Impact Measurement Case Study

MEDTRONIC – *SHRUTI* PROGRAMME

श्रुति
स्वस्थ कान

LOCATION: India

Target Beneficiaries: Low-income urban and rural populations

Sector: Health

Business model: Medtronic is a global healthcare solutions company committed to improving people's lives through medical technology, services and solutions. In India, Medtronic is implementing the *Shruti* programme to address the ear-care needs of underserved populations. It has developed a portable ear-screening kit to detect hearing impairments, a community outreach programme and a treatment protocol with partnering health service providers.

THE OBJECTIVE

Shruti aims to provide quality otology care to underserved populations and address barriers of access and awareness by leveraging technology and bringing care into patient communities. The programme collects social impact data to assess needs and demand, and market roll-out strategies for its otology care solutions in underserved – but densely populated – low-income communities.

HOW IT WORKS

1 ASSESSING READINESS

While Medtronic is a mature, global conglomerate, its *Shruti* programme is at the 'progressive' stage, with advanced readiness for impact measurement. Potential and existing patients were surveyed to inform the development of new products and services, and to strategize a scale-up plan specifically for underserved populations.

The analysis indicated that:

55% of screened people live below USD 4 per day in terms of 2011 purchasing power parity of India;

28% of patients who received treatment reported that they did not know who or where to go for treatment, and

24% did not think treatment was urgent before being approached by Medtronic;

87% of patients reported that their ear conditions had improved and **85%** reported improved daily lives post-treatment.

4 ANALYSING DATA AND REPORTING

2 PLANNING AND DESIGN

3 MONITORING IMPACT

Key social-impact metrics measured through the surveys included:

1 people's awareness of hearing impairments and ear care;

2 the prevalence and age-distribution of disease

3 patients' income levels; and

4 patients' post-treatment rehabilitation and satisfaction levels.

The *Shruti* team collected data during pre-screening surveys from individuals with ear problems and during post-treatment follow-up visits with patients. The data were sampled from two locations based on the capacity of local implementing partners.

RESULTS

Medtronic is using the impact data on *Shruti* to: (i) assess and improve screening and treatment protocols; (ii) measure improvements in the lives of its patients; and (iii) forge better partnerships with health service providers.

About Medtronic

Founded in 1949 in Minneapolis, Minnesota in the United States, Medtronic currently operates in 155 countries with a workforce of more than 85,000 employees. It runs business groups on: (i) cardiac and vascular health; (ii) minimally invasive therapies; (iii) restorative therapies; and (iv) diabetes solutions and services. Its core mission is to contribute to human welfare by developing and applying biomedical instruments and services to alleviate pain, restore health and extend life. Medtronic began operations in India in 1979, where it currently runs two research and development centers, and has more than 1,100 employees. One of its core inclusive business[1] strategies is to engage with experts and business managers to identify and assist underserved communities that have limited access to affordable high-quality healthcare.

The company aims to expand its market in India to reach middle- and low-income communities with affordable products and services. According to the World Health Organization (WHO), the prevalence of auditory impairment in India was 6.3 percent in 2005.[2] With a large portfolio of ear, nose and throat (ENT) products and instruments, Medtronic started *Shruti* in 2013 to understand and address ear-related problems in low-income populations across India.

The programme trains and equips community health workers with an ear screening kit called ENTraview to gather patient details, symptoms and other information, including an image of the tympanic membrane – with a built-in algorithm for field triaging of ear diseases. Patients with ear problems are given counseling regarding further treatment at in-network hospitals, including medical management, minor procedures, surgical intervention and rehabilitation. Medtronic ENT products and instruments are used throughout the entire process from screening to treatment and rehabilitation. Currently, the *Shruti* care network includes charitable hospitals, government tertiary care centers and private ENT surgeons.

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1   Inclusive businesses are commercially viable business ventures that engage people living at the base of the economic pyramid – people with less than USD 10 per day in 2015 purchasing power parity – as consumers, producers, suppliers, distributors of goods and services, and employees.

2   http://dghs.gov.in/content/1362_3_NationalProgramPreventionControl.aspx

Step 1: Assessing readiness

Effective impact measurement[3] begins with **determining the reason for measuring impact**. A wide variety of tools are available for businesses to measure, manage and report on their social and environmental impact. Approaches range from those generating quick feedback to those requiring a longer timeframe to prove systemic impact. BCtA believes it is important for companies to choose the right approach that meets their business needs given the available resources.

