, generate interest among parents and increase enrolments. SEs provide regular training to teachers and apply monitoring mechanisms to track their progress. Sudiksha breaks down its curriculum into daily coverage for teachers and outlines concepts they need to cover in a particular month. SEs like Bodhi and Sudiksha leverage technology in the form of engaging audio-visual content, to augment the enquiry based self-directed learning process.

3. Ease of Access

Existing Scenario

The wide reach of the government delivery model due to the large number of schools and anganwadis ensures that they are easily accessible for their catchment populations. Typical catchment area of a government school in is about 2 kilometers⁶⁵ making it convenient for students in both urban as well as rural areas to access. With respect to education, affordability is a key determinant of ease of access. The fact that government primary schools provide free education further enhances their accessibility quotient. SEs focus on delivering localized access to education to families by focusing on small pre-designated catchment areas. They also endeavor to improve accessibility by offering affordable tuition fees.

COMPARISON SNAPSHOT – EASE OF ACCESS	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Students typically have to travel between 1 to 6 kilometres to reach the school</i>	<i>Students typically have to travel between 1 to 2 kilometres to reach the school</i>
<i>Affordable education at about INR 1,000 per month</i>	<i>Free education</i>
CONS	PROS

Source: Primary interview

Application of levers by SEs to enhance ease of access

For SEs, competing with free education provided by government schools and anganwadis and their wide reach, is very difficult. However, within these constraints SEs attempt to be more agile and focused in terms of the type of households they target as customers and on maintaining tuition fees at affordable levels. Sudiksha operates schools in urban slums and cater to children within an average catchment area of 1.5 kilometers. Since the enterprise focuses on children between 2.5 years and 5.5 years of age, it factors in the convenience of predominantly working parents, who are largely migrant workers like carpenters and vegetable vendors. Sudiksha targets parents who aspire to provide quality education to their children but do not want to send their children to anganwadis and at the same time cannot afford private schools. Bodhi’s school caters to students from 16 nearby villages within a catchment area of about 6 kilometers. The enterprise also arranges for school bus services at nominal monthly average fees of INR 300.



With affordability being a precursor to easier access, SEs try to keep tuition fees at very affordable levels. The enterprise charges an average monthly tuition fee of INR 800 to INR 1,000 depending on the age of the child. Similarly, monthly tuition fees charged by Bodhi range from about INR 550 for nursery students to INR 900 for class VII students.

⁶⁵ “A Study of Small Primary Schools in India”. National Institute of Education and Planning. 2012 [\(Link\)](#)

4. Efficiency

Existing Scenario

Government primary schools face significant challenges in ensuring operational efficiency. The key challenge is the shortage of approximately 900,000⁶⁶ teachers in the primary school system. The stark shortage is evident in the fact that 11% of government schools have only one teacher. The government has been trying to improve the teacher student ratio. The RTE Act mandates that teacher student ratio should be between 1:30 and 1:35. However, over 50%⁶⁷ of government schools are unable to comply with this stipulated norm and are estimated to have ratios ranging between 1:45 to 1:50⁶⁸. Even for anganwadis, the ratio can range between 1:30 to 1:40.⁶⁹ High teacher student ratios make it difficult for teachers to cater to specific learning needs of each child.

COMPARISON SNAPSHOT – EFFICIENCY	
 Social Enterprise Delivery Model	 Government Delivery Model
Average teacher student ratio is around 1:25	Average teacher student ratio is about 1:40
High average teacher attendance of above 95%	Low average teacher attendance of about 85%
Delinquency rate in terms of fee collection could be as high as 70%	Free education
CONS	PROS

Source: Primary interview and Intellicap analysis

The other related challenge is that the teachers are not trained and motivated enough to efficiently carry out their responsibilities, which is potentially a reason explaining absenteeism among available teachers. Average teacher attendance in rural government schools at a national level is relatively low at around 85% compared to the over 90% for states like Tamil Nadu, Karnataka, and Odisha⁷⁰. Similarly, anganwadi workers are not sufficiently trained by imparting formal pre-primary education. They have multiple responsibilities encompassing health, nutrition and education. Hence, specific focus of delivering quality education is missing. SEs on their part, focus on improving operational efficiency by maintaining better teacher student ratio and adopting strategic recruitment approaches to minimize attrition among teachers.

Application of levers by SEs to enhance efficiency

SEs invest significantly in training their teachers. SEs exhibit agility by adopting practical strategies to ensure minimal teacher attrition since attrition adds to their costs of operations. SEs carefully recruit and train only those teachers who have deep local roots. Sudiksha, for instance, only recruits female married graduates from the local communities within the 25 to 45 age group as teachers. This set of criteria helps ensure that they connect easily with children and their parents in the catchment and are more stable, therefore minimizing attrition.

SEs are also able to ensure high teacher attendance rates of over 95% by keeping their teachers motivated. SEs strive to provide personalized attention and support to students by maintaining a favorable teacher student ratio, which is particularly important for younger pre-primary students. Sudiksha and Bodhi maintain a 1:20 ratio for its pre-primary classes.

⁶⁶ "How is lack of Teachers in Govt Schools impacting Student's Learning Outcomes". iDream Education. 2017 [\(Link\)](#)

⁶⁷ "Annual Status of Education Report". PRATHAM. 2019 [\(Link\)](#)

⁶⁸ Primary interview



⁶⁹ Ibid

⁷⁰ "Annual Status of Education Report". PRATHAM. 2019 [\(Link\)](#)

5. Service Delivery Outcomes

Current Scenario

According to the report by PRATHAM, only 32% of class III students of government schools can read class I text books. Similarly, only 41% of students of class V can read class II text books.⁷² These figures indicate that over half of the students of government primary schools are in reality, well below the level of the grades/classes they study in. The low levels of learning outcomes are primarily due to the poor quality of education imparted arising from shortage of qualified and specialized teachers. Student dropout rate, another important measure of service delivery outcome, has been witnessing a declining trend in case

COMPARISON SNAPSHOT – QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Student dropout rate is between 1% to 2%</i>	<i>Student dropout rate is about 4.7%</i>
<i>% of class 5 students who can read class 2 level text is 68%</i>	<i>% of class 5 students who can read class 2 level text is 44%</i>
<i>% of class 5 students who can do division is 40%</i>	<i>% of class 5 students who can do division is 23%</i>
CONS	PROS

Source: Secondary research⁷¹

of government primary schools and presently stands at around 4.7%⁷³. Anganwadis, on their part, do not follow any mechanism to assess outcomes with respect to casual oral education provided by anganwadi workers.

SEs focus is on assessing holistic development of students which they monitor by including qualitative learning parameters into their learning outcome assessment processes.

Application of levers by SEs to enhance service delivery outcomes

In addition to regular assessments, SEs leverage their agility to integrate qualitative learning indicators into learning outcome measurement. Sudiksha for instance, adopts innovative teaching methodologies and trains its teachers to closely monitor learning indicators such as confidence levels, ability of articulate thoughts, teamwork, inquisitiveness and ability to apply lessons to practical situations. Similarly, Bodhi encourages its students to undertake experiments, participate in inter-school and state level competitions to holistically measure progress in learning.

By promoting enquiry based learning through innovative teaching methodologies, SEs are able to trigger interest in students to continue studying. This coupled with the fact that SEs do not expel students in case their parents are unable to pay fees, significantly reduce student dropout rates. SEs like Sudiksha and Bodhi, experience minimal student dropout rates of 1% to 2% and most of the dropouts reported happen primarily due to migration of parents.

⁷¹ “Annual Status of Education Report”. PRATHAM. 2019 ([Link](#)), “Educational Statistics at a Glance”. GOI. 2016 ([Link](#))



⁷² “Annual Status of Education Report”. PRATHAM. 2019 ([Link](#)),

⁷³ “Educational Statistics at a Glance”. GOI. 2016 ([Link](#))

6. Behavior Change

Existing Scenario

The government allocates resources towards sensitizing parents and communities about the need for children to undertake formal education. It engages the civil society and NGOs to promote its communication strategy towards popularizing primary education. Although it also encourages teachers to facilitate a more practical mode of learning through experience sharing, most government schools however, continue to use the traditional text book oriented teaching methods.

COMPARISON SNAPSHOT – BEHAVIOUR CHANGE	
 <p>Social Enterprise Delivery Model</p>	 <p>Government Delivery Model</p>
<p><i>SEs focus on delivery of quality education and view awareness generation initiatives as non-core activities</i></p>	<p><i>The models are best positioned to drive behaviour change given their extensive reach</i></p>
<p>CONS</p>	<p>PROS</p>

Source: Primary interview

The government also administers the Mid-day Meal Scheme in primary schools and anganwadis with the objective of improving behavior change among parents and children in the form of improved enrolment, retention and attendance and simultaneously improving nutritional levels among children.

Due to financial constraints, SEs find it difficult to undertake outreach activities necessary for creating required behavior change among parents about the need for sending their children to schools. They also find it difficult to convince parents to pay tuition fees, given their poor economic backgrounds.

Application of levers by SEs to drive behavior change

Despite awareness generation campaigns not being core aspects of SE delivery models, SEs do exhibit agility in terms of adopting innovative approaches to drive behavior change among parents and students. Bodhi for example, invites fellows from private and public universities to conduct sessions on emotional and mental health for its students. Bodhi also reserves 25% of the seats for children whose parents are unable to afford their fees and provides them scholarships. Sudiksha mobilizes its teachers to undertake door-to-door awareness generation within the school catchment areas to convince parents about the need for their children to undertake pre-primary education. The enterprise however, clubs such awareness generation activity with marketing efforts by the teachers to enroll new students for which they are paid commissions.

7. Job Creation and Gender Empowerment

Existing Scenario

Given its reach and scale, the government delivery model creates a significant number of jobs, particularly in the form of teachers. There are over 5.2 million⁷⁵ primary school teachers in India, of which an estimated 70%⁷⁶ is employed by government primary schools. However, despite this there is a significant shortfall of teachers in government schools as discussed earlier. The government follows its standard

recruitment policy to hire teachers. The gender ratio among government primary school teachers is skewed in favor of male teachers and stands at around 4:3⁷⁷. However, in terms of students, the disparity in gender ratio is modest at 1:0.94 in favor of male students. Anganwadi workers are women who are selected from local communities.



SEs focus consciously on hiring teachers locally. They aim to maintain a healthy gender balance among students. In the context of teachers, there is a visible emphasis on employing more female teachers. This is partly because women are more inclined to taking up teaching as a profession and partly because they are relatively more stable at their jobs which helps SEs reduce attrition among teachers.

Application of levers by SEs to enhance job creation and gender empowerment

While there is no explicit application of the two levers with respect to job creation, SEs do consciously focus on hiring female teachers and that too locally. Bodhi and Sudiksha hire graduate teachers locally, through word of mouth and advertising through pamphlets. While all teachers at Sudiksha are women, Bodhi has a higher ratio of women in its teaching staff. By hiring female teachers locally, they help the disadvantaged gender gain employment. Due to socio-economic reasons, women find it difficult to get meaningful employment. They are mostly expected to take care of their families at home, while men go out to work. SEs such as Bodhi and Sudiksha encourage women participation and offer training to women who stay in the vicinity.

In terms of students, although SEs try to maintain a healthy gender ratio, they do not deliberately aim to enroll more girls compared to boys. Sudiksha's pre-primary schools exhibit an average ratio of 3:2 in favor of girls while the ratio is 3:2 in favor of boys in Bodhi's school.

Among the 7 impact parameters, the influence of technology is visible only in the context of quality of service, that too at a moderate level. Agility however, plays a role in all the parameters albeit to varying

COMPARISON SNAPSHOT – JOB CREATION & GENDER EMPOWERMENT	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Creates local job creation</i>	<i>Supports local job creation</i>
<i>Average teacher gender ratio is heavily in favour of women</i>	<i>Average teacher gender ratio is 4:3 in favour of men</i>
CONS	PROS

Source: Primary interview and secondary research⁷⁴

⁷⁴ "Educational Statistics at a Glance". GOI. 2016 ([Link](#))

⁷⁵ Ibid

⁷⁶ Primary interview

⁷⁷ "Educational Statistics at a Glance". GOI. 2016 ([Link](#))

extent. The influence of agility is strong in case of quality of service, efficiency and service delivery outcomes, while it is moderate in case of the remaining parameters.

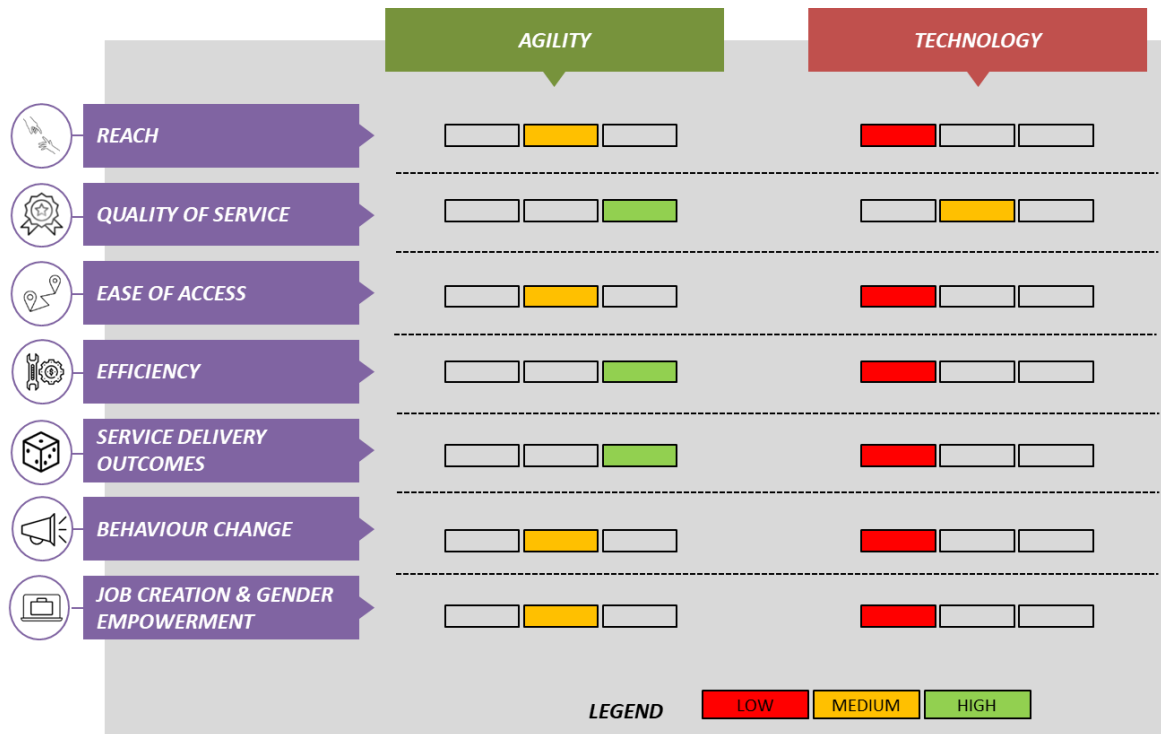


Exhibit 17: Intensity of levers across impact parameters

Opportunities for Collaboration

Based on the elements of complementarity emerging from the analysis above, following are some indicative collaboration avenues that the government and the SEs can explore.

- Government and SEs can participate in collaborative models which aim to bring together different ecosystem players to deliver access to basic services like education and healthcare in rural areas.** The initiatives focus on implementing service provider models in one rural area or block at a time. Transform Rural India (TRI), an initiative by Tata Trusts for example, is trying to bring in SEs like Sudiksha and Sevamob in a pilot block to act as service providers offering education and healthcare services respectively. With respect to education services, TRI aims to work with the government to identify potential local education entrepreneurs from women groups formed under the National Rural Livelihood Mission (NRLM). This promises to help further the government's objective of leveraging the convergence between its developmental initiatives, in this case between NRLM and its thrust on improving delivery of quality education. NRLM has agreed in principle to the support setting up of one pre-primary school in each of five pilot villages by providing grants to the identified women entrepreneurs. Sudiksha will provide educational materials and content along with teacher training on its teaching methodologies and curriculum. Sudiksha's fees will be paid by the women entrepreneurs from grant provided by TRI in the form of risk capital till the time the entrepreneurs reach a certain threshold in terms of operations. Such a model once proven can be replicated across different rural areas, in effect helping SEs scale.

