

India

**Preparatory Survey on BOP business on
Hearing Care Business
for People Living with Hearing loss in
Rural Areas
Final Report (Summary)**

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(JICA)**

Rion Co., Ltd

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Executive Summary

This study conducted to research into the possibility of establishing a sustainable business model of increasing access to hearing aid to those who suffer from difficulty in hearing in the Indian BOP market from June 2014 to August 2016. This study involved collaborative efforts between Rion (Rion Co., Ltd.), a Japanese company which has its strength in audiometers technology and which operates in the medical equipment business such as audiological equipment from manufacturing, sales, and maintenance, and their local counterpart, Drishtee (Drishtee Development & Communication Limited), which has a rural distribution network in India.

This project was conducted to prove the feasibility of selling hearing aids and creating audiological diagnostic network to solve issues surrounding hearing-impaired people in the BOP layer.

In the study, we conducted verification of business potential according to the following initial hypothesis; together with our local counterpart in India, Drishtee, we will construct a franchise for hearing diagnostics; the service quality and business process will be developed and controlled by both parties; and manufacture of hearing aids and examination equipment, export, and quality control will be handled by Rion. Although issues still remain around the estimated sales numbers for hearing aids, we were able to get excellent results to verify the hypothesis in terms of understanding the market and needs.

The verification points of this study consist of three mutually interconnected points, through which we aim to construct a sustainable business model that can break the vicious cycle surrounding the hearing environment.

- (a) Development of distribution network (possibility of solving the accessibility problem)
- (b) Possibility of selling audiometers (possibility of solving the awareness problem)
- (c) Possibility of selling hearing aids (possibility of solving the affordability problem)

As a result, gaining the cooperation of our local counterpart Drishtee, we were able to perform screening on 1433 people in Sultanpur and Sitapur, with a population of about 7,500,000 people and 165,000 hearing-impaired people; diagnostics were given to 31 people out of 287 who were determined to need further testing. As a result, 18 people were determined to need hearing aids, and 10 behind-the-ear and 9 body-worn hearing aids were sold. Therefore, we were able to confirm the latent purchasing power and high need remaining in rural districts.

Through this, we were able to define a user segmentation of 1) the elderly, who encompass a large number of the hearing-impaired overall, 2) communication workers who need aural communication (teachers, salespeople, etc.), and 3) children who need education. Along with these three types, there is a general trend for the hearing-impaired population to rise, believed to be due to a trend toward the expansion of 1) the increasing average life expectancy in India, 2) the increase of workers in the service industry, and 3) the rise in education expenditure due to an increase in average annual income.

This is a summary of the age, sex, occupation, hearing aid purchased, and degree of hearing impairment for the 18 people who purchased hearing aids.

Sex	10 male (55.6%), 8 female (44.4%)
Age	1 under 30 (5.9%), 4 aged 30-59 (23.5%), 12 aged 60 and over (70.6%), 1 N/A
Occupation	8 housewives (50.0%), 3 petty business owners (18.8%), 2 farmers (12.4%), 1 worker (6.3%), 1 teacher (6.3%), 1 student (6.3%), 2 N/A
Hearing aid	8 body aids (44.4%), 9 behind-the-ear (50.0%), 1 both (5.6%)
Degree of hearing impairment (right)	0 Mild (0%), 5 Moderate (31.3%), 6 Moderately severe (37.5%), 4 Severe (25.0%), 1 Profound (6.2%), 2 N/A
Degree of hearing impairment (left)	0 Mild (0%), 3 Moderate (18.3%), 8 Moderately severe (50.0%), 5 Severe (31.2%), 0 Profound (0%), 2 N/A

* Mild: 26-40dBHL, Moderate:41-55dBHL, Moderately severe:70dBHL, Severe:71-90 dBHL, Profound: 91dBHL and over

* (%) shows the ratio among the valid data excluding N/A answer.

This study investigated the possibility for sustainable business in the regional units of India (blocks, with populations of about 200,000) and solutions to issues in the BOP layer. Beginning with the investigation, according to information from local doctors, there is data which indicates that, among patients who are aware of their hearing impairment, 20-30% are buying hearing aids. Based on that, we advanced the investigation using the following trial calculation as the minimum break-even point for achieving sustainable business operation. That is, with a population of 200,000, if we assume 2% or 4,000 people, are hearing-impaired, and 10% of those buy Rion hearing aids, then our goal is to sell 400 units.

