

**India**

**Preparatory Survey for BOP  
Business on Improvement of  
Basic Education  
Utilizing Multimedia Device and  
Contents in India  
(Summary)**

**January 2016**

**Japan International  
Cooperation Agency (JICA)**

**Ricoh Company, Ltd.  
Save the Children Japan**

OS
JR
15-127

## 1. Outline of the Survey

In recent markets, in particular in the markets of emerging and developing countries, Japanese manufacturers have been finding it increasingly difficult to compete with Chinese, Korean and other manufacturers who provide low-priced products with improved quality. Japanese manufacturers' conventional business model of offering products alone is no longer effective. In order to survive global market competition, manufacturers are urged to give essential solutions to social problems and build a new business model that is sustainable toward the future.

As part of measures to meet this challenge, Ricoh began making examinations to offer educational solutions beyond simply selling products to schools including cram schools attended by children at the Base of the Economic Pyramid (BOP) in India. In the background to this project, Ricoh had launched the visual communication business in 2010 to build a new profitable core business, while upholding the enhancement of business in emerging countries as one of its major management strategies. In the visual communication business, which focuses on projectors, video conference systems, and electronic blackboards, Ricoh constantly aims to help customers solve their problems and works to meet potential market needs by providing solutions that combine equipment and services, such as cloud services.

In its business, Ricoh attributes the greatest importance to India among emerging countries. India has the largest numbers of schools and children in the world<sup>1</sup> while it is faced with a range of problems at educational facilities, including a multi-lingual population, low literacy rates (62.7% as a whole; 74.0% for men and 51.8% for women)<sup>2</sup>, and low education achievement level (primary education completion rate of 65% and dropout rate of 34.2%)<sup>3</sup>. Based on these facts, Ricoh made the hypothesis that easy-to-understand audiovisual multimedia content would meet the needs of the local educational market even more in India than in developed countries, and began examining how to expand its business into the Indian educational market. As the first step to follow the path toward success in the market, the company partnered with Save the Children Japan (SCJ), one of the 30 member organizations comprising Save the Children, the world leading international NGO for children, with a view to understanding the educational administration systems, measures and challenges in India. Then in 2012, the two parties jointly conducted a preliminary survey on the Indian educational market.

The preliminary survey has revealed that people at the BOP (the poor, those of lower caste, women and children), who account for a large portion of the total population, are excluded from the benefits of India's economic growth, though the country is achieving remarkable economic growth, mainly in the science and technology fields including the IT and service industries. Furthermore, in recent years, the BOP population has been flowing into urban areas from rural communities in search of jobs, which is causing new poverty problems in cities. Through the survey, it was also confirmed that at local educational facilities, in particular at government schools, there are various other problems in addition to the aforementioned challenges, including

---

<sup>1</sup> Children (about 440 million) accounted for 40% of India's total population.

[http://www.jetro.go.jp/jfile/report/07000866/in\\_market\\_development.pdf](http://www.jetro.go.jp/jfile/report/07000866/in_market_development.pdf)

<sup>2</sup> UNESCO Institute for Statistics 'UIS Statistics in Brief' Education profile – India

[http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=121&IF\\_Language=eng&BR\\_Country=3560](http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=121&IF_Language=eng&BR_Country=3560)

<sup>3</sup> Human Development Report, United Nations Programme <http://hdrstats.undp.org/en/countries/profiles/IND.html>

those regarding the school infrastructures, such as buildings and electricity, lack of teaching materials, the multi-lingual population, a shortage of teachers, and the insufficient quality, IT literacy and motivation of teachers.