- **Government can work with SEs to create model anganwadis and schools to improve quality of education delivered.** Each rural block has 30 to 40 anganwadis. For a given set of anganwadis, the government can work with SEs like Sudiksha and Bodhi to create a model learning center which will exclusively focus on delivering pre-primary education to children, unlike other anganwadis which traditionally focus on health and nutrition, rather than education. The SEs can help the government in recruiting and training teachers on scientific teaching methodologies and curriculum, and provide educational content. Similarly, state governments can partner with SEs to professionalize the delivery of quality education at government schools. While the government will continue to be responsible for operating such model learning centers and schools, the SEs will be paid for their services.

TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING SOLUTION SPACE

With a median age of 25, India is one of the few countries having favorable population demographic. Ensuring employability of this workforce is however, a huge challenge and is reflected in a poor labor force participation rate of only 54%.⁷⁸ Existing annual skill development capacity for 3.1 million people in India falls short with 12.8 million people entering the workforce every year.⁷⁹ Additionally, as the economy shifts from being agro-based to more manufacturing and service driven, availability and use of skilled labor has become critical for business profitability and growth. The Indian industry is expected to recruit almost 110 million personnel in the next 2 – 3 years across sectors.⁸⁰ This has led the government, industry associations and the private sector to work and push for skilling programs in various sectors. However, India has formally trained only 4.69% of the total workforce of about 487 million people.⁸¹

TVET refers to the education that is non-academic in focus but instead prepares students for jobs entailing manual or practical activities, related to a specific trade, occupation or vocation. Traditionally, TVET in India focused only on basic trades such as mechanics or welding. However as the economy evolved and to take advantage of India's demographic dividend, this space saw greater investments from both the government and private businesses offering a wider range of courses including information technology, retail, hair & skin care, stenography etc.

Unlike other solution spaces where public private partnerships have been limited to a few initiatives, owing to the nature of the space and need for skilled workforce; this space has seen the government, private sector and industry associations work independently as well as in collaboration with each other. The private sector has however seen stricter implementation of training and tracking as a part of their revenue is dependent on retention of the trainees in their jobs. They also leverage technology to impart training of both, trainers and trainees as well as track service delivery outcomes. Owing to this, their ways of operation can be leveraged to improve service delivery at public vocational training facilities.

Government and SE Delivery Models

Currently the Government is in the process of converging all skill development initiatives under a National Policy for Skill Development and Entrepreneurship introduced by the Ministry of Skill Development and Entrepreneurship (MSDE). It has incorporated a governing council at the apex level and a steering committee at the executive level to ensure smooth functioning of the institutions under them. There are 2 institutions that govern various TVET delivery models in India:

- **Directorate General of Training (DGT)** governs the Industrial Training Institutes (ITIs) that were established in 1950 for imparting skills in various vocational trades at the national level. The day-to-day administration of ITIs rests with the respective state governments. Training period ranges between 6 months to 2 years and courses are offered in over 130 specialties. Their standards are set

⁷⁸ "Labor force Participation Rate", World Bank Database, 2018 ([Link](#))

⁷⁹ "Open School in Assessment & Certification of Vocational Skills". NIOS. 2012 ([Link](#))

⁸⁰ "National Policy for Skill Development and Entrepreneurship". Ministry of Skill Development and Entrepreneurship. 2015 ([Link](#))

⁸¹ Ibid

by The National Council for Vocational Training (NCVT), which also awards the National Trade Certificates to the trainees once the training is completed. There have been many initiatives to promote collaborations between the government and private enterprises. The collaboration can take different forms which vary from one state to another. It can be limited to a private institute acting as a consultant to the Government or exhaustive where a private institute can take full control of an ITI by signing an agreement with the state Government. For instance, Tata Motors had adopted over 100 ITIs which had benefitted both trainees and the company in the auto trade sector.⁸² Additionally, the Government has also started promoting the Dual System of Training where the trainees are trained with both the ITI as well as with the industry partner.

- **National Skill Development Corporation (NSDC)** has been set up as a PPP, which is owned 51% by industry chambers and 49% by the Government, aims to promote skill development by catalyzing the creation of a new breed of for-profit vocational training institutions. With over 11,000 centres spread over 29 states, its' main activities include supporting vocational training institutes through soft loans, conducting market research, engaging with other stakeholders and enabling the skilling ecosystem. It is also the implementation agency responsible for setting up district level training centres across the country called Pradhan Mantri Kaushal Kendra (PMKKs), the first of which was established in 2017.⁸³ These centres offer short term courses ranging between 2 to 6 months and are run by private enterprises including companies, societies and trust that follow the prescribed government criteria; and are funded and assessed by NSDC.

The National Skill Development Mission aims to skill 400 million people across various trades by the year 2022. To capitalize on the opportunity this offers, SEs have experimented with different business models in this space. These models range from SEs providing training independently or entering into a partnership with corporates to provide training or collaborating with the government.

Pipal Tree Ventures (Pipal Tree) and EduBridge are two SEs that were assessed as a part of this study. While Pipal Tree focuses on providing training and employment to school dropouts in various construction related activities, EduBridge offers standardized courses in domains such as banking & financial services, retail, electronics etc. Both Pipal Tree and Edubridge offer courses independently and also in collaboration with the government and other enterprises.

Pipal Tree focuses on training and employing skilled workers in various construction related activities by operating as a civil contractor. It also implements various government schemes and trains beneficiaries in areas such as construction of houses, retail, farming etc. It started in 2007 and has trained over 50,000 people so far.

Edubridge started in 2009. It is a skill development and vocational training organization that works with corporates and the government to implement various training related programs. It has recently started focusing on workforce development by recruiting and training people as per the needs of corporates. It started in 2009

⁸² "Vocational Education and Training Reform in India". Bertelsmann Stiftung. 2014 ([Link](#))

⁸³ NSDC India website ([Link](#))



◀ House constructed under the affordable housing government scheme in Maharashtra with Pipal Tree as the training partner

NAC administration building in Hyderabad, Telangana ▶



◀ Pipal Tree training centre in Telangana

Retail training being imparted to women in Telangana by Pipal Tree ▶



Exhibit 18: Snapshot of TVET enterprises in India

Comparative Analysis of Impact Potential

1. Reach

Existing Scenario

The first ITI was set up in 1950, and today there are 13,348 ITIs, both public and private, across the country offering over 130 courses and teaching over 1.4 million trainees each year.⁸⁴ Their number varies among states and the importance attached to industrialization in the respective states. 66% of all ITIs are in Uttar Pradesh, Rajasthan, Karnataka, Bihar, Madhya Pradesh and Maharashtra.⁸⁵ Overall, all ITIs are functioning at over 90% utilization, highlighting the need to build more capacity to meet the ambitious targets of 2022. This has prompted the government to promote public-private partnerships. NSDC acts as the implementing agency for promoting PMKK centres. As of February 2019, there were 443 training partners that had trained 995,600 people in various skills. Over 50% of these centres are based out of Uttar Pradesh, Rajasthan, Haryana and Madhya

⁸⁴ "Grading of Industrial Training Institutes- Framework and methodology", Ministry of Skill Development and Entrepreneurship, 2018 ([Link](#))

⁸⁵ NCVT-Management Information System, Ministry of Skill Development and Entrepreneurship, ([Link](#))

Pradesh.⁸⁶ NSDC and other government initiatives have prompted many SEs to enter the space and experiment with different business models to reach and train greater number of unemployed youth.

Application of levers by SEs to enhance reach

SEs leverage their agility to work both independently and through partnerships with corporates and the government to enhance reach. SEs also assess existing job requirements in their area of operation and match their skill development initiatives to local needs.



Most SEs are not dependent on a single line of business or models, but run a diversified portfolio. For instance, Pipal Tree started as a civil contractor and trained construction workers; and later expanded to partner with the government under its skilling programs. In addition to these, it also implements corporate social responsibility (CSR) training programs for a few corporates. By operating three distinct models, it trains over 1,000 people every month in 20 training centres across the country.

Similarly, Edubridge has three lines of operation and partnerships. It partners with the government to implement skilling schemes and also with NGOs to implement CSR projects of corporates. Recently, it has partnered with corporates to implement a “skills to jobs” program for corporates to recruit skilled manpower for entry level positions. In this business line, Edubridge focuses on workforce development by scouting and training people for the specified job roles and placing them with the corporate once on completion of training. Edubridge calls this the Hire, Train and Deployment model (HTD). Through these 3 models, Edubridge trains over 1,900 people every month in over 60 centres across India.

2. Quality of Service

Existing Scenario

Curriculum across all ITIs is standardized and they mostly offer long term courses spread over one or two years. The government believes that long term training ensures holistic development of trainees and prepares them for sustainable employment. However, the popularity of such programs has been steadily declining over time, as reflected in diminishing enrolments and high dropout rates. To tackle this, the government has now also introduced a few short term courses. High dropout rates are also caused by poor mobilization.⁸⁸ As a consequence, while ITIs achieve their training targets, they pay limited attention to matching the aspirations of the trainees with appropriate

COMPARISON SNAPSHOT - REACH	
 Social Enterprise Delivery Model	 Government Delivery Model
~40 <i>Trainees trained per month</i>	100+ <i>Trainees trained per month</i>
400+ <i>Courses offered by SEs like Edubridge</i>	130+ <i>Courses offered by ITIs</i>
<i>Significant investment required to mobilize people and convince them of the benefits of training</i>	<i>Comparatively easy to mobilize people due to the inherent strength exercised by the government</i>
CONS	PROS

Source: Primary interviews and secondary research⁸⁷

⁸⁶ PMKVY Dashboard ([Link](#))

⁸⁷ “Industrial training institute”, Wikipedia ([Link](#))

⁸⁸ “Standing Committee Report on Labour”. Ministry of Labour and Employment. 2018 ([Link](#))



courses which is reflected in accepting trainees without prior counselling of where they want to be placed post completion of the training.

To ensure proper and consistent training, the government mandates training of instructors under the Crafts Instructor Training Scheme (CITS) and a trainer to trainee ratio of 1:20. As per the report submitted by the Standing Committee of Labour, there is a requirement of over 110,000 instructors. However, only 15% of these are trained under CITS.⁹⁰This might impact the quality of the training imparted.

For PMKK, the trainers are required to be graduates and have work experience as prescribed by the Staff Selection Commission (SSC) of the Government of India. NSDC also mandates the trainer to trainee ratio to be maintained at 1:30.⁹¹

The government has also started an exercise to grade the ITIs in order to identify at least 500 ITIs that can become “World Class” training institutes and act as model institutes for others to emulate in terms of the quality of training imparted, infrastructure, facilities, faculty etc. Trainees of these ITIs are given preference for training opportunities outside India, while the ITI itself is given benefits such as the flexibility to add new courses, receive additional funding from the state government etc. which helps it service its’ offerings better. However, not all ITIs get these benefits and many exhibit poor performances.⁹²

In Telangana, the state government has set up an advanced training institute for training of construction workers called the National Academy of Construction. With good quality infrastructure and network for placements, it sets a strong precedent for other state governments to follow.

COMPARISON SNAPSHOT - QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Mostly focus on short term courses</i>	<i>Offer both long and short term courses</i>
~1:17 <i>Trainer : Trainee ratio</i>	1:20 (ITI), 1:30 (PMKK) <i>Trainer : Trainee ratio</i>
<i>Minimum qualification of all trainers is graduation</i>	<i>25% of the trainers in ITIs are graduates or above. Additionally, 13% of the staff is below class 12 pass</i>
<i>Both Edubridge and Pipal Tree have dedicated placement cells in all branches</i>	<i>A survey highlighted that only 30% of the ITI's had placement cells</i>
<i>Technology is used to monitor trainer and trainee performance</i>	<i>Technology is not used to monitor performance</i>
CONS	PROS

Source: Primary interviews and secondary research⁸⁹

⁸⁹ “Tracer Study of ITI Graduate”, Ministry of Skill Development & Entrepreneurship, 2018 ([Link](#))

⁹⁰ “Standing Committee Report on Labour”. Ministry of Labour and Employment. 2018 ([Link](#))

⁹¹ Primary interview

⁹² “Standing Committee Report on Labour”. Ministry of Labour and Employment. 2018 ([Link](#))

National Academy of Construction, Telangana

NAC was set up in 1998 for providing training and development of construction resources to improve safety, efficiency and productivity of the industry. Managed by a Board of Governors with the state Chief Minister as its Chairman, the Academy started with 1 centre and 5 trades training 150 technicians per year. Today, the Academy operates 50 centres that have trained over 380,000 technicians in over 22 trades. NAC is an exemplar of success when it comes to a government run vocational training delivery model:

- Training is offered in construction trades such as masonry, plumbing, welding, painting & decoration, store keeping, carpentry etc.
- NAC is an International Organization for Standardization (ISO) certified training academy that has won several awards such as the Viswakarma Awards in 2012, 2016 & 2018; Golden Peacock National Training Award in 2017 and the Assocham Award for best placements in 2018.
- It boasts of impressive physical infrastructure. The Hyderabad unit is spread over 47 acres and conducts all training under one roof. The campus has an auditorium with 500 seating capacity, seminar halls, class rooms, hostel blocks, laboratories etc.
- In addition to providing training to unemployed youth, it also has programs for skill upgradation, training of trainers and apprenticeship programs for civil graduates and diploma holders of tribal communities.
- NAC promotes on the job and practical training and has a healthy theoretical and practical training ratio of 20:80, with 1 instructor for every 30 trainees.
- Communication skills, yoga and other personal development skills are taught to trainees.
- NAC has a total staff strength of 361, with 245 contract employees and 7 consultants.
- NAC graduates have been offered placements in various organizations such as Shapoorji Pallonji & Co Ltd., TATA Projects, Ramky Infrastructure Limited, Hallmark Builders, Ark Builders etc.

(Source: Primary interview)

Exhibit 19: Short note on National Academy of Construction

SEs focus on the lifecycle approach placing importance on all aspects of successful skilling including mobilizing people based on their aspirations, training, counselling, recruiting and following up with the trainees post placements.

Application of levers by SEs to enhance their quality of service

SEs leverage both agility and technology to enhance their quality of service which helps them improve their performance and offer a comprehensive range of services to their trainees. They attach utmost importance to matching of trainees and training programs in ways that match their aspirations along with requirements of the job providers. A mismatch between the two leads to high dropouts after placement, which SEs seek to minimize. For instance, Edubridge conducts a basic background screening and checks the keenness of every application they receive before accepting them. It dedicates 20 days to mobilization before starting any training.

SEs understand that the quality of the trainers directly impact the skills of the trainees and therefore, spend extra effort in building trainer capacities. Edubridge conducts regular offline and online trainings for its trainers. Every trainer is certified in 2 or 3 courses. Additionally, both Pipal Tree and Edubridge ensure a healthy trainer to trainee ratio which ensures that adequate attention

is given to each trainee. While for Pipal Tree 1 trainer manages 10 trainees at a time, the ratio for Edubridge is 1:25.⁹³

SEs leverage technology to capture data, deliver comprehensive trainings and assess performance which improves the efficiency and quality of their services. They use customer relationship management (CRM) software to store internal data which ensures consistency and centralization of information. Edubridge has also incorporated a learning management system (LMS), which is used for ensuring proper delivery of training. Training rooms are connected to a server through which lessons are delivered by way of different slides. Each slide has a pre-determined time for which it is displayed on the screen and the trainer cannot fast forward the same, in effect ensuring that trainers go through all content at the same pace.

Edubridge is leveraging technology to offer additional job related services. It is building a portal called “Sahi Career” that will offer job related services such as resume building, counselling etc. It is a subscription based model that will be open to people outside of the Edubridge ecosystem as well.



Similarly, Pipal Tree is working on an application that will capture productivity of their trainees on a daily basis, once they start working in the industry. This will help Pipal Tree assess the trainees’ as well as their own performance and tweak training methods if required.

3. Ease of Access

Existing Scenario

While the reach of government promoted public and private ITIs is massive, they are not spread equally across all states. They are found in large numbers in states with high industrial activities. Some states such as Manipur, Nagaland and Chandigarh have less than 3 ITIs.⁹⁴ In this case, trainees might have to travel long distances to avail the training.