In this study, there were problems with the implementation, and we were not able to obtain data showing achievement of the expected 400 units per year sold, but by applying solutions to several technological and business aspects, we learned that it is possible to advance into the rural market which includes the BOP layer.

The following three points were the conclusion of the study. (a) Regarding the distribution route, the distance to get from the implemented medical camp to the clinic where diagnostics were conducted (it takes 2-3 hours to get to the clinic) became a bottleneck and b) regarding sales of audiometers, the handy audiometers first considered did not contribute enough to resolve issues of accessibility, and it was clear that there is a need to actively investigate a system or business model by using a tele-diagnostic model.

On the other hand, the basis of our decision came down to c) the possibility of selling hearing aids. Specifically, among the line-up tested in the pilot sales, it was significant that the price range of the products sold was higher than our original expectation. Although there were issues with the number of sales, it was important to confirm the fact that the more expensive behind-the-ear hearing aids (sold for 4,500INR ≙ ¥9,000) had more favorable responses from the targeted consumers compared to the cheaper body aids (sold for 1,980INR ≙ ¥4,000).

Based on the study results above, we were able to confirm that there is a strong demand for affordable, durable hearing aids even in the BOP market and rural India. Since it is still financially not feasible to start a business by targeting BOP consumers in rural India, business targets need to be extended to those who are in the middle-class¹ in order to supplement profitability. As well as reaching to the middle-class, approach to the BOP consumers also need to be extended. In order to do so, Rion is planning to develop a tele-diagnostic system in rural areas. Specifically, we will conduct business development on sites in medium-sized cities such as Lucknow, the capital of the state of Uttar Pradesh, and Guwahati, the main city in the state of Assam; using clinic locations as central bases, we will combine tele-diagnostic with doctors' rounds to cover rural districts.

By taking this whole pyramid approach targeting both the middle-class and BOP segments, we will realize not only the sales of audiometers but also the improvement of the hearing environment, aiming for increased coverage of the population for hearing examinations, as well as the increase in number of exams by audiologists per capita, an issue with the insufficient overall number of medical staff in developing countries.

Study background and goals, and consistency with development issues

In this study, along with offering the opportunity for hearing examinations, we aimed to improve the hearing environment of hearing-impaired people through affordable, durable hearing aids. In India, there are disparities in the opportunities for hearing examinations due to an overall lack of medical staff and facilities in the country, but in this study, we aimed to

¹ In this report, the middle-class is defined as the people whose annual income is US\$3,000 and above, and the BOP is defined as the people whose annual income is less than US\$3,000.

improve the situation surrounding the hearing-impaired in rural districts where the disparity in medical care is extreme.

This study was conducted based on a global strategy of Rion, in a background of the globalization of its hearing aid, and as Rion's global competition intensifies, we are considering the possibility of advancing not into the wealthy layer of emerging urban areas, but into the rural market of emerging and developing countries.

To add more information about Rion, it is a company with technology and quality level equal to the so-called Big 6 global manufacturers² and boasts the top share for hearing aids and audiometers in Japan.

Also, in the consideration of advisability of sustainable business, Rion's predominance in the competition was an important key. That is, with regard to globally competitive companies, Rion is the only one that not only does both analog and digital hearing aids but also has a line-up of audiometers; based on this, if it is possible to have flexible examination and distribution networks, it would be possible to not only move forward into the mid to long-term market but also become a predominant competitor with the possibility of approaching hearing problems in rural areas. This is because if it is possible to reconstruct a business model by overcoming issues with Rion's technology, we can maintain our share as well as social and economic impacts in the long term.