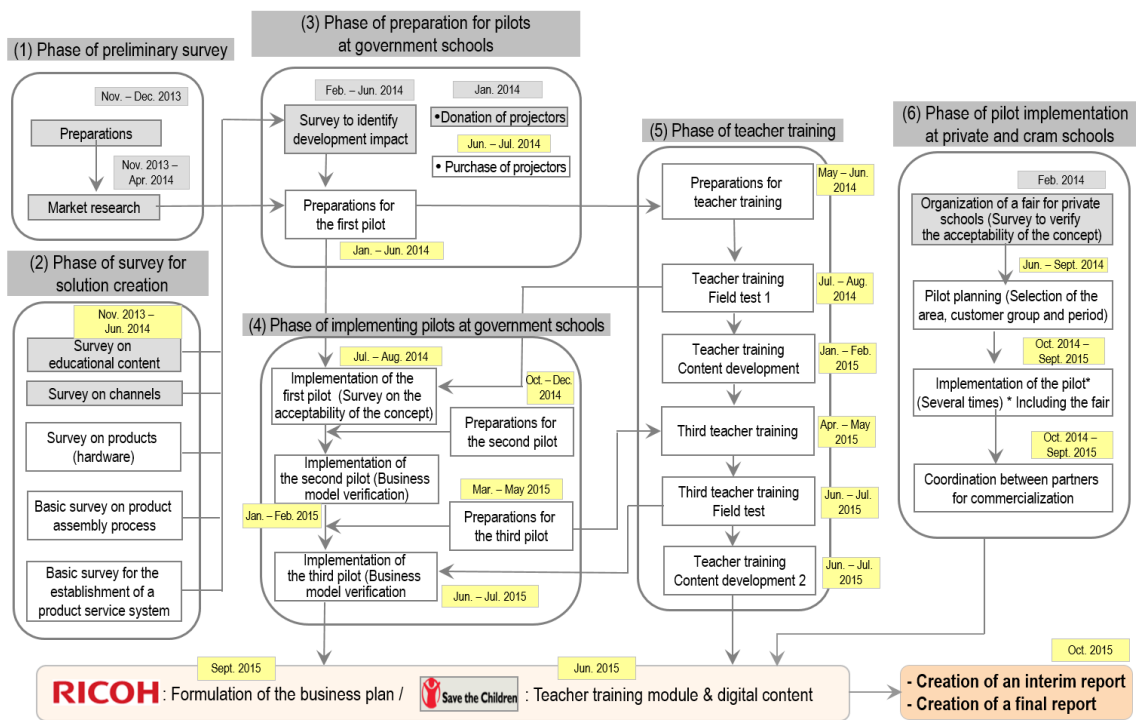
As part of the preliminary survey, members of the survey team visited government schools in Delhi, Bihar and Andhra Pradesh to provide children with pilot classes using multimedia content. Specifically, in each of the pilot classes, a projector was used to show audiovisual content stored in storage media (USB memory) by using a wall of the classroom as a large screen. The pilot classes stimulated the curiosity of both teachers and children and had a great impact on them.

Through this preliminary survey conducted locally in India, Ricoh has confirmed that providing children with audiovisual multimedia content in school classes by using projectors that can be used easily even in small rooms by anyone, including those with low IT literacy, will help increase children's motivation to learn and improve their educational standards.

Based on the results of the aforementioned locally conducted preliminary survey, Ricoh collaborated with Save the Children (SC) to conduct a preparatory survey for educational service business in India to decide whether the educational solutions that the company was examining could provide enough value to improve local educational quality and also be sustainable as a business.

The educational solutions focus on Environmental Studies (subject for higher graders in primary schools) and are a package of (1) "digital content and hands-on materials that are useful for daily lives," which help teachers give interactive lessons and (2) a mobile learning machine (MLM) that is equipped with a projector and a battery for use even in places where electricity is not available. The solutions are provided based on the concept of "usable by anyone at any place and any time."

In order to verify the educational value and business sustainability of the solution as explained above, the joint team conducted a survey targeting Delhi, the capital territory of India and the states of Telangana and Bihar. The survey was roughly subdivided into two surveys: the first survey to measure and verify the educational value (effectiveness) of the solution and the second survey to verify the sustainability of the solution as a business.