Both public and private ITIs charge fees for enrolment which vary from one state to another. Public ITIs are however affordable with average annual fees between INR 100 to INR 500. Private ITIs have higher fees, which could be upward of INR 40,000 per year.⁹⁵ PMKK centres on the other hand can offer fee based or non-fee based programs. SEs on the other hand, create partnerships with corporates wanting to implement CSR projects and with those wanting to hire people for various entry level positions. Since these projects are either fully or partially paid for by the corporates, it makes training affordable for the trainees. For instance, Edubridge has entered into such partnerships with Fullerton, Yes Bank, Larsen & Toubro Finance etc.

COMPARISON SNAPSHOT – EASE OF ACCESS	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Centres are located closer to the communities they are serving</i>	<i>Location depends on industrial activity of the region leading to high travel time in some states where centres are not present in large numbers</i>
<i>Both fee based and non fee based programs are available</i>	<i>Both fee based and non fee based programs are available</i>
CONS	PROS

Source: Primary interview

⁹³ Primary interview

⁹⁴ NCVT-Management Information System, Ministry of Skill Development and Entrepreneurship, [\(Link\)](#)

⁹⁵ Primary interview

Application of levers by SEs to enhance ease of access



SEs leverage their agility to deliver services closer to the communities of the trainees. Each centre operated by Edubridge, caters to trainees with an average catchment of 20 kilometers. Both Pipal Tree and Edubridge also offer residential training which makes it easier for trainees who stay far off from the centres, to complete the training.

Some projects are funded by the government or through CSR funding, in which case SEs do not charge fees from the trainees. However, for other models, SEs have innovative financing options that the trainees can avail. Pipal Tree does not charge an upfront fee for its construction service training program. It recovers the fee in installments once the trainee starts working over a period of one year. This makes the program affordable for the people wanting to get into the construction industry. Edubridge charges minimal amount from both the trainee and the job provider for its HTD program.

4. Efficiency

Existing Scenario

There is limited application of technology as far as the government delivery model is concerned, for improving delivery efficiency. Although basic information with respect to the number of institutes and trainees is collected and made available online, technology is not used to deliver lessons. Some ITIs, however, have started experimenting with remote delivery of courses using the internet.

COMPARISON SNAPSHOT – EFFICIENCY	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Regular assessment is conducted to get feedback on the programs and improve efficiencies</i>	<i>ITIs are graded which encourages competition to improve service and efficiencies</i>
<i>Technology is used to store trainee data and take business decisions</i>	<i>Limited use of technology is observed to store internal and patient data</i>
CONS	PROS

Source: Primary interview

In order to improve efficiency, the government has started promoting a grading system to encourage ITIs to improve their standards of delivery and increase operational efficiencies. The system will assess the ITI's current performance level and enable it to find out the key areas where it can improve further.⁹⁶ As of June 2018, 4,811 ITIs had been graded and another phase of the grading exercise was being planned by the government.⁹⁷

SEs on the other hand rely on technology and have flexible business models which makes them adapt to business environment easily and improve their operational and financial efficiencies.

Application of levers by SEs to enhance efficiency

SEs leverage technology to improve consistency and collect information which helps improve their operational efficiency. Edubridge has experienced an increase in the retention rate of their trainees

⁹⁶ Parameters judged for grading can be found here [\(Link\)](#)

⁹⁷ "Grading of Industrial Training Institutes- Framework and methodology", Ministry of Skill Development and Entrepreneurship, 2018 [\(Link\)](#)

after introducing its LMS system. This has reduced dropouts both during the training and post placements.

SEs also conduct regular assessments and evaluation sessions. This is done to ensure that the skills being imparted are according to the training plan and to get feedback from the trainees. Edubridge conducts these assessments at three levels- once at the beginning of the training followed by a mid-training assessment and an exit level assessment. They have also set up a post-placement counseling team that tracks trainee experience after being placed with an organization.



SEs lay significant emphasis on generating financial efficiency. Both Pipal Tree and Edubridge have evolved over time to concentrate on models that are more financially viable, while reducing focus on the ones that are not. While both have partnered with the government to implement various schemes, the ability to generate financial efficiency has proved to be a challenge in this model. While subsidies for imparting trainings guarantee earnings, it generally takes significant time for the money to be recovered from the government. Due to this, SEs have started focusing on partnerships with corporates that require trained manpower on a regular basis and make timely payments. In terms of expenses, Edubridge spends INR 11,500 per student, while Pipal Tree spends INR 15,000 on an average.⁹⁸

5. Service Delivery Outcomes

Current Scenario

In case of ITIs, monitoring and reporting of service outcomes is the responsibility of individual state governments. Data pertaining to enrolments, placements and trainer vacancies are regularly published online and used to make internal policy and rating decisions. While some ITIs have a good placement track record, others lag behind. The Standing Committee of Labour observed that in 400 public ITIs, only 64% trainees found either wage employment or self-employment.¹⁰⁰ While some ITIs have training and placement cells, they usually do not conduct post placement follow ups.

In case of PMKK centres, NSDC regularly monitors and evaluates performance standards such as placements, infrastructure etc. to ensure quality in training delivery. A dedicated monitoring team was established in 2017 for the same. The team conducts surprise visits and analyses data to check for compliance as outlined by NSDC. As of

COMPARISON SNAPSHOT – SERVICE DELIVERY OUTCOMES	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Rigorous data capture and analysis using technology</i>	<i>Data is used to assess performance by the implementing agencies</i>
<i>Data is captured to check for placements as well as retention</i>	<i>Monitoring and reporting does not happen after placements to check for retention</i>
<i>SEs such as Edubridge have a placement rate of over 70% after the training gets completed with a retention rate of over 50%</i>	<i>According to a survey of ITIs, over 73% trainees get employed within 12 months of the training, only 26% remain employed after 12 months of the training</i>
CONS	PROS

Source: Primary interviews and secondary research⁹⁹

⁹⁸ Expenses here refer to operating expenses which is the expenditure incurred as a result of performing the normal business operations. It does not include any one-time or initial investments.

⁹⁹ "Tracer Study of ITI Graduate", Ministry of Skill Development & Entrepreneurship, 2018 [\(Link\)](#)

¹⁰⁰ "Standing Committee Report on Labour". Ministry of Labour and Employment. 2018 [\(Link\)](#)

June 2019, its placement rate as a percentage of those who completed training was 54%.¹⁰¹ The agency, however, does not look at retention numbers once the trainee has been placed in an organization.

Application of levers by SEs to enhance service delivery outcomes



SEs leverage agility and technology to collect, monitor and assess various delivery outcomes. Pipal Tree continuously monitors performance and productivity of all the workers it trains. It also tracks increase in salaries to understand how the worker is growing in his or her career. Monitoring these outcomes is essential since Pipal Tree does not recover the full training fee due from the worker if he or she drops out within one year of placement.

Moreover, in donor funded programs SEs are required to share skilling and progress reports regularly with the donors. Edubridge adopts a comprehensive outcome monitoring mechanism and captures feedback at every level of skilling process. On average, they have been able to place 70% of the trainees, who completed the trainings, with different organizations. Their retention rate, which is measured 2 to 3 months after placement, is over 50%. Additionally, Edubridge conducts regular counseling of trainees and trainers and has a team which monitors performance of trainers.

6. Behavior Change

Existing Scenario

The government is the key driver for promoting vocational and skill based trainings. It does so by introducing different schemes and mobilizing youth to enroll for different courses that it offers. The curriculum adopted includes development of employable skills which includes aspects such as grooming and soft skills to inculcate behavior change commensurate with the requirement of future jobs. SEs contend with financial constraints with respect to the ability to organize awareness generation camps and activities. They also find it difficult to convince people about the importance of training in finding and sustaining a well-paying job.

COMPARISON SNAPSHOT – BEHAVIOUR CHANGE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>SEs find it difficult to mobilize people and inculcate behavior change. Mobilization, however, is an important cost centre for them</i>	<i>The model is best positioned to drive behavior change given their focus on preventive and promotive care</i>
CONS	PROS

Source: Primary interview

Application of levers by SEs to drive behavior change

Although SEs cannot afford large scale awareness generation camps, they deploy local resources to undertake door to door campaigns to inform people about their offerings and value propositions. Both Pipal Tree and Edubridge employ mobilizers who are given targets with respect to reaching out to a certain number of people and educating them about the benefits of skill based training. They also distribute pamphlets and install awareness booths in their communities where people can



¹⁰¹ PMKVY Official website ([Link](#))

gather and know more about their services. Such activities serve the dual purpose of raising awareness as well as marketing the services of the SEs.

7. Job Creation and Gender Empowerment

Existing Scenario

The government usually hires people with diploma degrees or graduates of ITIs as instructors. It however, mandates them to complete training under CITS to become qualified to work as a trainer. Unlike in schools, most trainers in ITIs are males with a gender ratio of 4:1. In terms of curriculum however, ITI offers over 50 courses exclusively for women. Additionally, there are a few ITIs that are reserved exclusively for women. They employ only women trainers and train only women candidates. Similarly, NSDC focuses on women empowerment and

COMPARISON SNAPSHOT – JOB CREATION & GENDER EMPOWERMENT	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Supports local job creation, trainer roles are dominated by males.</i>	<i>Trainer gender ratio of 4:1, where males dominate</i>
<i>Explicit focus on delivery of services for women is limited</i>	<i>Emphasis on women empowerment with ITIs offering over 500 courses exclusively for women</i>
<i>45% of the trainees in Edubridge are women</i>	<i>30% of the trainees in ITIs are women</i>
CONS	PROS

Source: Primary interview and secondary research¹⁰²

has trained over 100,000 women across various jobs and sectors.¹⁰³ Similar to the government, SEs focus on ensuring healthy gender diversity when it comes to the courses they offer and accepting women candidates as trainees. In the context of trainers, they have not made a conscious effort to employ more women in their models.

Application of levers by SEs to enhance job creation and gender empowerment

SEs leverage their agility to innovate ways of recruiting and retaining qualified manpower. For instance, Edubridge hires graduates at competitive pay scales and conducts regular training programs for them to sharpen their skills and teaching capabilities. They have also set up a school for training people interested in becoming trainers called “Guru School” in partnership with two large corporates. Graduates from the school get placed as trainers within Edubridge and can opt to join other skilling organizations as well.

Currently, Edubridge employs approximately 150 trainers. It has not yet focused on maintaining a balanced gender ratio within the organization but intends to do so in the future. It also believes that women trainers are more empathetic to the needs of the trainees and are better at multitasking. In terms of trainees however, Edubridge makes conscious efforts to train more women. Pipal Tree on the other hand, has limited focus on training women and employing women trainers due to the physical nature of the jobs associated with the construction industry. The SE however, implements a government program under which it is mandated to train women for getting employed in retail stores.

¹⁰² Tracer Study of ITI Graduate”, Ministry of Skill Development & Entrepreneurship, 2018 ([Link](#))

¹⁰³ NSDC annual report, 2018 ([Link](#))

Among the 7 parameters, the influence of technology is visible in the context of quality of service, efficiency and service delivery outcomes; while agility plays an important role in enhancing reach, quality of service, ease of access and efficiency. There is limited influence of both levers in promoting behavior change and supporting job creation including women empowerment.

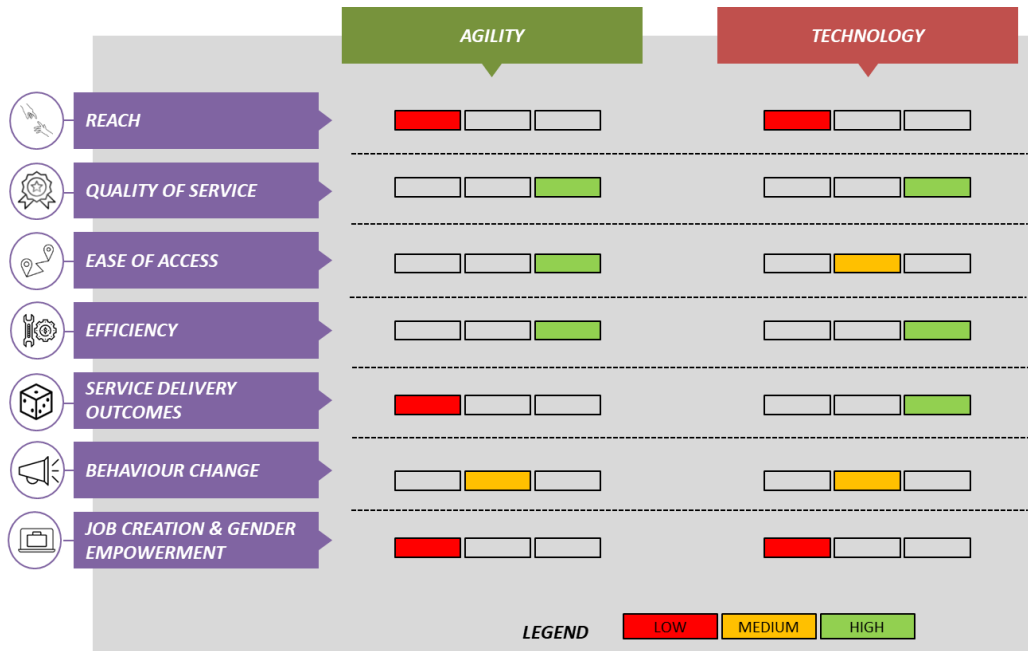


Exhibit 20: Intensity of levers across impact parameters

Opportunities for Collaboration

The government has explored numerous collaboration opportunities with the private sector including SEs. The collaborations can be further strengthened by improving the efficiency of the system which can set a precedent for other solution spaces to follow and implement.

- The government can establish a system ensuring timely disbursements to SEs for their services based on a placement-linked payment mechanism, while SEs can help in improving efficiency by regularly monitoring and tracking all phases of training.** As a part of current partnerships, the government pays private sector training enterprises on the basis of number of trainees they enroll and train. Monitoring of placements and retention is however, not undertaken. This potentially implies that meeting enrolment targets becomes the key motivator for private training enterprises rather than delivering quality training and ensuring reduction in dropouts and better retention by companies post placement. The government therefore, can seek greater accountability from training enterprises by laying greater weightage on retention of trainees by organizations, for releasing payments. The government on its part however, must ensure prompt disbursement of payments to the training enterprises once services have been provided and assigned targets have been achieved to make the collaboration worthwhile for the enterprises.

SOLID WASTE MANAGEMENT SOLUTION SPACE

Rising incomes, rapidly growing but unplanned urbanization, and evolving lifestyles have resulted in increased volumes and changing composition (increasing use of paper, plastic and inorganic materials) of municipal solid waste (MSW) in India. Municipal solid waste consists of primarily 2 types of waste; wet waste and dry waste. Dry waste includes wood and related products, plastic, paper, metals and glass. Wet waste typically refers to organic and biodegradable waste usually generated by vegetables and food.

While there are no reliable estimates of municipal solid waste generation in India, the Report of the Task Force on Waste to Energy of the Planning Commission¹⁰⁴ in 2013-14 estimated that the per capita generation of waste in the country is 450 grams on a daily basis. With over a third of India's total population of 1.3 bn residing in urban areas¹⁰⁵ in 2018, it is estimated that a total of 72 million tons of waste is generated on an annual basis. Recognizing the magnitude of environmental problems, health issues and the resulting financial implications of burgeoning waste, Government of India has initiated key waste management related programs under Swachh Bharat Mission (SBM).

Government and Social Enterprise (SE) Delivery Models

Traditionally, municipal bodies across the country have adopted varied approaches like self-management, service contracts and concession contracts for managing MSW.

- **Self-Management:** Under this approach, the entire waste management chain is owned and operated by the municipal body through its employees.
- **Service Contracts:** Under this engagement, part of the waste management chain (collection, transportation) is managed by a private player under a contractual arrangement with the municipal body. The contractor is paid by the municipal body against the services at regular intervals.
- **Concession Contracts:** While it is very similar in comparison to service contract on the operational front, the difference lies in collection of fees. The interaction with users and collection of fees from the users is also managed by the private player under this concession contract.