Methods, aims, and term of the study

The study was conducted from June 2014 to August 2016. The target region was Sultanpur and Sitapur, Uttar Pradesh (the domestic study target region is shown on the map). Uttar Pradesh is located in northern India, and its state capital is Lucknow. Uttar Pradesh has the largest population among the states of India, with a population of over 200,000,000 people [Census of India, 2012]. The real gross state product is the third highest in India, comprising 7.8% of India's gross domestic product, and is showing a high rate of growth in recent years (Indian Statistics Times, 2015). The major industry of Uttar Pradesh is agriculture, and its main food crop is wheat, with its main cash crop being sugarcane [PHD CHAMBER of Commerce and Industry, 2011]. Sultanpur is 120km from the state capital of Lucknow, and Sitapur is 95km, both located in the same state, near the capital. Their populations are 3,480,000 and 3,970,000 people respectively. [Census of India, 2012]

² There are 6 manufacturers of hearing aid, so-called the "Big 6" who are capable of designing and developing their own integrated circuit-embedded equipment: Siemens (Germany), GN Resound (Denmark), Oticon (Denmark), Widex (Denmark), Starkey (the US), and Phonak (Switzerland).

Figure 1 India study target region map



Research group revision based on a blank map of India

During this study, we conducted verification of the business hypothesis, divided into three stages of 1) verification of marketability, 2) development of business workflow, and 3) describe strategies for expansion. Regarding 1) verification of marketability, this study included user interviews that were conducted to start with in rural districts, as well as an online survey, through which we could grasp market trends and narrow down the market, and regarding 2) development of business workflow, we confirmed the primary distribution channels of the study target region, and dealt with initial trial sales, but we obtained the result that the business forecast was not sufficient, so we decided to concentrate trial sales efforts in Uttar Pradesh, which has a high population density and a large market scale. Regarding 3) describe strategies for expansion, since we were not able to achieve as high a result as

expected for expansion from the trial sale, we prioritized methods to supplement the earnings model and ways to optimize examinations.

Conclusion of feasibility study

Rion has made the decision to launch business targeting rural market and local areas in emerging nations and developing countries, beginning with the Indian market, and, through tele-diagnostics, care for newborns, and production of affordable, durable hearing aids, aim to contribute universal health care coverage, particularly in the field of hearing. However, the details of business will be decided in October 2016 in the medium-term management plan, and according to the result, there is a possibility that the speed or direction of sustainable business may be amended.

Basis for the decision on sustainable business

Through this study, we were able to confirm the needs of the rural markets in India, and it was also important to specify the issues around offering hearing examinations and solution strategies.

Specifically, based on the results of the trial sales and the constraints made clear by those results, we were able to update the business plan, but as a result, it was possible to have a draft with the specificity and possibility worth moving toward implementation as Rion's global strategy. The implementation strategy schedule, order of priority, and investment budget will be determined gradually as part of the medium-term management plan to be formulated in October.

As a background to this decision-making, we will confirm investigations conducted from two directions. One is the point of what kind of approach is possible regarding the enormous latent need understood through the results of the trial sales in Indian rural market, and whether Rion can create a sustainable business. The other one is the point of, among intensifying global competition, what kind of strategies are possible in the markets Rion is trying to develop from now on in emerging nations and developing countries. The results of this study did not clearly indicate the possibility of sustainable business. However, on the other hand, the market which could be created in the untapped space of the field of hearing showed a valuable actual situation.

For the untapped field of hearing care confirmed above, as a result of pursuing our obligation and the possibility of technical solutions, as a manufacturing company in, the advancement of the tele-diagnostic model.

Business model

The business model planned at the end of the study is, using tele-diagnostics, to overcome the lack of overall numbers of audiologists (1,500 in all of India in 2013 (The Times of India, 2013)), further increase efficiency of diagnostics, and search for an optimal business scale, in order to implement sales of affordable, reliable, durable hearing aids.