Assessing the company's readiness for impact measurement is a critical first step in determining what impact data to collect, how to collect them and how to use them for business development and social and environmental performance. In assessing a company's readiness to measure its impact, BCtA considers its maturity stage and capacity, which is determined based on the company's clarity of purpose, data-driven culture and resources available for data monitoring and collection.

Medtronic is the global leader in medical technology. Its management believes that its value as a company and its business performance are connected to achieving positive social impact. Every year, as part of its *Integrated Performance Report,*[4] Medtronic measures and publishes data on business as well as social impact parameters, including investments in research and development, medical professionals trained, Human Rights Index scores and lives impacted.

The *Shruti* programme has been active in India since 2013. During initial years the company focused on research and collecting market and patient data across various parameters. The programme has a strong technology and analytics team that uses portable otology devices and smart phones to collect data from communities, clinics and partner hospitals. In early 2017, *Shruti* graduated from pilot project to full-fledged business unit. It is now **at the progressive stage** and has **advanced readiness for measuring impact** (see below figure) since it regularly monitors and measures performance parameters and social outcomes.

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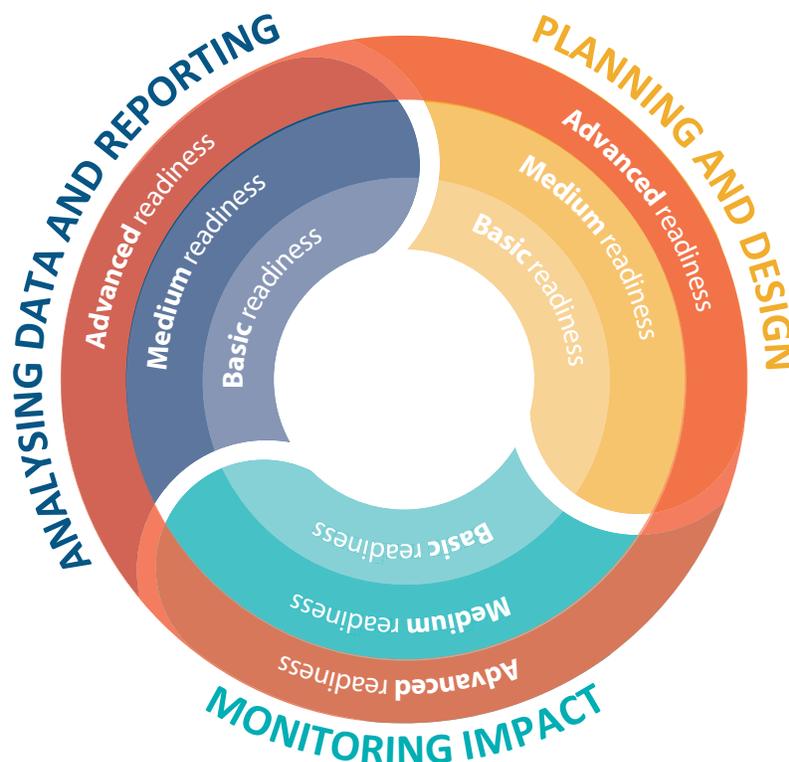
3   In this case study, 'impact measurement' refers broadly to the measurement of social, economic and environmental performance of inclusive businesses.