Using these management approaches, the municipal corporation handles the four aspects of MSW (Collection, Transportation, Treatment and Disposal). Efficient collection, safe transportation, environment-friendly treatment and disposal of both wet waste and dry waste are the core objectives of MSW departments across the country. An ideal MSW delivery model (as indicated in the Exhibit below) is explained below:

- **Collection:** Door to door collection is undertaken from households and commercial premises through collection personnel employed by the municipal corporation or by deploying 3rd party agencies under a service contract. Households across the country, especially in urban areas, are being encouraged to segregate waste into dry and wet waste. This segregated waste is collected from the households and establishments on different days/periods in order to avoid mixing. For example, in the case of

¹⁰⁴ "Report of the Task Force on Waste to Energy", Planning Commission, 2014 ([Link](#))

¹⁰⁵ "World Population Prospects 2019", United Nations ([Link](#))

Bengaluru, BBMP (Bruhat Bengaluru Mahanagara Palike) collects wet waste from households on a daily basis and dry waste once a week.

- **Transportation:** The transportation of both wet and dry waste from the collection points is undertaken through specialized vehicles of varying sizes. The dry waste is sent to the Dry Waste Collection Centres (DWCC, typically situated within the city) and the wet waste is sent to the processing unit which is usually near the landfill. In certain cities municipal rules mandate that big residential societies should set up a facility to manage (convert to compost) wet waste in situ, rather than send it to a landfill.
- **Treatment:** The dry waste collected from the households is segregated into various components like paper, PET bottles, plastics etc., at the DWCC. Segregation is undertaken manually with limited use of mechanization. The segregated dry waste components are created into a bale and sent to various recyclers for recycling. Wet waste collected is usually converted into compost using vermi-composting process.
- **Disposal:** The inert waste (waste which cannot be treated or processed further and is deemed safe for the environment) is dumped in a scientific landfill, which ensures minimal damage to the environment.

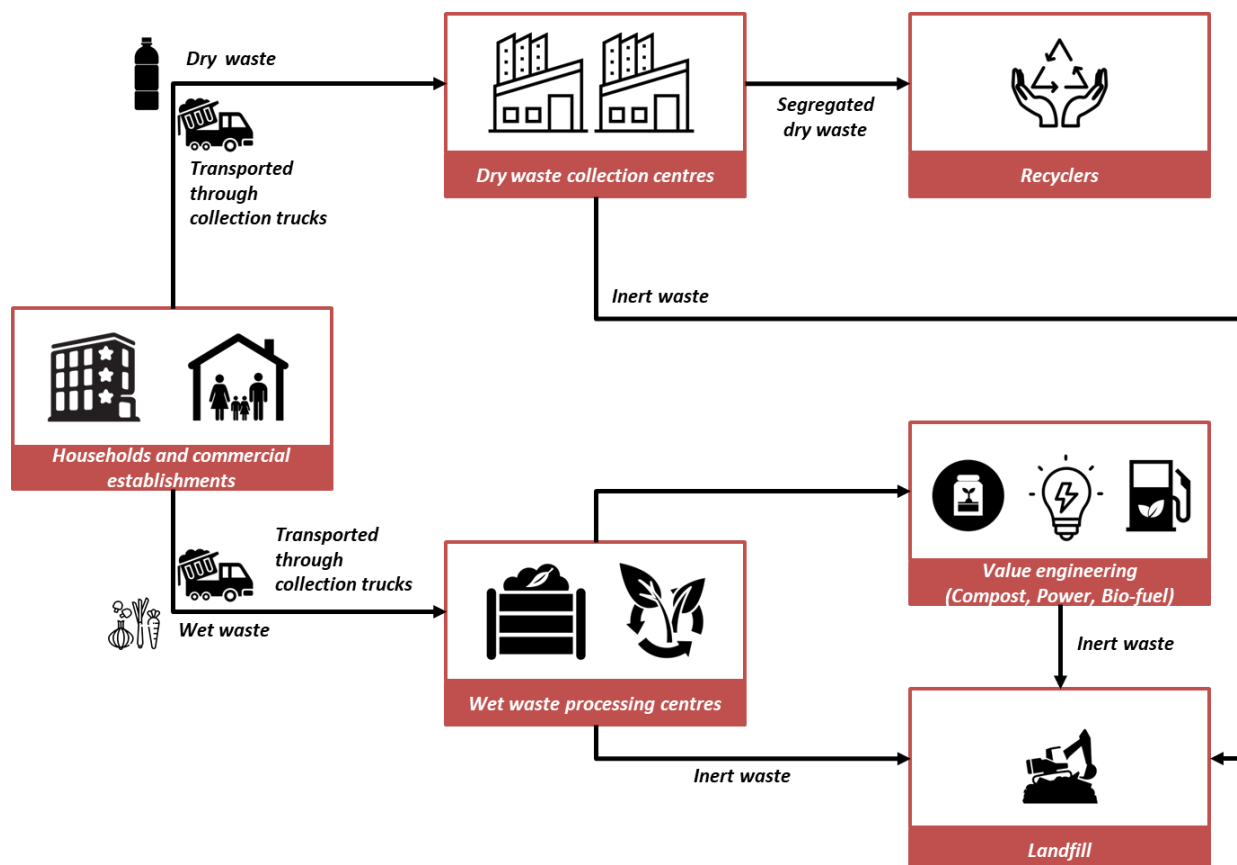


Exhibit 21: Municipal solid waste delivery model

Numerous problems and issues plague our current Municipal Solid Waste management system. About two thirds of the solid waste generated is not collected. As a result, the uncollected waste, which is

often also mixed with human and animal excreta, is dumped indiscriminately in the streets and in drains. This contributes to contributing to flooding, breeding of insects and rodent vectors and thus contributes to spread of diseases. Furthermore, even collected waste is often disposed unscientifically in uncontrolled dumpsites and/or burnt, polluting water resources and air.

One of the key areas within waste management where social enterprises are developing a foothold is in operation of DWCC. For the purpose of this study, Intellectap assessed two enterprises which are at different stages of maturity and managing centres in two different geographies.

Nepa Resource Management: Ahmedabad-based Nepa Resource Management Pvt. Ltd, a waste management company that operates under the 'Let's Recycle' brand was founded in 2011. It has built a supply chain that connects dry-waste generators and collectors to recyclers, integrating about 1,800 waste-pickers into the formal economy. It has a capacity of processing 100 tonnes of waste a day in Ahmedabad.

SweepSmart: SweepSmart connects municipalities that need a waste solution with informal recycling entrepreneurs and helps them to setup a professional waste management system. They provide Design, Build, Manage and Transfer (DBMT) services to municipal bodies. SweepSmart's smart waste centres collect and segregate waste from households and companies. Their centres use a conveyor and a baler for compacting. The conveyor belt is optimized for small centres and is used by waste pickers. SweepSmart works with Hasiru Dala, a local waste picker collective.



Exhibit 22: Snapshot of waste management enterprises in India

Comparative Analysis of Impact Potential

In this section, we will undertake a comparative analysis of government delivery model and SEs across the 7 impact parameters identified earlier. Our on-field primary research with each SE which yielded insights on the unique capabilities that SEs leverage to differentiate themselves from government delivery models shall also be discussed.

As indicated earlier, the comparison would be undertaken on the basis of 2 levers, “Agility” and “Technology” by applying on their business models:



1. Reach

Existing Scenario

Most of the larger municipal bodies have adopted door/gate to dump system whereby an appointed private contractor collects waste from housing society gates using a closed body container mounted vehicles. During morning hours, waste from households (largely biodegradable in nature) is collected and used for composting. During evening hours, waste from commercial establishments (largely dry waste) is collected and used in recycling / bio-fuel plants.

The municipal bodies collect waste from slum areas as well. While door-to-door collection cannot be implemented in the slum areas due to narrow lanes and unorganized construction, slum residents are encouraged to bring their waste to a designated collection point at a pre-decided time slot.

These establishments provide a monthly fee for the collection which is higher than the fee applicable to residential units. Special one-time on-demand services are also offered for commercial establishments like community halls for collection of waste.

COMPARISON SNAPSHOT - REACH	
 Social Enterprise Delivery Model	 Government Delivery Model
100 TPD <i>Quantity of waste handled</i>	3700 TPD <i>Quantity of waste handled</i>
<i>Improves reach by integrating informal segments like rag-pickers to collect more waste</i>	<i>Traditional models of collection and management with limited innovations are adopted</i>
CONS	PROS

Source: Primary interviews and secondary research¹⁰⁶

Dry waste collected by rag-pickers is also eventually fed to the DWCCs. The dry waste centres are established at various key junctions within the city for easy access. For example, the municipal body in Bengaluru (BBMP) operates 77 DWCCs in the City.

In the current set-up, only a small proportion of the DWCCs are operated by the SEs, thus catering to a limited population and areas. SEs deploy trained collection agents to service their customers (Commercial establishments). They also set up dry waste pick up stations where residents can dump their dry waste. Residents and rag-pickers also have the option to deliver waste at the DWCC.

Application of levers by SEs to enhance reach

In order to improve the reach, SEs have willingly experimented with innovative models of delivery and leveraged technology / data for business intelligence. Particularly, continuous improvements to business model have been a focus area for most of these SEs in solid waste management. For example, NEPRA initially owned the transport vehicles in order to reach their customers (commercial establishments). However, as the scale grew, NEPRA realized that an asset light model would be necessary to scale their business. Hence they pivoted to a partner owned model in which the vehicles are not owned by the company but by the drivers themselves. The drivers are paid on the basis of distance covered and weight of waste transported. Due to this partner led approach, the drivers actively seek to build business (waste collection) and attract new clients. Both SEs (NEPRA and SweepSmart) also leverage an efficient network of rag-pickers, through tie-ups, thus improving their reach.

SEs also offer services like online and call based pick-up request. This enables new customers to log requests and a pick-up shall be conveniently scheduled. Traceability is core to NEPRA's model as the entire collection system is tracked via GPS. The company has deployed facial recognition for rag-pickers and transporters, thus maintaining a biometric profile of the people. All the rag-pickers are registered with NEPRA using their bio-metric profiles. Every delivery by the rag picker and payment made, is recorded and tracked using the bio-metric profile. This enables NEPRA to maintain their network even in an informal setting through constant communication and feedback.

¹⁰⁶ "Solid Waste Management Practices in Ahmedabad City", Mr. C. R. Kharsan, G.A.S ([Link](#))

2. Quality of Service

Existing Scenario



The core stakeholders in MSW are the customers (commercial and residential establishments) and the employees involved in waste management (collection agents, street sweepers, segregators, supervisors etc.). Hence, quality of service should be also be assessed at two levels; one at customer level (punctuality, quality of personnel deployed, vehicle condition) and at employee level (safety measures, quality of working conditions etc.)

At the customer level, effectiveness of Door/Gate to Dump system has been in question and in many areas citizens are devoid of regular and timely collection of MSW. Many residential societies have deployed door to door collection personnel on their own expense. The municipal bodies are also

responsible for providing waste collection in slum areas. However, it has been often reported in many slums that collection vehicles skip visiting slums often. As per the data provided by Ahmedabad Municipal Corporation, 337,000 commercial establishments are covered for collecting MSW. However, many shop owners have complained of irregular collection of MSW. Many commercial areas are covered during morning hours prior to opening of shops. This forces the shop owners to deposit waste along the street and footpaths for collection. In some cases, waste from shops is stored overnight outside the shops attracting stray animals.

At the employee level, there is a lack of effective implementation of guidelines on safety conditions by the authority. Municipal / contracted staffs often violate recommendations of Central Public Health and Environmental Engineering Organization’s (CPHEEO) Manual for Solid Waste Management (SWM) including manual handling of waste for loading of waste into vehicles. Also, the usage of safety kits and protective gear is limited. At the two government run DWCCs, there was lack of any drinking water facility and toilets. Waste is dumped in designated areas known as ‘storage tanks’. Since, due to piling of waste, it is found that the waste accumulates in areas other than the designated ones leading to poor hygienic conditions for the employees. The personnel deployed for sorting and segregation of waste do not adhere to the safety compliances.

The DWCCs operated by SEs focus on providing better customer as well as employee experience in terms of waste collection, payment management and better living conditions.

COMPARISON SNAPSHOT – QUALITY OF SERVICE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>100% coverage with minimal complaints from customers</i>	<i>Under delivery in few remote pockets</i>
<i>Working conditions adhere to the applicable laws and manuals</i>	<i>Unsafe and unhygienic working conditions of the employees</i>
<i>Nepra ensures that only less than 5% of the waste is sent to the landfill</i>	<i>More than 90% of MSW in India is directly disposed of on the land in an unsatisfactory manner</i>
CONS	PROS

Source: Primary interview and secondary research¹⁰⁷

¹⁰⁷ “Assessment of the status of municipal solid waste management in metro cities, state capitals, class I cities, and class II towns in India: An insight”. Atul Vaidya. 2009 ([Link](#))

Application of levers by SEs to enhance their quality of service

While the scale at which the SEs operate is very limited when compared to the municipal body’s scale of operations, SEs offer highest quality of service to their customers and better working conditions to their employees.

At the customer level, both the enterprises assessed focus on providing highest quality of service to the clients (commercial establishments). SEs adapt to meet the needs of various customer groups by tailoring, scheduling and organizing operations to suit the client’s requirements. For example, during registration, the customers need to convey the indicative quantity of waste which shall be provided, the type of waste, preferred time slot for pick-up and the services shall be structured accordingly. The customers were appreciative about the punctuality of the service and the conduct of the collection staff.

At the employee level, the SEs offer better standards of working conditions for their employees. For example all the DWCCs operated by the SEs have hygienic drinking water and sanitation facilities. The collection agents as well as the segregators in the SE run facilities are found to be using safety gear (gloves, mask etc.,) during operations. The facilities also maintained clean areas, with storage of incoming and outgoing waste clearly demarcated with minimal waste spread across.

SE also leverage technology to improve the quality of service offering. Similar to other app based models, once the pick-up is scheduled, the pickup vehicle is tracked for ensuring timely action. The waste is weighed at the pick-up point and a receipt is handed over to the customer. Once, the vehicle reaches the DWCC, a validation of weight is undertaken to ensure limited pilferage.



3. Ease of Access

Existing Scenario

Since waste management is a service driven sector, it would be appropriate to evaluate ‘ease of access’ in terms of availability of services during emergency and alternate mechanisms during disruption of services. Under emergency and grievance redressal mechanism, the municipal bodies typically have 3 modes of operation (registering complaints) – telephone, internet, in-person.

In the event of any one time requirements like pick-up of dead animals, event waste etc., the customers have to inform the municipal body using any of the modes as mentioned above. On receiving the request a team with appropriate pick-up tools is designated. The management of this pick-up mechanism is found to be effective based on the interactions with citizens of Ahmedabad.

For any service related complaints, a number is generated for future reference upon registration. However, the complainant is not informed about the status of redressal of his/her complaint at any

COMPARISON SNAPSHOT – EASE OF ACCESS	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Prompt services for pick-up requests</i>	<i>Efficiently managed pick up mechanism</i>
<i>Core focus on complaint redressal systems</i>	<i>Ineffective complaint management systems</i>
CONS	PROS

Source: Primary interview

point. Moreover, in case no action is taken for the complaint, there is no mechanism of escalation of the same to higher level officers. There is limited awareness among the citizens regarding the grievance redressal system in place. Moreover, accountability of municipal staff towards a particular complaint is not clearly defined.

Application of levers by SEs to enhance ease of access

SEs like Nepra operate a call centre which support customers in scheduling pickups, registering complaints, ordering jumbo bins etc. Once the complaint / pickup is registered, the operations team is provided with the details. Once, the vehicle is assigned, the entire journey path (from the current location to pick-up location and the DWCC) is tracked and monitored. Any abnormal delay is highlighted and attended to immediately.



Since, the payment to the waste collectors (vehicle owners) is provided on the basis of waste collected, high levels of ownership is observed. There is very limited denial from the waste collectors if a location is allotted to them for pick-up.

Technology plays a very important role in the SE business models. All the vehicles are GPS enabled and carry a digital weighing scale. The quantity and type of waste generated from different regions / customers is tracked and monitored in order to predict variability and changes due to seasonality. This analysis helps the SE in understanding the demand and proposes changes to the vehicle size, type, and pickup times and also manage inventory at the plant.