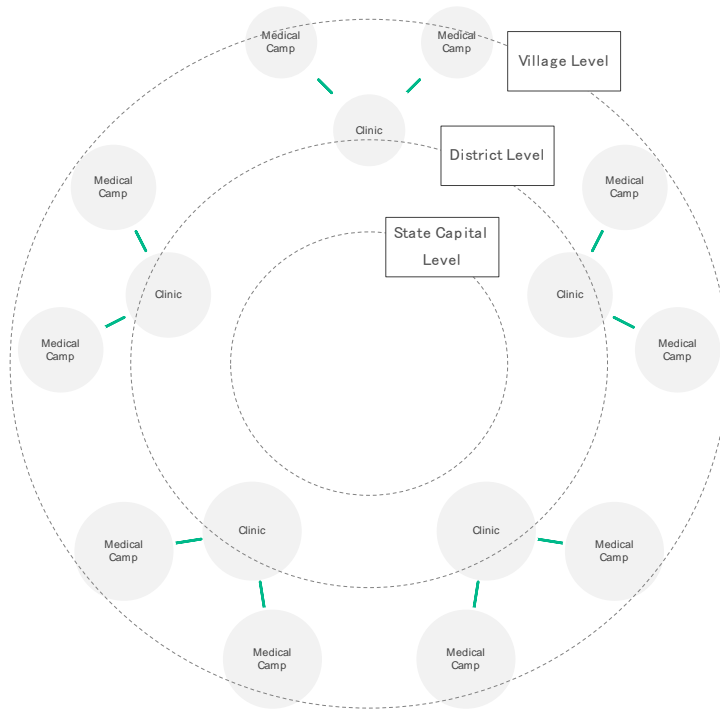
The economic advantage of tele-diagnostic is that we can provide reliable and affordable diagnostics without putting extra cost on exams and travel distance, Therefore, it will be possible to offer a more affordable product by implementing an optimal sales structure, covering more rural areas and assisting more hearing-impaired people.

To return to the initially hypothesized business model of this study, it was a model of building a hearing franchise network in units of blocks together with our local counterpart in India, Drishtee. The strength of that model is that audiologists are seen as franchisees, who would manage medical camps in rural areas, and take on medical camp management, examinations, and hearing aid prescriptions, and if that model crossed the profit line, it would actively be expanded.

Specifically, we investigated the possibility of business development and study based on an allotment of work where both parties would construct the service model, Rion would handle production of hearing aids and audiometers, export, and construction of a management system, and Drishtee would be responsible for training and management of franchisees in rural areas.

However, as described above, in order for improvement of the environment surrounding hearing issues in the BOP layer to coexist with profitability as a business, supplementation of revenue (the need to raise the sales numbers and unit price) and improvement of examination efficiency (the need to raise the number of complete diagnostics and the maintenance of skilled examiners) became issues. As a strategy, we are actively aiming for the introduction of a DtoD tele-diagnostic model, and actively pursuing solutions to the problems of profitability and examination efficiency investigated by this study, considering development at the state capital level.

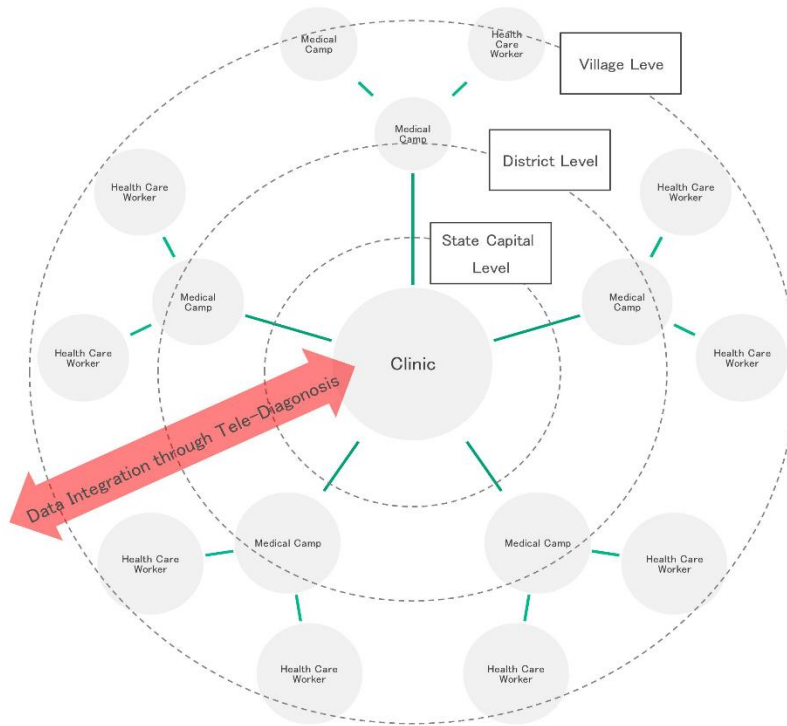
Figure 2 Business model planned at the beginning of this study