4   http://www.medtronic.com/content/dam/medtronic-com/us-en/corporate/documents/17267.MED.Sustainability.Report_4_FINAL%20NOV%208.pdf
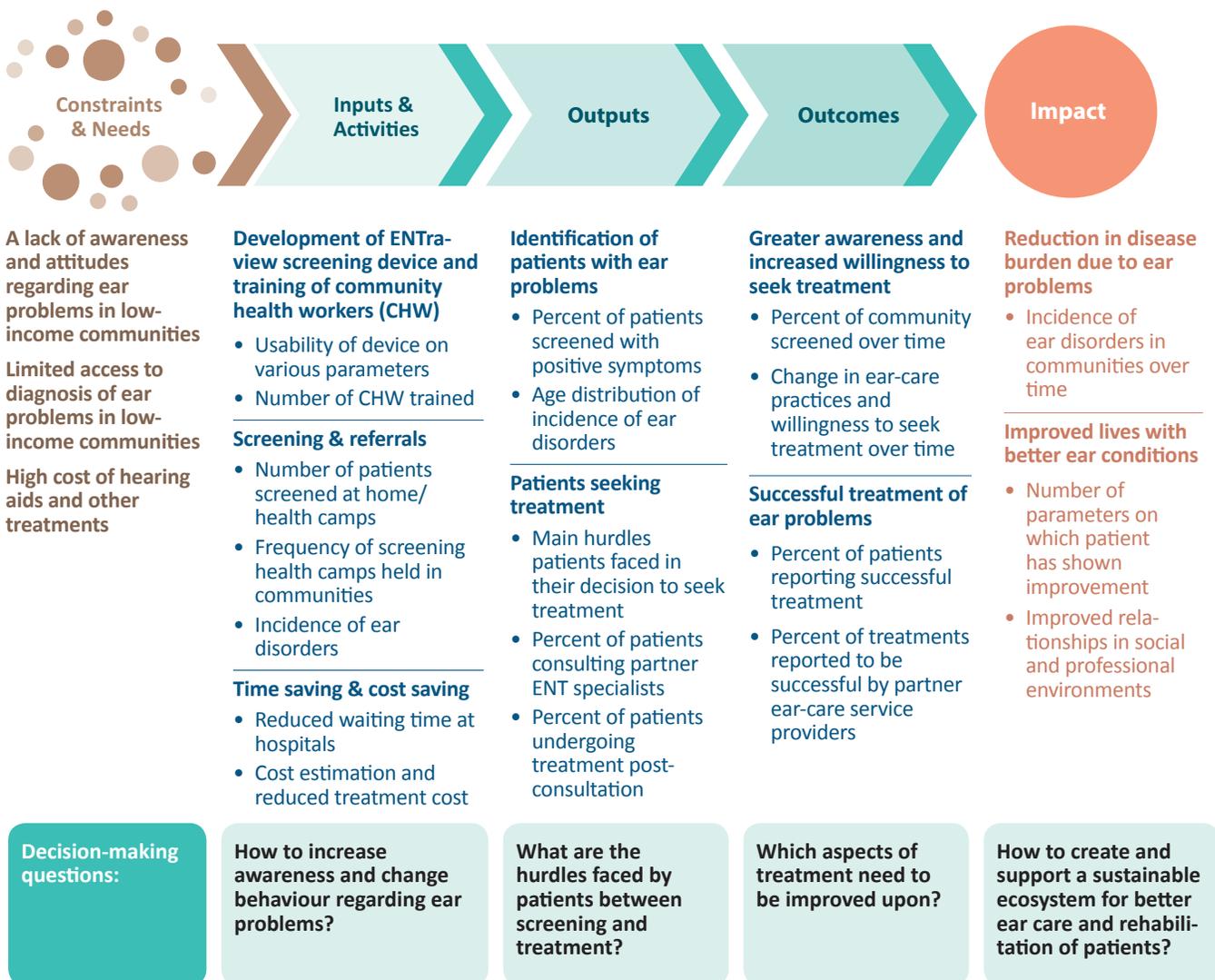
Step 2: Planning & design

The planning step involves developing an Impact Value Chain[5] that links business goals, strategies and operations to outcomes and impact related to the Sustainable Development Goals (SDGs).[6] The Impact Value Chain is the basis for developing impact metrics and indicators that address the needs identified in the previous step.

The Impact Value Chain guides companies in determining what to measure and where to collect data by mapping business goals, strategies and operations against outcomes related to the SDGs. As a BIMS participant, the *Shruti* programme had

a clear mandate: develop and assess the go-to-market plan for Medtronic's ENT products in low-income communities. This required: understanding needs and constraints related to ear problems in these communities; monitoring business activities; and assessing the outcomes and impacts of the treatment provided by partner health organizations using Medtronic solutions.