4. Efficiency

Existing Scenario

The efficiency element in MSW comprises of collection and extraction efficiency. To elaborate, collection efficiency refers to the effectiveness with which the designated waste is collected and transported to the DWCC. On the other hand extraction efficiency refers to the ability to extract maximum reusable material from the collected waste, thus ensuring limited forwarding of waste to the landfill. The government agencies contract out Door/Gate collection of MSW to private agencies. Once the waste is collected from Door/Gate using mini-vans, it is then transferred to compactors (10 and 12 MT) at depots, transfer station or along roads. The compactors then transport the waste to either open dump site or to one of the processing plants.

COMPARISON SNAPSHOT – EFFICIENCY	
 Social Enterprise Delivery Model	 Government Delivery Model
100% Transportation of waste collected to DWCC	~80% Transportation of waste collected to DWCC
90% Extraction of recyclable materials from dry waste	10% Extraction of recyclable materials from dry waste
24 Categories of waste extracted	4 Categories of waste extracted
CONS	PROS

Source: Primary interview and secondary research¹⁰⁸

During transportation, vehicles can be seen on road in partially covered condition, thus leading to spillages on-route. Minimal monitoring of fitness condition of vehicles is undertaken by the

¹⁰⁸ "Solid Waste Management Practices in Ahmedabad City", Mr. C. R. Kharsan, G.A.S ([Link](#))

municipal corporations. Many vehicles with broken containers, improvised closing lids, sharp protruding objects, non-functional electrical functions can be observed. The waste collected is not weighed at the time of pick-up, but only at the time of delivery at the processing centre.

In the dry waste collection centres operated by the municipal bodies, limited extraction of recyclable materials takes place. On an average only 10% of recyclable material is extracted from the waste which is collected from households, commercial establishments, road sweeping and other areas. The remaining 90% of the waste is directly dumped in the open dump sites. Only a small percentage is sent to scientific landfills.

Application of levers by SEs to enhance efficiency

Due to the limitation in accessing additional waste (areas are allocated to SEs and they cannot provide services beyond those areas), SEs focus on improving efficiency both in collection and extraction in order to improve profitability. Apart from consistent improvements to business models, they rely heavily on technology to improve efficiency.

The SEs undertake detailed assessments of the characteristics of the waste being collected frequently and categorize them into 20-24 categories. These categories could be PET bottles, other plastic bottles, cans, clothing, plastic, wood, glass, metals and paper. These category numbers fluctuate based on the input waste and the demand from the recyclers. For example, NEPRA used to focus on 15-18 categories of waste initially. When they realized the potential for micro-segmenting these categories based on the market requirements, they moved to 24 categories of waste. In the case of municipal corporations, the number of categories is 2-4.

Once the categories are identified, the SEs also establish partnerships with recyclers of the respective category. Recyclers pay a higher value and are able to predict their future need for segregated waste since this improves their efficiency and capacity utilization.



The effective segregation of waste and established partnerships ensure that SEs are able to extract almost 90% of the total waste collected. The remaining components consist of construction and debris waste and other inerts, which is further sent to landfill.

Technology is integrated into the collection system in order to improve collection efficiency. Waste is tracked using Geographic Information System (GIS) and Radio Frequency Identification (RFID) from the collection point till it reaches the processing centre. In order to enable effective identification of categories, a conveyor belt with abilities to separate ferrous and non-ferrous materials is integrated into the manual process of segregation.

5. Service Delivery Outcomes

Current Scenario

The primary service delivery outcome in SWM is the ability to ensure 100% collection from all the collection points on regular basis and 100% transportation of the waste collected to the DWCC. The government agencies adopt technology based monitoring (RFID and GPS) during various stages of the waste collection, transportation and disposal process. RFID tags on vehicles support identification and traceability of waste streams. Tags attached to waste containers enable operators to monitor sorting quality, track the number of times a container is placed for collection and track the weight of its contents. All the vehicles are equipped with GPS based tracking mechanism. This enables efficient tracking and scheduling of vehicles and timely coverages of areas.

COMPARISON SNAPSHOT – SERVICE DELIVERY OUTCOMES	
 Social Enterprise Delivery Model	 Government Delivery Model
Rigorous data capture and analysis using technology	Defunct technology tools ensuring limited collection of data
CONS	PROS

Source: Primary interviews

However, on inspection, GPS devices and the RFID tags are either not installed or not operational in many vehicles. In the absence of a GPS enabled fleet, monitoring of vehicles is not undertaken currently. The ineffectiveness of GPS based monitoring is evident, as the customers in the region served by municipal bodies complained of missed services. On an average the corporation did not service the customers on at least 4-5% of the days in a year.

Similar to the government bodies, SEs also adopt similar technologies like GPS and RFID for tracking of vehicles and monitoring of waste. However, due to the dependency on accurate data, SEs ensures that the devices are operational at all times. The customers served by SE were appreciative of the punctuality in their service and did not complain of any instances when the SE missed service. The customers indicated that the SE service was available 100% of the days in a year. In case of any emergency situation, alternate solutions were provided for the safe disposal of waste.

Application of levers by SEs to enhance service delivery outcomes

Agility as lever has limited application in terms of enhancing service delivery outcomes. However, the extensive adoption of technology is an integral part in an SE's business model to improve the service delivery.

Through effective GPS monitoring SEs are able to provide services without fail to all their customers. In the event of any breakdown of vehicles or absence of drivers, information is shared by the RFID-GPS system with the control centre and a standby vehicle is deployed thus having minimal impact on services.

6. Behavior Change

Existing Scenario

Behavioural change is core to SWM. Since the introduction of Swachh Bharat Abhiyan, most of the municipal bodies have focused on awareness building. At the household level, awareness around effective segregation of waste and the benefits are communicated. For example, Ahmedabad Municipal Corporation started an information, education, communication (IEC) campaign in 2012 to spread awareness on

solid waste management and urge citizens to do their bit in keeping the city clean. Activities included door-to-door awareness campaigns, public events (clean-up drives) and competitions at public places have been planned as part of this campaign. Mass communication tools like rallies, street plays, skits, hoardings, lectures at schools and colleges were also a part of the campaign. This campaign had been continuing at regular intervals round the year.



In 2018, Ahmedabad Municipal Corporation (AMC) initiated a mega awareness drive on waste segregation. Thousands of civic workers from AMC conducted awareness campaigns in residential buildings, schools, colleges etc. Post extensive campaigns, in a major step towards ensuring segregation at source, AMC stopped collecting unsegregated waste from residents and/or commercial establishments.

The social enterprises also conduct awareness campaigns targeted at their customers and communicate the efficient ways of segregating waste. The waste collected is also monitored at the source on a regular basis to ensure compliance to the guidelines. In case of any irregularity, the same is communicated to the customer.

The rag pickers are one of the key elements in the waste value chain for the social enterprises and hence there is a great focus on behavior change among the rag pickers as well. The SEs conduct awareness building activities for identification of hazardous waste and safe waste handling techniques. Apart from ensuring that high quality waste is provided to the SE, these campaigns build trust among the rag pickers.

Application of levers by SEs to drive behavior change

Very limited application of the two levels (Agility and Technology) is found in behavior change under the waste management segment. While innovative models of communication strategies are adopted like presentations, street plays, print etc., limited innovation in business model can be brought about.



COMPARISON SNAPSHOT – BEHAVIOUR CHANGE	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Focus is limited to behavioural change among the customers</i>	<i>Government focus on extensive behavioural change campaigns and activities</i>
CONS	PROS

Source: Primary interviews

7. Job Creation and Gender Empowerment

Existing Scenario

The SWM department is one of the largest employers among other departments within the city administration. At per data provided by AMC during meetings and discussions, ~12,000 sweepers are employed by the Municipal Corporation to undertake street sweeping and cleaning. Approximately 500 conservancy personnel supervise the work undertaken by the sweepers and 200 personnel handle the administration. Almost 30% of

COMPARISON SNAPSHOT – JOB CREATION & GENDER EMPOWERMENT	
 Social Enterprise Delivery Model	 Government Delivery Model
<i>Supports formalization of informal sector</i>	<i>Creates local job</i>
<i>Strong emphasis on delivering services by employing women</i>	<i>Limited focus on employing women</i>
CONS	PROS

Source: Primary interviews

the sweepers are recruited on daily wages and/or contracts. Most of the sweepers recruited are from low income communities and emerging classes.

Around 5-10% of the street sweepers are women and a slightly larger percentage (15-20%) is seen among other employees. Women are often involved in voluntary community clean-ups, street sweeping, and even primary collection of waste. As women are often care takers of the children in the household, they avoid being exposed to waste management, fearing contracting diseases such as hepatitis, diarrhoea, and eye/skin infections more frequently. This is one of the key reasons impacting participation of women in the workforce. In the DWCCs run by the government an equal proportion of males and females have been employed for segregation purposes.

NEPRA employs approximately 40 personnel in the segregation unit apart from 100+ collection agents who ply vehicles. Nepra also informally engages 300+ rag pickers to collect dry waste from different parts of the city. The collection personnel deployed by SEs are primarily male employees with approximately 5% of female collectors. However, a larger proportion of females could be seen in the sorting and segregation section (~70%). This is primarily due to the deployment of local women organizations like SEWA¹⁰⁹ for sorting activities.

Application of levers by SEs to enhance job creation and gender empowerment

While agility in terms of business model innovation with a focus on job creation has not been witnessed, SEs have frequently evolved their business models (showcased agility) that has enabled them to contribute to gender empowerment. For example, in the initial days, NEPRA deployed males for sorting purposes. But, once they realized that females are more efficient in understanding the different qualities of paper/plastic, they adopted a female focused approach for recruiting sorting personnel. There is limited application of the lever agility in terms of job creation.

Among the 7 impact parameters, high influence of both the levers is visible in the context of quality of service, ease of access and efficiency. Reach is moderately impacted by the two levers. Technology is the

¹⁰⁹ Refer to the glossary

primary lever in case of data collection which can help in measuring service delivery outcomes. Both levers, however, exert limited influence over the behaviour change and job creation parameters.

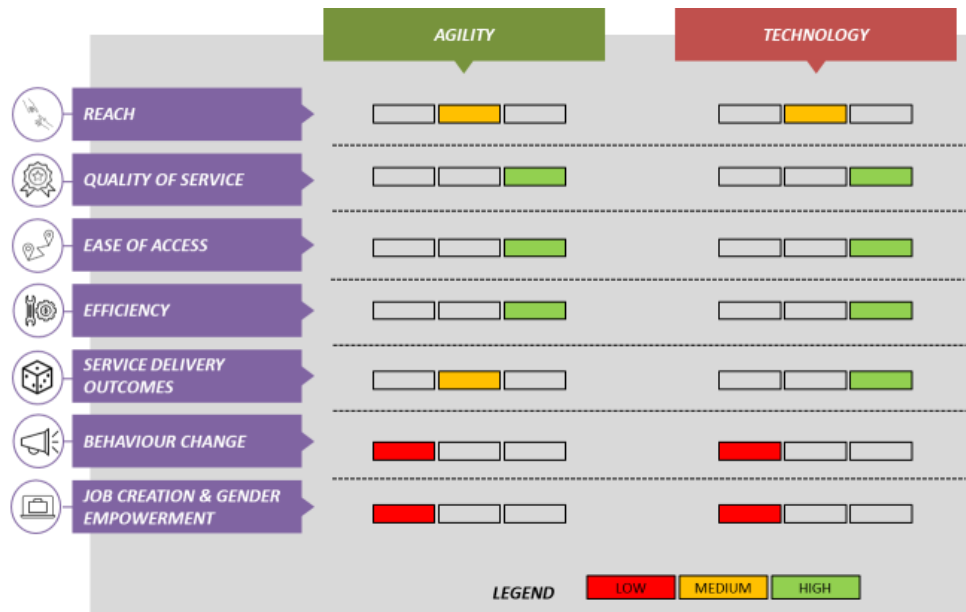


Exhibit 23: Intensity of levers across impact parameters

Opportunities for Collaboration

Over the past decade, the Indian government has encouraged localities to privatize municipal solid waste management (MSWM), an essential public service that local bodies have tended to perform inadequately.¹¹⁰ Consultations with key stakeholders reveal that the government and the public are the segments of society within which we need to find the solution to the solid waste crisis. In the case of SWM, dry waste is the segment which can attract private sector interest due to its relative viability when compared to wet waste. In SWM (dry waste) the government needs support in (a) improving efficiency – collection and extraction (b) improving service quality and (c) improving ease of access. On the other hand SEs need support in (a) scalability and (b) behavior change communication. The following areas of collaboration emerge.

- **The government can enter into concession contracts with the private players to manage dry waste.** Presently, the DWCCs owned and operated by the municipal bodies are managed inefficiently. The government can hand over all the DWCCs to the private players for operations. The collection of waste, collection of fees from the commercial establishments, segregation and sale of segregated products shall be undertaken by the private sector.
- **The government can also employ SWM consultants to design and handhold waste management systems.** The current mechanisms adopted by the government are technologically inadequate and operationally outdated. The government can seek support from SWM

¹¹⁰In 2010, the Ministry of Environment and Forests reported that municipal solid waste “collection efficiency is only around 60% and the rest 40% lies uncollected and scattered all over our towns and cities, polluting the surrounding land and water resources” (MoEF 2010:3).

consultants to design collection methodology, sorting techniques, process flow design and provide hand-holding for effective operations of the same.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

The study revealed that broadly, the Social Enterprises excel in the areas of quality of service, ease of access and efficiency across the key sectors. The government delivery models are far superior in the areas of reach, job creation and behavior change when compared to SEs. The researchers strongly believe that rather than competing against each other, the SEs and the government delivery models should leverage each other's strengths and improve their service offering. The comparative assessment of SE and government service delivery models revealed that enhancing collaboration with the government can help SEs in to augment their reach. From the government's standpoint, such collaboration can help in improving the efficiency and quality of its services.

SEs, amongst other factors, exploit their inherent agility and an inclination towards leveraging technology to introduce innovative business models that aim to efficiently deliver access to affordable and high quality solutions to underserved communities. For instance, iKure has successfully treated over 80,000 people using its hub and spoke model; Karma has leveraged technology to deliver access to specialist doctors to remote rural patients; Cygnus has strategically located its hospitals near highways to offer emergency care to road accident victims; Nepra has banked on location tracking and technology based waste segregation system to improve efficiency and Edubridge has evolved to unlock different revenue models to ensure business sustainability and leveraged technology to monitor and improve training outcomes. Other examples include Narayan Hrudayalaya which focused on process innovation than product innovation to build one of the most successful hospital brands in India offering accessible, affordable healthcare. SELCO, a rural energy service company, combines door step service models via energy service centres and by promoting local entrepreneurship to reach the under-served areas in the Country.

Despite their efforts however, SEs find it difficult to substantially increase their reach and penetration and therefore, scale their innovative business models. To encourage SEs to keep experimenting and iterating their business models, there are a few specific actions that stakeholders, including governments, DFIs, entrepreneurial support organizations, corporates and impact investors, should consider as effective tools to successfully scale impact in diverse geographies.

Areas of potential intervention

The key areas where SEs require support to successfully grow and scale their operations and impact, are a) Access to markets and demand generation b) capacity building c) financing and d) Access to infrastructure SEs are often forced to course correct and even scale down their operations due to challenges experienced on these fronts.