Creation of research group

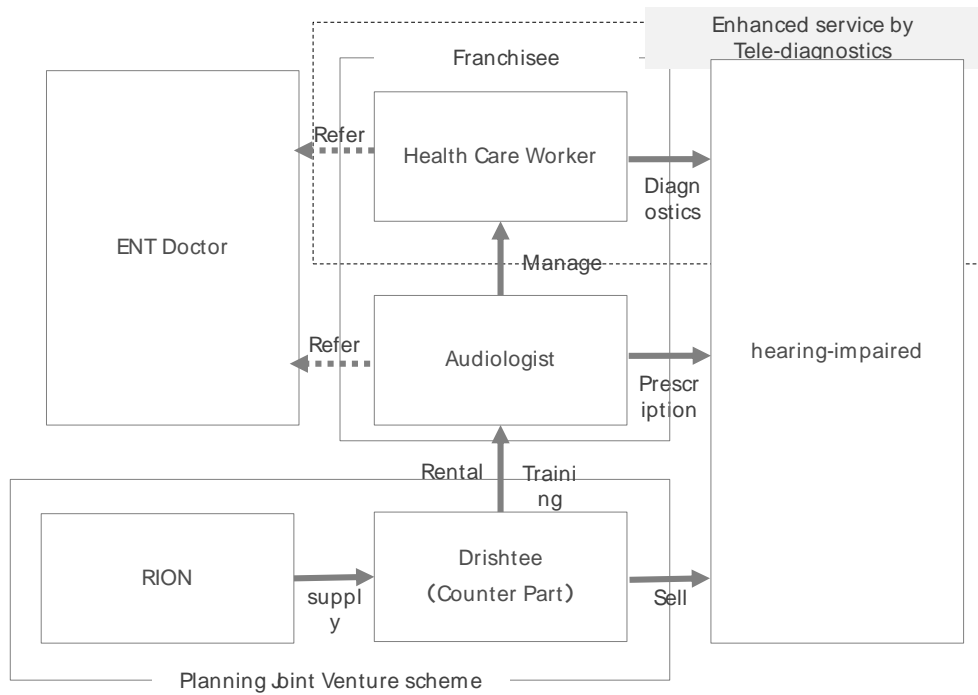
We established clinics in the block units, conduct examinations at medical camps, and handle results of diagnostics done at clinics, and sales of hearing aids to hearing-impaired people for whom they are judged necessary. Sales numbers and examination efficiency are issues.