An abridged version of the Medtronic's Impact Value Chain in India, with a limited number of social impact metrics, is presented here:

Medtronic's Impact Value Chain

Constraints & Needs	Inputs & Activities	Outputs	Outcomes	Impact
A lack of awareness and attitudes regarding ear problems in low-income communities Limited access to diagnosis of ear problems in low-income communities High cost of hearing aids and other treatments	**Development of ENTra-view screening device and training of community health workers (CHW)** • Usability of device on various parameters • Number of CHW trained **Screening & referrals** • Number of patients screened at home/health camps • Frequency of screening health camps held in communities • Incidence of ear disorders **Time saving & cost saving** • Reduced waiting time at hospitals • Cost estimation and reduced treatment cost	**Identification of patients with ear problems** • Percent of patients screened with positive symptoms • Age distribution of incidence of ear disorders **Patients seeking treatment** • Main hurdles patients faced in their decision to seek treatment • Percent of patients consulting partner ENT specialists • Percent of patients undergoing treatment post-consultation	**Greater awareness and increased willingness to seek treatment** • Percent of community screened over time • Change in ear-care practices and willingness to seek treatment over time **Successful treatment of ear problems** • Percent of patients reporting successful treatment • Percent of treatments reported to be successful by partner ear-care service providers	**Reduction in disease burden due to ear problems** • Incidence of ear disorders in communities over time **Improved lives with better ear conditions** • Number of parameters on which patient has shown improvement • Improved relationships in social and professional environments
Decision-making questions:	**How to increase awareness and change behaviour regarding ear problems?**	**What are the hurdles faced by patients between screening and treatment?**	**Which aspects of treatment need to be improved upon?**	**How to create and support a sustainable ecosystem for better ear care and rehabilitation of patients?**

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5   The Impact Value Chain integrates multiple approaches such as the theory of change, results chain, logframe and business value chains.

6   Adopted in September 2015 by all United Nations member states, the SDGs are a set of 17 global goals and 169 targets related to key development issues facing society today. Countries will aim to achieve them by 2030.

Step 3: Monitoring impact

To monitor impact, BIMS recommends that companies collect data on their operations as well as social and environmental performance on an ongoing basis. Businesses can assess data from primary and secondary sources such as invoices, inventories, customer registrations, market-research reports, social media, surveys and polls.

Identifying sources of data is critical for developing data-collection plans using the Impact Value Chain. Many companies already have data that can be used for impact measurement. BIMS suggests that companies first determine if they can analyse the data they already have. Only if this is not possible should they plan on collecting new data.

As a progressive programme with a strong monitoring and research component, *Shruti's* team regularly collects operational and health data using ENTraview and interview forms during home visits and screening 'health camps'. These data include patient demographics, complaints and symptoms, images of patients' ear canals and tympanic membranes, and information about their ear-care practices. The *Shruti* team also follows up by telephone with patients found to have hearing impairments or any infection or disease, urging them to seek treatment and tracking their progress. In addition, Medtronic created two new surveys on the BIMS platform: (i) an add-on to the ENTraview screening survey designed to increase its understanding of patients' socio-economic conditions and their knowledge, attitudes and practices regarding ear care; and (ii) a post-treatment survey to obtain the patients' feedback on the treatment they received and understand the impacts of this treatment on the financial and personal aspects of their lives, such as difficulties faced in financing their treatment, their ability to work and challenges with social interaction.

Survey implementation

DIn 2016, *Shruti* was operating in five states of India with trained community health workers through partnerships with ear-care institutions. For both of the screening and post-treatment surveys, three partner sites in two locations were selected based on the ease of oversight in those locations.

- **Screening survey** (door-to-door): A randomized sampling strategy was not possible for the screening survey because the field work had to be dove-tailed into the pre-scheduled routes assigned to the community health workers. In addition, data was to be collected only by consent given the sensitivity of health data. However, to ensure an adequate sample size at the time of analysis, a target of 350 surveys was set per location. At the time of writing of this case study 751 individuals who had been screened were surveyed by the field team in both locations.

- **Post-treatment survey** (usually 3 months after patient had been treated from the hospital): For the post-treatment surveys, efforts were made to ensure that an equal number of surgery and hearing-aid cases were covered. Similar to the screening survey, this survey was not randomized, but was carried out as part of the work-flow and work load of the health-services staff at the partner institutions. At the time of writing this case-study, 347 post-treatment surveys covering both types of treatments had been completed.

Step 4: Analysing data and reporting

While the purpose and usability of social-impact data may vary for each inclusive businesses, in general the results of impact measurement can be used to answer one or more of the following questions::

1. Who is being impacted?
2. How are they being impacted?
3. What are the drivers contributing to or limiting this impact?
4. How can this impact be scaled up and linked to the SDGs?

Who is being impacted?