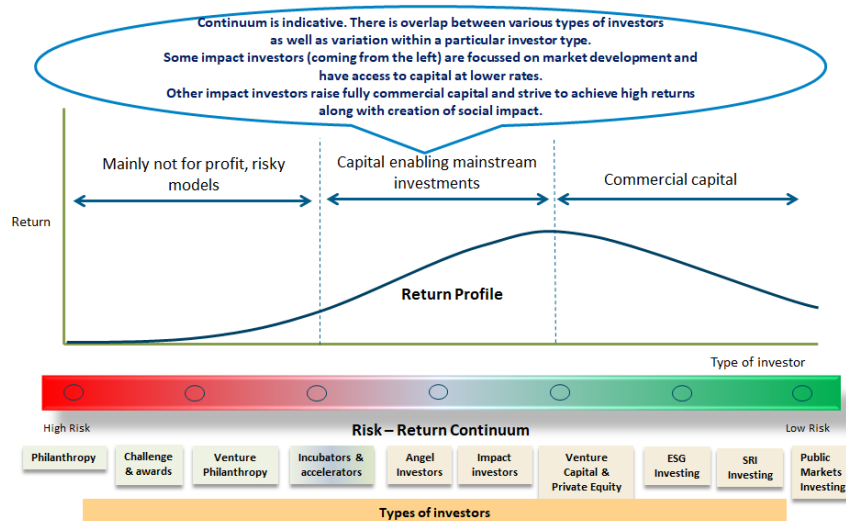
- **Access to markets and Demand generation:** After finalizing their business and operational model, most SEs find it difficult to allocate sufficient resources to create awareness and spur behaviour change that is critical to generate demand for their services. For every new center or spoke launched, SEs need to divert financial resources and managerial bandwidth to conduct awareness building and marketing initiatives at the grassroots, given that many of their services are 'push services'. The government on the other hand has the deep connect to run campaigns focused on

awareness creation, community convening and behavior change. SEs can leverage this outreach capability of the government, to provide their services to a wider set of consumers. For instance, Nepra can benefit from the government’s initiatives advocating proper waste segregation in urban agglomerations to reduce the pressure on the solid waste management infrastructure. Similarly, Edubridge can leverage the government’s extensive outreach programs under various initiatives such as Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana (PMKVY), National Apprenticeship Promotion Scheme (NAPS) and Industrial Training Institutes (ITIs) etc., to create a pool of skilled and employable human resource pool.

Leveraging the Government’s strong grassroots network and community connect, SEs can significantly benefit from stronger demand generation which would help them achieve break even faster and shorten timelines for them to scale. Government in turn, would be able to facilitate access to improved quality of services provided by SEs for the underserved communities and in effect, enhance the social impact delivered.

- Access to Finance:** Over 20 million, Micro, Small and Medium enterprises (MSME) in India rely on sources of finance that are often inadequate or expensive, and act as a constraint on growth. Debt from institutional sources such as banks and non-banking finance companies often requires collateral, which early stage entrepreneurs struggle to provide. In such cases, there arises a need for equity or unsecured debt – collectively referred to as risk capital. The addressable secured debt demand for MSME is estimated to be upwards of USD 500 billion¹¹¹ while the corresponding risk capital gap is estimated to be upwards of USD 30 billion¹¹².

The quantum of capital requirement as well as the type of capital needed by enterprises differs depending of the stage of business they are at. While early stage SEs need seed capital to pilot, prove and establish their unit models, SEs embarking on their growth phase requires access to growth capital and the associated networks. The Exhibit below depicts the diversity of sources of capital available right from grant funding by foundations & DFIs to public capital markets.



¹¹¹ IFC report in partnership with Government of Japan conducted by Intellectap (2018), [Estimation of Debt Requirement of MSMEs in India](#)

¹¹² IFC report in partnership with Government of Japan conducted by Intellectap (2018), [Assessment of State of Risk Finance for MSMEs In India](#)

SEs like Vaatsalya, Cygnus, Sudiksha and Karma for instance, can reach and serve greater number of underserved people if they secure seamless access to debt capital for covering their working capital needs and equity growth capital to help them expand to more locations and enhance the range of their services.

- **Capacity building:** Not all entrepreneurs possess the required business capacity and face significant challenges in adapting business models, perfected in one location, to successfully scale. This stems from a combination of external and internal factors. Externally, the heterogeneity of market conditions across different locations acts as a barrier. Internally the lack of management bandwidth and operational capacity to focus on replication efforts limits the ability of SEs to scale. SEs therefore, need support in building their capacities, prioritizing their activities, standardizing their operational processes and strengthening their operations to be able to scale their business models. Tailored mentorship and guidance from experts can help them prove their models and accelerate their journey towards investor readiness.
- **Access to infrastructure:** While the business models adopted by the high potential Social Enterprises are designed to deliver services efficiently at a lower operational costs, the initial capital expenditure burdens the SEs and has the capability to impact the sustainability of the project. These high capital requirements are largely found in sectors like Healthcare and Waste Management. Collaboration models which leverage the infrastructure developed by the Government and service efficiency of SEs have the potential to mitigate the upfront capital expenditure, thus ensuring long term sustainability. Public Private Partnership (PPP) models like Operate-Maintain-Transfer (OMT) in which the Government leases out their infrastructure to be operated by private sector could be successful models to replicate.

Recommendations on intervention design

The combination of large latent unmet societal needs and constraints on government capacity to address all aspects of these needs provides a unique opportunity to the growing base of social entrepreneurship to create impact at scale. While some limited impact can be created by social entrepreneurs on the basis of their own strength, to create “impact@scale” an ecosystem to support capacity building of SEs, facilitate access to capital and curate public and /or private partnerships is a must.. Given this, we have provided below a set of recommendations that have at their core the establishment of effective partnership mechanisms through which a range stakeholders (like large DFIs, foundations, investors, other private sector companies and Government of India) can collaborate to offer services that **‘Search, Seed Support and Scale’** SEs. These recommendations for collaboration mechanisms can be visualized as a support continuum for providing bespoke services to high potential SEs.

While **‘Search’** focuses on identifying high potential SEs and providing them the required capacity building support, **‘Seed’** is focused on catalyzing capital access to SEs. **‘Support and Scale’** is focused on helping the SEs with business model support, revenue growth strategies etc. The former will provide equity seed capital to emerging and early stage SEs and growth capital for high-growth enterprises. The latter on the other hand will help mature SEs with proven business models scale by providing debt capital.

1. SEARCH: Social Enterprise Collaboration Lab (SECL)

Over the past two decades, India has seen the development of a thriving social enterprises ecosystem that seeks to address the needs and aspirations of low income consumers by integrating the “Base of the Pyramid” in value creation through innovative business models¹¹³. These enterprises provide an array of services in diverse sectors like healthcare, education, water, sanitation, energy, & waste management and seek to supplement the traditional delivery models.

For the long term growth and scale prospects of the SE ecosystem there is a need to

- Carry out research and harness knowledge to learn from existing models
- Create a base of impact data
- Scale and replicate what has worked as well as create meaningful partnerships between traditional development actors, private sector and SEs.

However, there is no single platform that enables SEs to showcase their abilities to facilitate such an interaction. The objective of SECL is to serve as an online platform for SEs to communicate

- a) **Value proposition** - The platform will enable SEs to showcase their innovative solutions and detail key characteristics of their business models (Capital Expenditure, Operating Expenditure, manpower needs, technology architecture etc.). Over time, SECL will in effect, curate a growing database of SEs containing their profiles which will augment ready reference by the ecosystem stakeholders.
- b) **Ability to create impact** - The platform will also allow SEs to communicate and showcase the impact by them on relevant social and environmental metrics.
- c) **Capacity building needs** to ecosystem stakeholders such as corporates / government and closely collaborate with them. Arguably the most important functionality of SECL will be to enable SEs secure capacity building support in the form of – 1) incubation & acceleration support, 2) collaborative use of technology and 3) collaborative pilot facilitation with government and private sector.

¹¹³ BertelsmannStiftung & Intellectap (2018),The Indian Social Enterprise Landscape

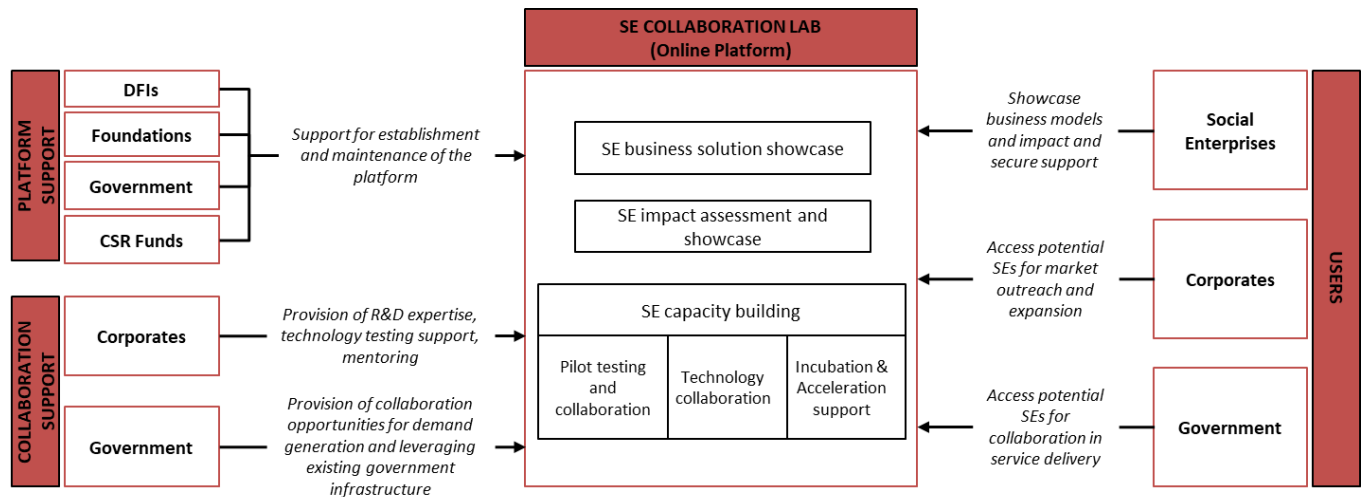


Exhibit 24: Indicative structure of Social Enterprise Collaboration Lab (SECL)

- Incubation and acceleration support:** Provision of a range of business incubation and acceleration services could be helpful for SEs in thinking through their business model better. The portfolio of services could include access to physical work space, counseling, mentoring and training support, demo days and networking platforms. Through these services, SECL would be able to help early stage SEs iterate and fine tune their business models, improve their strategic decision making capabilities and provide them opportunities to present their models to potential investors. Relatively mature SEs on the other hand, would benefit from investor connects and access to networking platforms to raise growth capital.
- Technology Collaboration:** SECL shall facilitate collaboration between Japanese businesses and impact enterprises for last mile reach, market development, innovations and test bed initiatives, and conducting feasibility studies. The Research and Development facilities of the Corporates shall also be leveraged for technology testing and technology development by the SEs. The Corporates businesses in areas such as processes and technologies, and business model components such as rapid prototyping, technology adoption etc.
- Collaborative pilot facilitation:** SECL should facilitate collaborative pilots between SEs and other ecosystem stakeholders such as the government, corporates to set the stage for further replication and scaling. The pilots would provide opportunities for SEs to integrate their models with existing or potential initiatives of such stakeholders. Collaborative pilots with the government, for example, may include delivery of services by SEs using existing government infrastructure, SEs acting as a service provider to improve efficiency and service quality of an existing government delivery models or the government activating its grassroots networks in rural areas to generate traffic for SE delivery centers. Similarly, SECL can also help design and facilitate collaborative pilots between SEs and CSR initiatives of large corporates.

While an intervention like SECL will require initial seed funding in the form of grant capital, over time it has the potential to become sustainable by tapping into various revenue streams like subscription fee, service fee (impact assessment / audit / legal etc.), investment facilitation fee, acquiring equity stake in-lieu of incubation services provided etc.

An example of this is the work being done by Maharashtra State Innovation Society (MSINS) in sourcing & selecting high impact entrepreneurs, curating specific intervention within the most relevant government department & the entrepreneur and providing grant funding to execute the intervention in a time-bound manner. Such pilots help in building capacity of the government to work with entrepreneurs while also sensitizing entrepreneurs about the challenges that government departments are seeking to address. However, this initiative is limited to a single state, is operationalized with a limited objective of running a single pilot in a time bound manner and has limited pool of capital available to catalyze growth.

2. SEED: Social Enterprise Development Facility (SEDF)

The primary focus of SEDF will be to enable stage appropriate access to capital by reducing transaction barriers and acting as a bridge between pools of capital & SEs. SEDF is intended to be a sustainable, impact-driven facility with the aim of providing equity capital and technical assistance within certain identified priority sectors to enhance developmental impact. SEDF will facilitate investments and will house two components.

(a) **Investment facility:** While the continuum of capital is well established, there is a need to support the establishment of an alternative financing facility to support the needs of social enterprises. Such an alternative financing facility could focus on specifically meeting a few critical needs of early stage enterprises in terms of tenor, ticket size and an ability to monetize impact.



- **Blended Finance:** Combine low cost sources of capital or grants with commercial capital
- **Guarantees:** Use of first loss tranches explored to catalyze lending for social outcomes
- **Results Based Financing:** Of the several variants, Social Impact Bonds explored where an outcome funder buys impact created by social enterprises
- **Securitization:** Securitizing future cash flows from consumer payments of social enterprises
- **Lease Financing:** Leasing assets and equipment for enterprises
- **Peer to peer lending:** Enabling online platform for matching retail lenders to social enterprises
- **Revenue based debt:** Debt whose repayment is linked with revenue earned rather than fixed installments
- **Bonds for Enhancing Access:** Corporate bonds raised through a SPV with partial credit enhancement

Exhibit 25: Risk innovative financing mechanisms

Such a facility could blend capital from

- Multilateral organizations, development finance institutions (DFIs) and foundations in order to provide low cost and comparatively less stringent mandates on minimum return expectations and
- Capital from investors investing with impact, ESG, gender or SRI lenses that expect a commercial rate of return along with impact creation
- These facilities can include characteristics of different innovative mechanisms such as results based mechanisms, social impact bonds etc with an objective to catalyse the flow funds to the sector and stimulate capital flow from commercial financiers.

The investment facility could be designed as a fund which directly invests in identified SEs or as a fund of funds which provides returnable capital to impact funds focused on supporting SEs. The facility could pool capital from a variety of sources such as impact investors, commercial investors and donors. It will deploy equity capital in social enterprises which exhibit a potential to deliver impact at scale. The investment facility will be managed by a Fund Manager who will be responsible for identification of SEs, deploy equity capital and monitor the impact created over the investment horizon.

(b) **Technical Assistance facility:** The technical assistance facility could be structured to attract funding from DFIs, foundations, philanthropic organizations and also to attract CSR allocations of Japanese companies. This could potentially also represent a significant pool of funds for the technical assistance facility to leverage. However, attracting and channelizing CSR funds for this purpose may require changes in existing regulations. The technical assistance facility would deploy funds mobilized from these sources in capacity building initiatives of the investee companies on SEDF. The areas of capacity building may include, market entry strategy, collaboration models, pilot testing, market research etc.

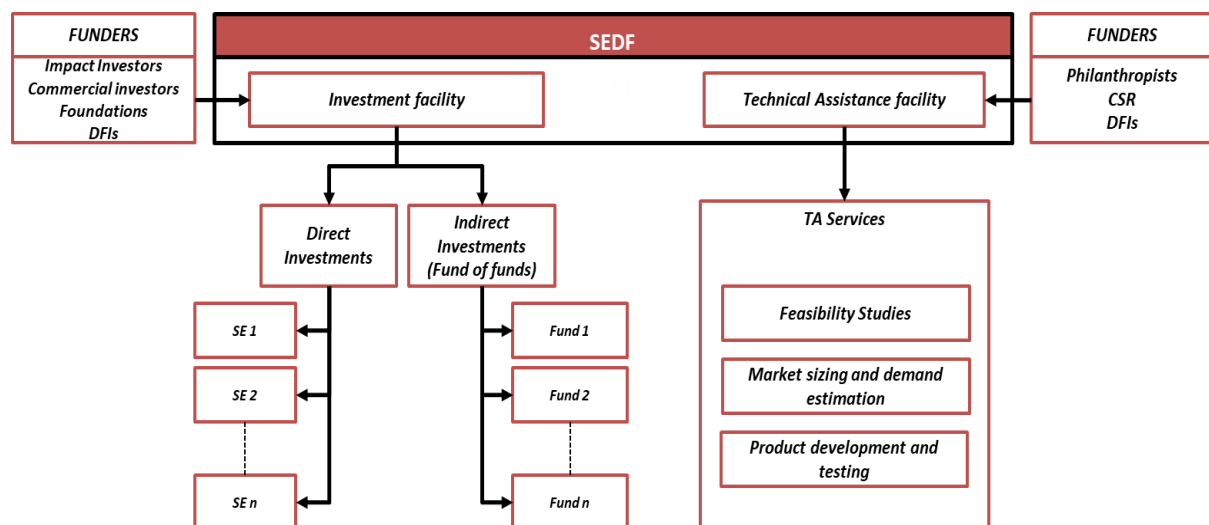


Exhibit 26: Indicative structure of Social Enterprise Development Facility (SEDF)

3. SCALE: Japan-India Social Enterprise Alliance (JISEA)

While SEDF will focus on unlocking access to equity capital for growth oriented SEs, JISEA is intended to be a facility to help relatively mature SEs with proven business models to secure debt capital. JISEA could enable SEs with robust project development plans to access long term low cost debt capital. JISEA can source capital from international investment institutions like Japan Bank of International Cooperation (JBIC), IFC, ADB and blend the same in an appropriate legal structure.