Figure 3 Business model planned at the conclusion of the study -1



Creation of research group

Figure 4 Business model planned at the conclusion of the study -2

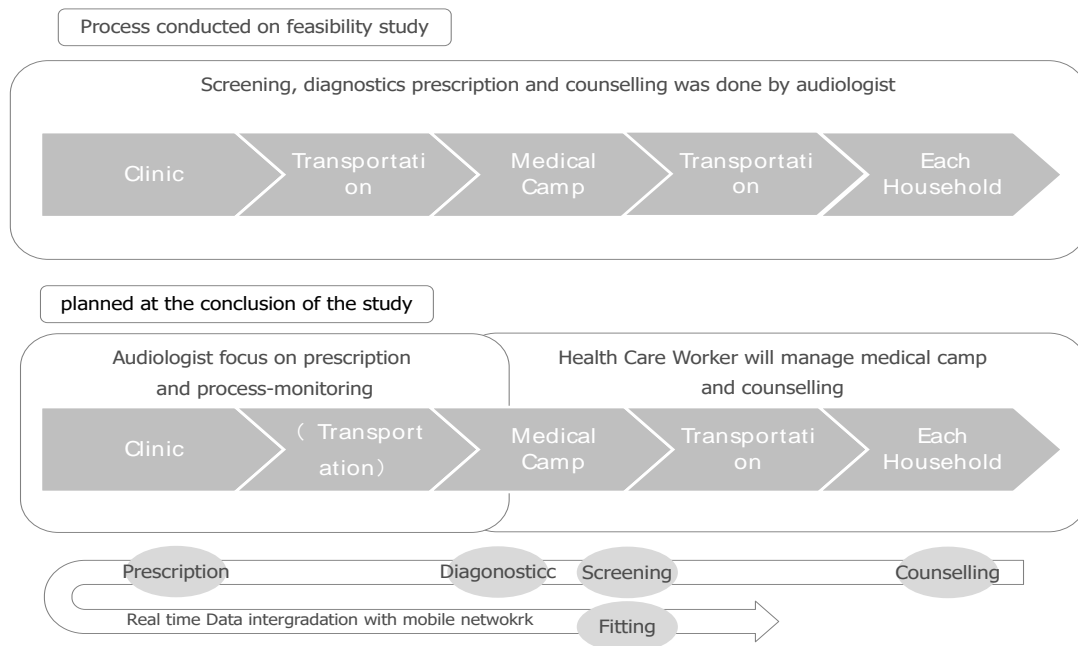


In the business model under consideration at the end of the study, it is assumed that Rion, as a manufacturer of hearing aids and audiometers, through updating of its technology and product line-up, aims to contribute to universal health care coverage, through which anyone can enjoy affordable, reliable care.

Specifically, in addition to the analog hearing aids currently in use, we would supplement profitability by adding semi-digital hearing aids in a line-up aimed at India's middle class. In combination with this, incomplete examinations, it is necessary to do not only air conduction exams but also bone conduction exams; we aim for the miniaturization of bone conduction audiometer, and expansion of telecommunications functions for the realization of the tele-diagnostic model, as well as higher examination efficiency and suppression of personnel costs. (If we implement the tele-diagnostic model, we can dramatically reduce operating costs, since it eliminates the need for audiologists to travel with medical camps. The examination process will be operated by health care workers,³ but managed by audiologists, and only audiologists will be able to regulate prescriptions.)

This business model aims for the establishment of a sustainable model assuming sales of hearing aids and audiometers, but as that method also aims for the coexistence of business potential and solutions to development issues through the introduction of the tele-diagnostic model and cooperation with local partners.

Figure 5 Tele diagnostics and optimization of examination process



³ Health care worker is mainly involved with primary health care activities and having experience and knowledge on health issues and medical treatment. In India there are 1 million ASHA workers, Accredited Social Health Activist organized by Ministry of Health and Family Welfare

We will aim for the expansion of telecommunications functions for the implementation of the tele-diagnostic model, in combination with supplementing profitability by adding a line-up of semi-digital hearing aids aimed at India's middle class.

We assume that the main business process for the actual advance of the tele-diagnostic model will be a model as follows. We will establish clinics not in the largest cities of Delhi, Mumbai, etc., but in middle size cities of states (Lucknow, the capital of Uttar Pradesh, etc.), and spread awareness using simple methods such as visiting villages directly with advertising vehicles, distributing fliers, and also conducting screening at locations that are convenient transportation stopover points. In the cities, we will conduct promotions through Internet advertising (cell phones are already prevalent even in rural areas, and closer to urban areas, the number of smartphone users is rising sharply. Even in rural districts, it is possible to spread awareness and deliver advertising via SMS), and invite people to have screening. Also, hearing aid prescriptions will be given according to the guidance of audiologists, but through real-time chat about examination information via cell phone transmission, patients do not need to travel to clinics.

Regarding the examination process, the simple exam can be done in only five minutes, but in order to avoid lowered exam efficiency rates due to overcrowding, we will collect 50INR for the exam. This minimum price was established to deter people without hearing problems from having exams simply out of curiosity. Diagnostics conducted at clinics established in the major cities of blocks are set at 250INR as compensation, but Rion will encourage consumers to purchase hearing aids by giving a free complete exam to those who purchase the hearing aids at clinics established by Rion. The goal is for revenue from examinations to fund advertising, and for hearing aid sales to cover personnel costs and initial investment.

Also, in cases where medication or surgical treatment is deemed necessary, the audiologists at our clinics will introduce patients to medical facilities where they can receive specialized treatment from ENT doctors inside and outside the area.