Right from the outset, the objective of *Shruti* was to provide affordable ear-care treatments to low-income communities. During the pilot phase, the programme identified poor urban neighborhoods with high population density and significant incidence of ear disorders that could be addressed cost-effectively through economies of scale. Rural areas with low access to quality screening facilities were also identified. The BIMS patient screening survey used the Progress out of Poverty Index to measure respondents' incomes. The results showed that 55 percent of people screened in urban communities where *Shruti* was being piloted live below USD 4 per day in 2011 purchasing power parity of India. The data also showed that 50 percent of those screened reported having hearing problems since childhood – a number far greater than expected based on national statistics.[7]

How are they being impacted?

Data from the patient screening survey showed that 11 percent of those who tested positive for ear ailments reported not having any symptoms, and 31 percent of those with ailments had ignored their condition and not taken any action. Nearly 80 percent of them either "did not think it was critical" or cited a "lack of time" as the main reason for inaction. By training community health workers to go door to door and hold health camps to screen for ear disorders, the programme sought to address the lack of awareness and apathy towards ear problems.

What are the drivers contributing to or limiting this impact?

The post-treatment survey data collected through BIMS validated one of the initial assumptions about the *Shruti* programme: a lack of awareness and indifferent attitudes regarding ear problems are the main hurdles preventing people from seeking treatment. Even in low-income communities, only 20 percent reported that the financial burden of treatment was a hurdle to seeking treatment, compared to 24 percent who reported that they did not think it was urgent and 28 percent who did not know who to talk to or where to go before being approached by Medtronic. Nearly 41 percent of screened respondents mentioned that they did not have enough time to get an ear check-up. Therefore, a programme like *Shruti*, which takes ear screening directly to the doorsteps of community members, is clearly addressing the challenges low-income communities face in reducing the burden of ear problems.

How can this impact be scaled up and linked to the SDGs?

BIMS seeks to support inclusive businesses in adopting impact measurement practices that help them to plan, monitor and deliver on their intended social and environmental impact – and contribute to achieving the SDGs.

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7   The prevalence of auditory impairment was 6.3 percent among the Indian population in 2005 (http://dghs.gov.in/content/1362_3_NationalProgramPreventionControl.aspx).

Using the Impact Value Chain, Medtronic identified the following SDGs that are in line with its intended impact:
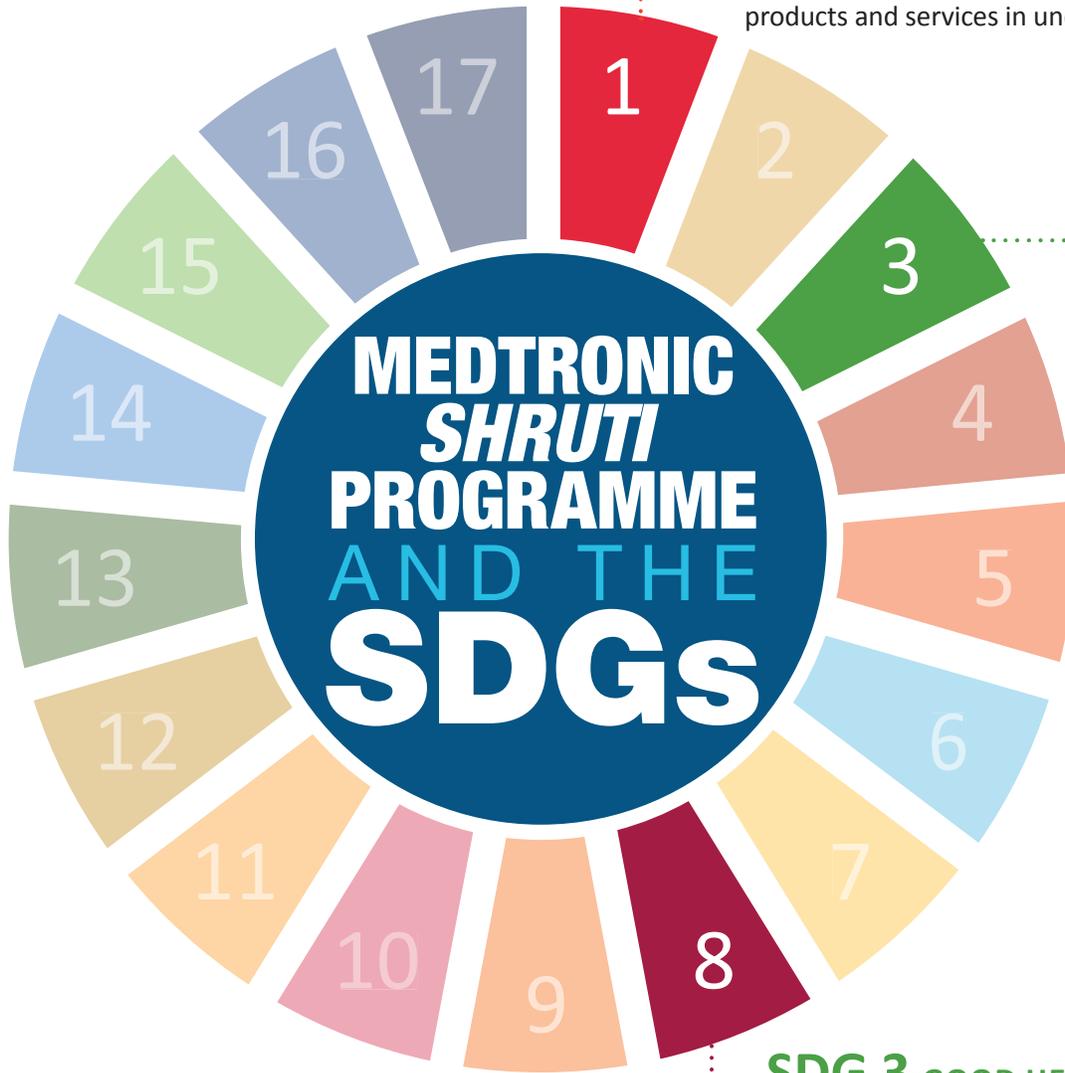
SDG 1 NO POVERTY