JISEA could deploy grant capital from DFIs, leading foundations and leverage Indian Government schemes promoted by Ministry of MSME and Ministry of Commerce and Industry to provide project preparation support to SEs for accessing required debt capital. SEs can apply for JISEA grants for availing such project preparation support. After evaluation of the application JISEA can allocate an empaneled service provider to provide the relevant support. The project preparation services will include feasibility studies, developing market linkages and partnerships, product development and access to value engineering, debt advisory, legal support for due diligence, environmental and social impact assessments.

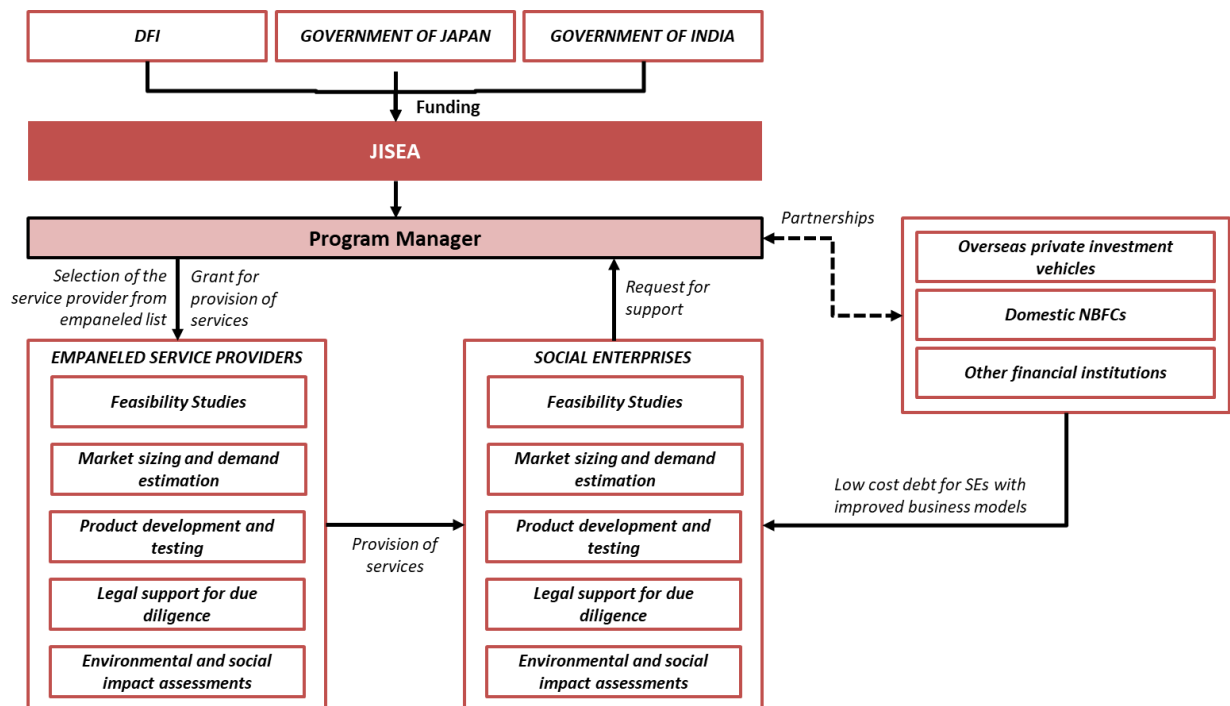


Exhibit 27: Indicative structure of Japan-India Social Enterprise Alliance (JISEA)

Critical elements of successful collaboration between government and SEs

The models proposed above, suggest that there are various forms of collaboration to enable the SEs to be scaled up. Collaborations between SEs and government service delivery models can usher in substantial mutual benefits for SEs and the government. However, for such collaborations to be successful, certain critical elements or success factors need to be factored into their design. These factors are – a) integration of respective strengths, b) Effective partnership framework and c) robust financing mechanism.

- **Integration of relative strengths:** The comparative assessment of SE and government service delivery models across different solution spaces clearly revealed their relative strengths. Any collaboration mechanism should by design, integrate the relative strengths of the two types of models. The government can tap into its wide reach and credibility among grassroots communities, to support demand generation for services offered by SEs. SEs can help government delivery models become more robust and efficient (lowering the costs) in delivering quality services. In primary healthcare for example, government PHC infrastructure can be used by SEs to provide patients access to specialist doctors by leveraging technology.
- **Effective partnership framework:** An enabling institutional framework becomes a major aspect for implementing a public private partnership. For any partnership to be successful it is important to have the program structure in place with clearly defined goals, responsibilities, expectations and payout conditions. For instance, NSDC created by the Ministry of Finance encourages SEs to participate in setting up and operating Pradhan Mantri Kaushal Kendra (PMKK) centres for skills training, by providing financing of up to INR 7 mn per centre and also provision for additional loans. NSDC also carries out the responsibilities associated with monitoring, supervising and assessing the centres. This framework helps SE focus on their core strengths around delivering quality training without worrying about operational issues.



As a part of the partnership framework, it is also imperative for the government to clearly define targets and monitor progress and results. It becomes a tool for identifying successful approaches and tracking progress toward desired outcomes. This also helps in measuring the effectiveness of the programs and encourages SEs to deliver as per expected standards. For instance, in case of PMKK centres, NSDC conducts surprise visits and collects data from all stakeholders to ensure proper implementation of the training programs. Similarly, under the affordable housing program, the government monitors number of houses constructed and beneficiaries trained in order to evaluate the success of the program.



- **Robust financing mechanism:** For effective implementation of partnerships, SEs need access to a robust and transparent funding mechanism. Given that business sustainability is of paramount importance for SEs, they are keen to participate in government programs which factor in adequate and timely payout mechanisms. The government, under the Ayushman Bharat program, has tied up with several insurance operators who pay a pre-decided rate to private healthcare providers empaneled with them based on treatment packages. Similarly, for vocational education, the government pays training enterprises on the basis of number of trainees trained.



Strengthening of the SE ecosystem in India will provide the necessary fillip to SEs scale their business models and enable them, in conjunction with government efforts, to magnify the social impact delivered. SEs require support in the form of access to markets and demand generation, capacity building, financing and infrastructure. The recommendations identified above lay emphasis on stakeholder collaboration mechanisms that can potentially address these requirements at the ecosystem level, particularly with respect to facilitating easier channeling of capital and delivery of required capacity building support for SEs. By enabling SEs to scale up faster, the mechanisms in turn,



promise to support the government's objective of improving the quality of services delivered to underserved populations and also reduce the financial burden for the government in the long term.



ANNEXURE 1: SE PROFILES



iKure Techsoft  		
Solution Space	Operating since	Innovation Type
<i>Primary Health Care</i>	<i>2010</i>	<i>Leveraging technology for quicker and accurate primary care, delivered through a hub and spoke model</i>
Business Model Overview		Team
<ul style="list-style-type: none"> iKure delivers its services through hub and spoke clinics equipped with doctors, health workers and equipment offering health care services within a distance of 5 kms. iKure's portfolio of services includes on-site general medicines, maternal and child care, computerized eye care, on-site eye glass cutting & edging, pathology services and telemedicine. They make use of their in-house software and point of care devices to collect and analyse patient information. iKure has created an ecosystem by partnering with local NGOs for ground mobilisation, hospitals for secondary and tertiary care as well as research organisations for clinical and technical knowhow of various ailments. They also earn their revenue by licensing the software on a subscription model and distributing products such as medicines, nutritional supplements, spectacles, sanitary napkins etc. 		<p>SujaySantra <i>CEO and Founder</i></p> <p>Dr. Lalmohan Banerjee <i>Sr. Medical Advisor</i></p> <p>Rahul Chatterjee <i>Chief Growth Officer</i></p>
		Contact Details
		<p>Address: 141-A, Jodhpur Garden, Near South City Mall, Kolkata - 700045, West Bengal, India</p> <p>Phone: 033-2422 0464/4063 4188</p> <p>Email: contactus@ikure.in</p>
Nature of engagement and collaboration with the government		
<ul style="list-style-type: none"> iKure collaborated with North Eastern Electrical Power Corporation (NEEPCO) and Think Zero Initiative to offer its services including physical doctor consultation, telemedicine, ECG and other diagnostic tests in a remoted village called Mawdem. It has partnered with Kolkata Municipality Corporation (KMC) to implement cardiac solutions using certified ECG devices in Kolkata. The initiative also involves collecting data to improve care delivery and screening vital parameters like heart rate monitoring, disorders etc. In association with Karnataka State Road Transport Corporation (KSRTC) iKure Conducted 14 eye screening camp for the staff where 997 patients were screened. 		
Social Impact		
<ul style="list-style-type: none"> Treated 800,000 patients till date and covered a population of 7.7 million across 3,320 villages It has over 50,000 health card beneficiaries Trained over 400 community health workers. The workers have experienced a wage increase of INR 180 per month 		
Road Ahead		
<ul style="list-style-type: none"> iKure plans to operate ~170 hubs and treat over 7 million patients within the next 5 years 		



Karma Healthcare  		
Solution Space	Operating since	Innovation Type
<i>Primary Health Care</i>	2014	<i>Leveraging technology for greater reach and connecting patients with medical providers</i>
Business Model Overview		Team
<ul style="list-style-type: none"> • Karma Healthcare is operating e-doctor clinics in rural and semi-urban areas with the objective of solving the problem of lack of access to healthcare. • Currently operates 20 e-Doctor clinics in the underserved communities of Rajasthan and Haryana. • It has an in-house software that manages patient queues and doctors, connecting one to the other in a way that minimizes waiting time. Economies of scale will be achieved since all doctors can consult all patients across the centers through telecommunication. • All clinics are managed by trained nurses and supported by an outreach worker that goes door to door generating awareness in the catchment area of the centers. • Post consultation, they gather feedback from patients by a dedicated feedback executive to capture patient experience and offer counseling through a trained counsellor, if required. • Karma has also entered into implementation partnerships with various foundations and agencies such as UBS Optimus Foundation, Department of Foreign Trade and Affaris-Australia Government, Pranab Mukherjee Foundation etc. where the partner offers monetary support and project guidance. 		<p>Jagdeep Gambhir <i>CEO and Co-Founder</i></p> <p>Dr Beena Jain <i>Head-Clinical Systems and Lead Pediatrician</i></p> <p>Dr JP Saxena <i>Head- Clinical Operations</i></p> <p>Kajal Lath <i>CFO</i></p>
		Contact Details
		<p>Address: 670 - Sector 11, Hiran Magri, Udaipur, Rajasthan - 313001, India</p> <p>Phone: +91-7727866100</p> <p>Email: info@karmahealthcare.in</p>
Nature of engagement and collaboration with the government		
<ul style="list-style-type: none"> • Karma is in talks with one of the NGOs under Ayushman Bharat scheme to pilot it's model in select Health and Wellness Centres • Karma is a registered start-up under the Start-up India program of the Department for Promotion of Industry and Internal Trade. • It is a part of the SmartGram consortium, an initiative launched by the President of India in 2016 to convert 100 villages into Smart Villages. Karma's spokes in Haryana are in these selected 100 villages. 		
Social Impact		
<ul style="list-style-type: none"> • Karma has facilitated 85,000 unique consultations till date 		
Road Ahead		
<ul style="list-style-type: none"> • In the next 5 years, Karma aims to increase it's clinic strength to 100 across India with partnership led model including PPP. They also have plans to use data sets of patient consultations on their platform for performing high-level research and studies for clinical intervention. 		



Vaatsalya Healthcare  		
Solution Space	Operating since	Innovation Type
Secondary Healthcare	2005	Leveraging agility and technology to provide affordable healthcare
Business Model Overview		Team
<ul style="list-style-type: none"> Vaatsalya Healthcare runs a chain of 6 multi-specialty secondary care hospitals in tier 2 and tier 3 towns of Karnataka. It started as a mother and child hospital, however, owing to the demand and patient needs, expanded to include other specialties as well. Today it offers gynecology, pediatrics, physiotherapy, general surgery, and general medicine. Some of its centers also offer care surrounding orthopedics, urology and dialysis. Vaatsalya offers in-house diagnostic and pharmacy services. Diagnostic services are outsourced to be operated by a different organization. Vaatsalya has a doctor centric model where medical practitioners are carefully chosen based on their semi-urban or rural background and sufficiently incentivized so as to reward and retain them. Vaatsalya has a total capacity of 450 beds 		Diwakaraiah N J <i>Managing Director</i> Dr. Chandil Kumar <i>CEO</i>
		Contact Details
		Address: Vaatsalya Healthcare Solutions Pvt Ltd, Tapasviji Arcade, 2nd Floor, #186/2, 1 st Stage, BTM Layout, Hosur Road, Bangalore Phone: +91 9108051309 Email: ceo@vaatsalya.com
Nature of engagement and collaboration with the government		
<ul style="list-style-type: none"> Vaatsalya is an empaneled care provider under the Government's Ayushman Bharat program which enables it to treat patients who otherwise cannot afford private treatment. Vaatsalya participates in the various health inclusion programs in partnership with the government in the form health awareness programs, focused Health camps etc. 		
Social Impact		
<ul style="list-style-type: none"> Vaatsalya has touched more than half a million lives in underserved areas of the country Delivered more than 5000 babies safely It's NICU has served close to 4000 babies. The lowest weight baby which survived was less than 800 grams 		
Road Ahead		
<ul style="list-style-type: none"> Vaatsalya intends to expand from its current strength of 6 centers to beyond 20 in the next 2 years. It is also in the process of standardizing the services across the units in all geographies. 		