Remaining issues surrounding sustainable business and their countermeasures and study methods

- Tele-diagnostic model experiment
There are no large technological issues, but there are the issues of what development and production costs will arise and how to integrate with the local business process, so it is necessary to conduct early-stage demonstration experiments.
- Specification of the possibility of advancement to the tele-diagnostic model in other regions
Through the tele-diagnostic model, if we can confirm that it will be sufficiently profitable as a business, we must look for a solution to expanding the scope in the early stages. We

must investigate the possibility of development and candidates for local partners in southern India, Bangladesh, Indonesia, etc.

- Production of semi-digital hearing aids
As an objective of Rion's medium-term management plan, we plan to develop an affordable semi-digital product for hearing-impaired people with a high degree of difficulty, but from here on, establishing the process, including price setting and maintenance, will become an issue.
- Development and production of examination equipment for the tele-diagnostic model
In the verification experiment, we plan to use a simple prototype model, experimenting with changing a bone conduction hearing examination device owned by Rion and adding communication functions. According to the result, we will modify the way of developing the product.
- Finalization of each party's responsibility and establishment of a joint venture scheme
After finalizing what place in what city to launch, we will conduct Tele-diagnostic model experiment and renew workflow and co-investment model will be decided
- Quality control of counseling and manually
We will conduct the same level of process quality done by health workers as Audiologist and we will develop communication training, manual, tools.
- Incentives for Partners especially audiologist and health care workers
We revise incentives according to our price policy.

Plan for sustainable business going forward

- Rion: Synthesis of Rion medium-term management plan (October, 2016)
- Drishtee: Investigation of site plan (November, 2016)
- WIA Lab: Update of local business plan (November, 2016)
- Rion: Development of the prototype device (by at the end of 2016)
- Drishtee: Preparation for establishing clinics (from beginning of the next fiscal year, 2017)
- Drishtee: Medical camp trial run and tele-diagnostic model demonstration experiment (from the beginning of the next fiscal year, 2017)
- Rion: Production of semi-digital hearing aid (from the start of next fiscal year, 2017)

Profile of counterpart: Drishtee

One of most successful logistics social enterprises focuses on Rural India. Drishtee owns extensive distribution network of daily consumer goods. The company provides a wide range of services from e-governmental solutions to educational trainings to the rural community in

India. So far, Drishtee has supported 15,000 small-scale entrepreneurs and covered 5,000 villages over 10 states, supporting 1,000,000 households. Its activities are centered on the states of Uttar Pradesh, Bihar, and Assam, where 40% of India's farming population reside. It is acknowledged as a pioneer in technology by the World Economic Forum. It has been ranked in Red Herring Asia's top 100 best ventures. It won the Stockholm Challenge Award (prize given for solving social problems using information technology).

Study photographs



Medical camp implementation (early examination)



Medical camp implementation



Trying out Rion hearing aids at a hearing aid information session



Medical camp implementation announcement flier



Hearing-impaired girl met at a drugstore in Uttar Pradesh



Stationery shop owner who bought Rion hearing aids in Uttar Pradesh



Locally-employed hearing examiner and hearing exam room



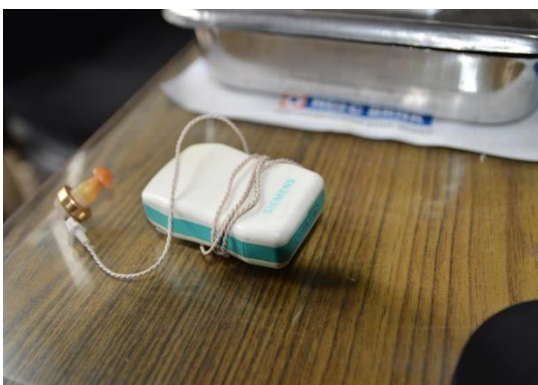
Map of the cultivated area in Sultanpur



Advertising vehicle making a visit to a village



Spreading awareness to villagers through the vehicle speaker



Analog hearing aid (body aid): Siemens product distributed locally



Rion analog hearing aid (behind-the-ear) already being distributed through unusual routes