Of those screened for ear problems, 55 percent live below USD 4 per day in 2011 purchasing power parity. One of the *Shruti* programme's main objectives is to provide affordable healthcare products and services in underserved communities.

MEDTRONIC *SHRUTI* PROGRAMME AND THE SDGs

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

SDG 8 DECENT WORK AND ECONOMIC GROWTH

Shruti has successfully piloted a model for employing local community health workers to deliver critical health services in low-income communities

SDG 3 GOOD HEALTH AND WELL-BEING

Through an innovative and affordable screening model, and partnerships with local healthcare providers, Medtronic improves awareness and access to treatment for people with ear problems in underserved communities. The post-treatment survey results showed improvements in the livelihoods of low-income patients. For example, nearly 35 percent saw an improvement in performance at work or school, and 58 percent reported better social interaction and communications, leading to better rehabilitation.

Lessons learned from impact measurement of the *Shruti* programme

Social impact measurements between the pilot and progressive stages can enable inclusive businesses to understand markets needs and constraints, and inform scale-up strategies.

Shruti was launched to deliver ear-care products and services in underserved populations in India. The impact measurement data collected at an early stage created a baseline for identifying the perceptions, attitudes, financial constraints and other hurdles underserved populations face in understanding their ailments and receiving treatment. The data also identified key operational and strategic approaches that can ensure patients follow through with their treatment while building economies of scale.

For technology-enabled organizations, social impact measurement can be easily integrated into their operations.

The *Shruti* programme was designed in tandem with ENTraview, an android-based otoscope used for collecting and tracking screening data, and the team consistently used field-level data for operational decision making. The BIMS surveys were easy to deploy on mobile phones since the team was already used to real-time data collection and analysis.

Close monitoring of data collection ensures early detection of problems for quick corrective actions

Medtronic conducted two surveys using the BIMS mobile data-collection platform. After completing the first round of data collection, the team found that some questions were missing because of a technical discrepancy. Despite good communication and regular monitoring, this error resulted in an incomplete data set. In order to re-collect the missing data, the survey was fine-tuned and an improved version was created. Even when challenges materialize, it is important to monitor roll-out systematically as well as to accept errors and continue with data collection in order to improve the quality of analysis.

Business Call to Action (BCtA) aims to accelerate progress towards the Sustainable Development Goals (SDGs) by challenging companies to develop inclusive business models that engage people at the base of the economic pyramid – people with less than USD10 per day in purchasing power parity (2015) – as consumers, producers, suppliers, distributors of goods and services, and their employees.