Cygnus Hospitals  		
Solution Space	Operating since	Innovation Type
Secondary Healthcare	2011	Leveraging agility and technology to provide specialized emergency care
Business Model Overview		Team
<ul style="list-style-type: none"> • Cygnus Hospitals operates a chain of 10 multi-specialty secondary and low tertiary care hospitals in tier 2 and tier 3 towns. • Cygnus aims to offer specialized surgeries in areas which lack facilities for super specialty care. • The hospitals are strategically located on highways where road accidents happen frequently. This equips them to provide emergency care to patients needing immediate treatment. • Services offered include cardiology, neurology, physiotherapy, obstetrics, gastroenterology, nephrology, dental care, pediatrics etc. • The hospitals provide in-house diagnostic and pharmacy facilities, which helps them provide integrated services to their patients. • Cygnus offers competitive salaries along with other incentives to doctors which helps in their retention and also enables them to offer specialized services to their patients. 		<p>Dr. Shuchin Bajaj Promoter and Founder</p> <p>Dr. Dinesh Batra Director & Group CEO</p> <p>Dr. Naveen Nishchal Director- Operations</p>
		Contact Details
		<p>Address: Cygnus Hospitals, Ground floor, Enkay Center, Udyog Vihar, Phase 5, Gurgaon</p> <p>Phone: +91 9911449599</p> <p>Email: bajaj.S@cygnushospitals.com</p>
Nature of engagement and collaboration with the government		
<ul style="list-style-type: none"> • Cygnus is an empaneled care provider under government’s Ayushman Bharat program 		
Social Impact		
<ul style="list-style-type: none"> • Cygnus conducts over 200 angioplasties every month • Benefitted over 10,000,000 people till date • Cygnus has a capacity of treating over 87,000 patients per annum 		



Sudiksha Knowledge Solutions 		
Solution Space	Operating since	Innovation Type
<i>Pre-Primary Education</i>	2012	<i>Leveraging agility to run affordable pre-schools</i>
Business Model Overview		Team
<ul style="list-style-type: none"> Sudiksha runs 8 affordable pre-schools in districts of Andhra Pradesh, Telangana and Madhya Pradesh for the children living at the bottom of pyramid. The schools are mostly 2 bedroom houses that they take on rent. Each school is staffed with 3 teachers and 2 helpers with an average student strength of 70. Subjects taught are English, mathematics and general awareness. Hindi and Telugu languages have also been added in the curriculum recently. Sudiksha identifies local women from the community, trains them in areas of academics and school management and recruits them in their schools to teach and manage operations. They are also incentivized for mobilizing students to attend school. When it comes to affordability, Sudiksha positions itself as being between government run anganwadi's and private schools. However in terms of academics, their teaching quality is at par with other private enterprises and focus on scientific and holistic development of the student. 		Naveen Kumar <i>CEO</i> Sravanthi Settipalli <i>Management</i> Bhanu Prasad <i>Management</i>
		Contact Details Address: Sudiksha Knowledge Solutions Pvt. Ltd., # 2-2-1130/19/5/C/A , 1st Floor, Above Karur Vysya Bank, Shivam Road, Nallakunta, Hyderabad Phone: +91 9848790444 Email: naveen.kumar@sudiksha.in
Nature of engagement and collaboration with the government		
<ul style="list-style-type: none"> Sudiksha has been engaging with the governments of Telangana and Andhra Pradesh to provide quality education in government schools. 		
Social Impact		
<ul style="list-style-type: none"> Taught over 9,900 students Trained over 850 women 		
Road Ahead		
<ul style="list-style-type: none"> Plans to set up 10 new centres as model centres in the future Sudiksha also plans to support government pre-schools in the future by offering curriculum and teacher training modules 		

Bodhi School			
Solution Space	Operating since	Innovation Type	
<i>Primary Education</i>	<i>2009</i>	<i>Leveraging agility to run affordable pre-schools</i>	
Business Model Overview		Team	
<ul style="list-style-type: none"> • Bodhi runs a school in rural Telangana to provide quality primary and secondary education to children from impoverished backgrounds. The school focuses on contextualizing curriculum with relevant education to make learning practical where passing theoretical exams is not the sole criteria of success. • The school integrates extracurricular activities with academics to ensure holistic development of the child. • Teachers are hired from the local community. After completion of training, they are free to teach the way they want to. Their methods of teaching is however monitored/mentored and assessed regularly. • Admission fees are approximately 40% lower than what is charged by nearby schools, starting at INR 6,500 per annum. • The school does not refuse admission to any child and also offers scholarships to underprivileged. 		<p>Vikram Akula <i>Chairperson</i></p> <p>Sivani Shankar <i>Executive Member</i></p> <p>K Ratnakar <i>Principal</i></p> <p>Phani Krishna <i>School Leader</i></p>	
		Contact Details	
		<p>Address: Bodhi Educational Society Office, SLN Terminus, #4-51/SLNT/L4-05, Gachibowli, Kondapur Road, Hyderabad</p> <p>Phone: +91 9652477707/9676683758</p> <p>Email: sivani@vayaindia.com</p>	
Nature of engagement and collaboration with the government/other educational organizations			
<ul style="list-style-type: none"> • Participated in various programs such as Teach For India, Tisch Summer Fellowship, Learning Curve etc. 			
Social Impact			
<ul style="list-style-type: none"> • Bodhi has taught over 11,000 students till date • It has trained over 430 local women to become school teachers till date 			
Road Ahead			
<ul style="list-style-type: none"> • At present, the school offers classes till class 7. Bodhi School is now in the process of getting licenses to upgrade the school to offer classes till class 10. • Infrastructural developments are in progress to run fully functional labs for computers and sciences 			

EduBridge			
Solution Space	Operating since	Innovation Type	
<i>Technical and Vocational Education and Training</i>	2009	<i>Leveraging agility to train and employ unemployed youth in 400 different courses</i>	
Business Model Overview		Team	
<ul style="list-style-type: none"> EduBridge provides training and education to the rural youth and connects them with job opportunities across various industries. It does this by following 3 different models: <ul style="list-style-type: none"> It started operations by working with the government as a training partner for various skilling schemes. Currently this vertical contributes only 5% to its revenue. It has partnered with 2 NGOs to implement CSR projects of over 30 corporates. CSR implementation contributes over 80% of its revenue. It has recently started focusing on workforce development by partnering with corporates to recruit and train people for various entry level jobs requiring soft white skills. Currently, this vertical contributes a little over 10% to its revenue but going forward Edubridge wants this to be its primary business model. Edubridge offers 400 courses, of which 280 are around banking and financial services. These courses are administered in over 70 centres spread across the country. 		<p>Girish Singhania <i>CEO and Founder</i></p> <p>Utsav Kheria <i>Head - Operations</i></p> <p>Amit Sathaye <i>Head - Training</i></p>	
		Contact Details	
		<p>Address: 5/39, Shree Om Cooperative Housing Society, Guru Narayan Rd, Madhuvan Society, Anand Nagar, 5/39, Santacruz East, Mumbai</p> <p>Phone: +91 9833924911</p> <p>Email: girish@edubridgeindia.com</p>	
Nature of engagement and collaboration with the government			
<ul style="list-style-type: none"> Edubridge started operations by working as a training partner for various government schemes Edubridge has worked on over 20 different government projects till date 			
Social Impact			
<ul style="list-style-type: none"> Trained over 100,000 youth since inception Placed over 68% of all candidates enrolled Partnered with over 250 industry corporations 			
Road Ahead			
<ul style="list-style-type: none"> Edubridge wants to increase its focus on hiring and training for corporates and decrease its reliance on the CSR business 			

Pipal Tree Ventures			
Solution Space	Operating since	Innovation Type	
<i>Technical and Vocational Education and Training</i>	2007	<i>Leveraging agility to train and employ unemployed youth in construction, retail and farming activities</i>	
Business Model Overview		Team	
<ul style="list-style-type: none"> Pipal Tree trains under privileged youth to equip them with employable skills and make them competent to work in market driven industries such as painting, tiling, masonry, plumbing as well as in sustainable agri-allied businesses. It started as a training provider but later expanded to playing the role of a construction contractor working for various building construction companies. Currently, it trains workers and employs them in these projects and recovers the training fee in instalments once the workers start working. It's clients include Tata Housing Development Company Limited, Godrej, Shapoorji Pallonji, Simplex, Lodha Group etc. Other projects include empowering women to take up goat farming by providing them loans of goats and hands on training on maintaining and earning livelihoods through the activity, implementing various government schemes surrounding affordable housing, production of silk etc. 		<p>Santosh Parulekar <i>CEO and Founder</i></p> <p>Tina Dabhi <i>Head, Finance</i></p> <p>Subhash Pandey <i>Head, Operations</i></p>	
		Contact Details	
		<p>Address: 701/702/703, 7th Floor, Corporate Annexe, Goregaon East, Mumbai</p> <p>Phone: +91 9821345238</p> <p>Email: sparulekar@pipaltreeventures.com</p>	
Nature of engagement and collaboration with the government			
<ul style="list-style-type: none"> Pipal Tree is the implementing partner of the Pradhan Mantri Awas Yojana (Gramin) scheme in which affordable housing is to be provided for the rural poor. As a part of the scheme, it is training the beneficiaries to construct their houses in Jharkhand, Maharashtra, Uttar Pradesh, Andhra Pradesh and Bihar. 			
Social Impact			
<ul style="list-style-type: none"> It has trained over 50,000 people since its inception and placed over 40,000 Average salary offered to its' candidates after training is INR 10,000 per month 			

Sweep Smart			
Solution Space	Operating since	Innovation Type	
Waste Management	2016	Leveraging technology to automate waste processing	
Business Model Overview		Team	
<ul style="list-style-type: none"> Sweep Smart offers waste management solutions based on European waste management knowledge tailored to the needs of India and other emerging countries It provides consulting to municipalities and corporates on waste management processes and designing of waste collection infrastructure. It also includes informal recycling workers and entrepreneurs. It offers 2 models to its clients: Design, Build, Operate (DBO) or Design, Build, Implement, Transfer (DBIT). It can operate the system long-term or transfer operations to a local organization, in which case it can offer regular auditing and monitoring of the system Its centres use equipment, like conveyor belts to push out different categories of waste to a number of waste workers sitting around it, who then pick out specific categories of waste, as well as IT solutions, like a KPI dashboard monitoring waste flows, recycling and productivity, and processes, like Standard Operating Procedures and training manuals They have partnered with organizations such as PWC, Hasiru Dala Trust, I Got Garbage, Systemiq etc. 		<p>Silvia de Vaan Founder & CEO</p> <p>Niels van den Hoek Founder & COO</p> <p>Rob Tholenaars Country Director, India</p> <p>Rohith Kumar Project Manager</p>	
		Contact Details	
		<p>Address: S-512, 5th Floor Manipal Centre, Dickenson Road, Bangalore, Karnataka</p> <p>Phone: +91 9206 8919 87</p> <p>Email: rob@sweepsmart.org</p>	
Nature of engagement and collaboration with the government			
<ul style="list-style-type: none"> Bangalore Municipality (BBMP): upgrade of 1 pilot Dry Waste Collection Centre (DWCC) from BBMP, (independently running since early 2017) and start of project to upgrade 10 more DWCCs in June 2019; Electronics City Industrial Township Authority: upgrade of their (dry, wet and reject) waste facility (independently running since early 2017) and a project "E-City Segregates" to improve the segregation quality in 2017 			
Social Impact			
<ul style="list-style-type: none"> Total number of waste workers/waste pickers impacted: approximately 60 currently working at the 3 pilot facilities, at least 30 more trained (employee changes) in India, approximately 20 in Indonesia Total waste treated: approximately 4000-5000 tonnes 			
Road Ahead			
<ul style="list-style-type: none"> Sweep Smart has started a project to upgrade 10 centres for BBMP and support UNDP in setting up the first 2 out of 50 plastic recycling centres they are planning to build across India (funded by Hindustan Coca Cola Beverages) It is also planning to rapidly replicate the approach and scale up sales across India and Indonesia, initial discussions in other (South East Asian) countries. 			

Nepra Resource Management		 NEPRA	
Solution Space	Operating since	Innovation Type	
<i>Waste Management</i>	<i>2011</i>	<i>Leveraging technology and agility to integrate waste management processes</i>	
Business Model Overview		Team	
<ul style="list-style-type: none"> • Nepra Resource Management operates under the ‘Let’s Recycle’ brand and has built a supply chain that connects dry-waste generators and collectors to recyclers, integrating about 1,800 waste-pickers into the formal economy. • It has a capacity of processing 80 tonnes of waste per day. • It has a 4-storied, dry waste processing unit, spread over 1.2 acres where waste is sorted, scanned using technology and separated before sending to different recyclers. • It has developed an Enterprise Resource Planning (ERP) system to track and monitor its activities. It also leverages technology to monitor the location of collection agents, waste collectors and scheduled pickup calls in real time. • It has tied up with over 110 corporates in Ahmedabad including Amul, Reliance, Vodafone, Tata Motors, Le Meridien Hotels, Crowne Plaza Hotels etc. 		<p>Sandeep Patel CEO</p> <p>Ravi Patel Co-founder & Head of Sales and Marketing</p> <p>Dhruvin Patel Co-founder</p>	
		Contact Details	
		<p>Address: 206, Kalasagar Mall, Opp. Saibaba Temple, Sattadhar Cross Road, Ghatlodia, Ahmedabad, Gujarat</p> <p>Phone: +91 9924143113</p> <p>Email: s.patel@nepra.co.in</p>	
Nature of engagement and collaboration with the government			
<ul style="list-style-type: none"> • Land and the right to collect is granted to Nepra by the government. In addition to this, Nepra does not work with the government. 			
Social Impact			
<ul style="list-style-type: none"> • Nepra has impacted the lives of over 5,000 people from bottom of the pyramid • There are over 30,000 waste pickers in Ahmedabad. Nepra works with over 5% of them • 65% of Nepra's waste pickers are women • Nepra avoids 63 TPD (tonnes per day) of waste from being dumped in Landfill 			
Road Ahead			
<ul style="list-style-type: none"> • Nepra plans to expand it’s business footprint in other cities accompanied by increasing it’s portfolio of offerings and becoming a one stop shop for all waste management solutions • It plans to divert 30,000 MT (Million Tonnes) of waste from the landfill by 2020 			

ANNEXURE 2: GLOSSARY

Alternative school	Educational establishment with non-traditional curriculum and methods of imparting education. In India such schools emphasize on the development of the pupil in various aspects of life as well as ensure social service.
Anganwadi	Started in 1975, they are a type of rural child care centre in India offering basic education, healthcare and nutrition services.
Auxiliary Nurse Midwife	Female health workers who are the first point of contact between the community and health services.
Ayushman Bharat	A national initiative launched to achieve the vision of Universal Health Coverage. It comprises of 2 components- (i) Establishment of Health and Wellness Centres and (ii) Providing health protection coverage to the poor against financial risk by offering a benefit cover of INR 500,000 per family per year.
Clinical Decision Support System	Health information technology system designed to support doctors with clinical decision making tasks. The main purpose of CDSS is to assist at the point of care. Doctors and physicians interact with the software which helps to analyse and reach a diagnosis based on patient data.
Curative care	Measures taken to relieve symptoms and reduce severity of an illness or injury as well as to protect against any health complication.
Diagnostic services	These services include provision of clinical pathology and laboratory medicine as well as radiology services. Some examples of diagnostic services include blood tests, haematology, urine tests etc.
Learning Management System	Software application for administration, documentation, tracking, reporting and delivery of educational courses, training and development programs.
Mid-day Meal Scheme	School meal programme of the Government to improve the nutrition status of school-age children throughout the country. The programme supplies free lunches on working days for children in primary and upper primary classes in government and government aided schools.
Mobile Medical Units	Refers to mobile clinics to provide a range of health care services for populations living in remote, inaccessible and underserved areas with the objective of taking healthcare delivery to the doorstep of these people.

National Health Mission	Launched by the Government in the year 2013, the mission seeks to address the health needs of the underserved rural areas. It aims to establish a function, community owned, decentralised health delivery system at all levels to ensure action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality. It consists of all major healthcare initiatives taken by the Government such as ASHA workers, national mobile medical units, national ambulance service, free drugs and other schemes aimed at strengthening healthcare delivery.
National Rural Livelihood Mission	Poverty alleviation programme implemented by the Government that promotes self-employment and organization of rural poor through information, knowledge, skills, tools, finance and collectivization.
Neonatal intensive care unit	Intensive care unit specializing in the care of ill or premature newborn infants.
Pay-as-you-go	A system in which one pays for a service before using it for a certain time period.
Point of care devices	Devices which enable immediate diagnostic and medical testing at the time and place of patient care
Pre-primary education	Refers to education offered in early childhood to children before they begin compulsory education at primary school. Children in these classes are generally aged between 2 and 6 years.
Preventive care	Measures taken to prevent diseases rather than treating them including regular health screening, check-ups, counselling and maintenance.
Primary education	Refers to education from class 1 to class 8. Children in these classes are generally aged between 6 and 13 years. Also referred to as elementary education, it is the next stage after kindergarten or pre-primary education.
Primary processing (agriculture)	Process of conversion of raw agriculture products into basic food commodities. This includes drying, threshing, winnowing, milling, shelling etc.
Secondary education	It comprises two years of lower secondary and higher secondary education. It covers children aged between 14 and 18 years.
Secondary processing (agriculture)	Process of conversion of ingredients into edible products.

Self Employed Women's Association	A trade union started in 1972 consisting of poor, self-employed women workers.
Social enterprise	Predominantly for-profit private sector small businesses that engage with the low income population to address the challenges of critical needs sectors such as health, education, agriculture, sanitation, energy etc.
Solution space	For the purpose of the study, the key sectors of health, education, agriculture, sanitation, water and energy were divided into their constituents on the basis of the nature of the offering and their engagement with the customer.
Sustainable Development Goals	Set of 17 global goals defined by the United Nations General Assembly to be achieved by the year 2030 surrounding areas such as poverty, health, education, inequality, economic growth, environment and climate change.
Swachh Bharat Abhiyan	National level campaign to clean India for the period 2013 - 2019. The campaign translates to "Mission Clean India" in English and aims to eliminate open defecation through construction of household-owned and community-owned toilets and establishing a mechanism of monitoring toilet use. It also aims to clean up the streets, roads and infrastructure of India's cities, towns, and rural areas.
Telemedicine	Remote delivery of healthcare services through electronic information and telecommunication technologies. It facilitates long distance patient-doctor interaction, consultation and monitoring.