**Diagram showing the survey design**

## 2. Survey Results

In the first survey conducted to measure and verify the effectiveness of the educational solutions, the survey team asked government schools and the state educational authorities to cooperate with the team to “create (educational) value” in line with the school curriculum, and the value thus created was measured and verified according to the following method. Teachers, after given necessary training, provided children with pilot school classes and then the children were tested on their levels of understanding. The survey team also conducted questionnaire surveys targeting teachers as well as children and their parents and compared the obtained results to measure the effectiveness of the educational solutions.

In the survey project, a solution package combining a projector and multimedia content was expected to provide educational value by helping to make it easy for anyone to receive high-quality education. In the project, teachers received training on interactive teaching methods using ICT and basic skills for PCs and projectors in Delhi, Telangana and Bihar, and then these teachers and lecturers of the District Institute of Education and Training (DIET) as well as trainees attending the DIET to become teachers led the activity to use existing digital materials and the still and animated images that they themselves had shot to create new digital teaching materials for use in pilot classes in line with the textbooks. At each of the targeted schools, the teachers then gave pilot classes to children by making combined use of the digital materials with analog hands-on learning materials that children could actually touch and also by letting them take part in some classroom activities.



Photos: (Left) Teacher explaining the mechanism of “condensation” to children (Delhi)  
(Right) Teacher showing how the heart functions by using a projector and digital materials (Telangana)

The following compares the results of the questionnaire survey conducted after the end of the third pilot class with the results of the survey conducted after the end of the first pilot class.

Opinions from children:

- To the question, “Which subject was the most interesting?” the percentage of respondents who answered “Environmental Studies” increased in Bihar and Telangana.
- To the question, “To what extent did you enjoy Environmental Studies?” the percentage of respondents who answered “Enjoyed (very) much” increased in Delhi, Bihar and Telangana and reached almost 100% in all of the three regions.

In Bihar and Telangana, it was confirmed that children had enjoyed Environmental Studies more and more in the second and third lessons and their interest in the studies and appetite for learning the subject had increased relative to other subjects.

Teachers:

- To the question, “To what extent did you enjoy teaching?” the percentage of respondents who answered, “Enjoyed (a lot)” stayed at 90% in Delhi, while in Bihar and Telangana the percentage reached 100%.

Most of respondents answered they had enjoyed teaching, and no significant differences were observed between the three regions. School classes provided by using a projector and digital materials seemed to have a great impact on children and attract them effectively.

Parents:

- To the question, “Do you have interest in school classes of your children?” the percentage of respondents who answered “Yes” reached 100% in Delhi and Telangana.

It was confirmed that parents had been maintaining a high interest in school education in all

of the three regions. Parents' interest in education is an important factor for the improvement of educational quality, and the fact that the pilot classes given by using a projector helped maintain and increase their interest implies that such classes could play equally effective roles in other regions.

The pilot classes helped improve the children's level of understanding and their parents' interest in school classes while also keeping teachers' motivation to teach at a high level. Accordingly, it is verified that the educational solutions conceived by Ricoh will be well accepted by teachers and educational institutions in each state of India and contribute to increasing the quality of local education. By combining analog hands-on materials with digital content, teachers can indeed give interactive classes to children instead of teaching them in a one-sided manner. In particular in the targeted schools in Delhi and Telangana, the pilot classes helped teachers understand the significance and pleasure of creating teaching scenarios and educational content for children, encouraging them to give interactive and innovative classes by actively using both digital and analog hands-on materials.

It is also worth noting that the pilot classes had the following development impacts.

The pilot classes made changed the children's behavior in addition to increasing their interest in and understanding of Environmental Studies. For example, after attending the pilot classes, some children began to display more leadership outside the classroom.

In Telangana, some parents who had heard about the effect of pilot classes transferred their children from private to government schools.

In the meeting held with the participation of the State Council of Education Research and Training (SCERT), the DIET, teachers of targeted schools, Ricoh (Japan and India), and Save the Children (Japan and India) in Telangana in August 2015, the results achieved through the survey project were reported, including the elimination of the gaps that had long existed between teachers and the state and district governments as well as the promotion of cooperation between the three parties (SCERT, DIET and teachers of the targeted schools) for the purpose of creating teaching materials.

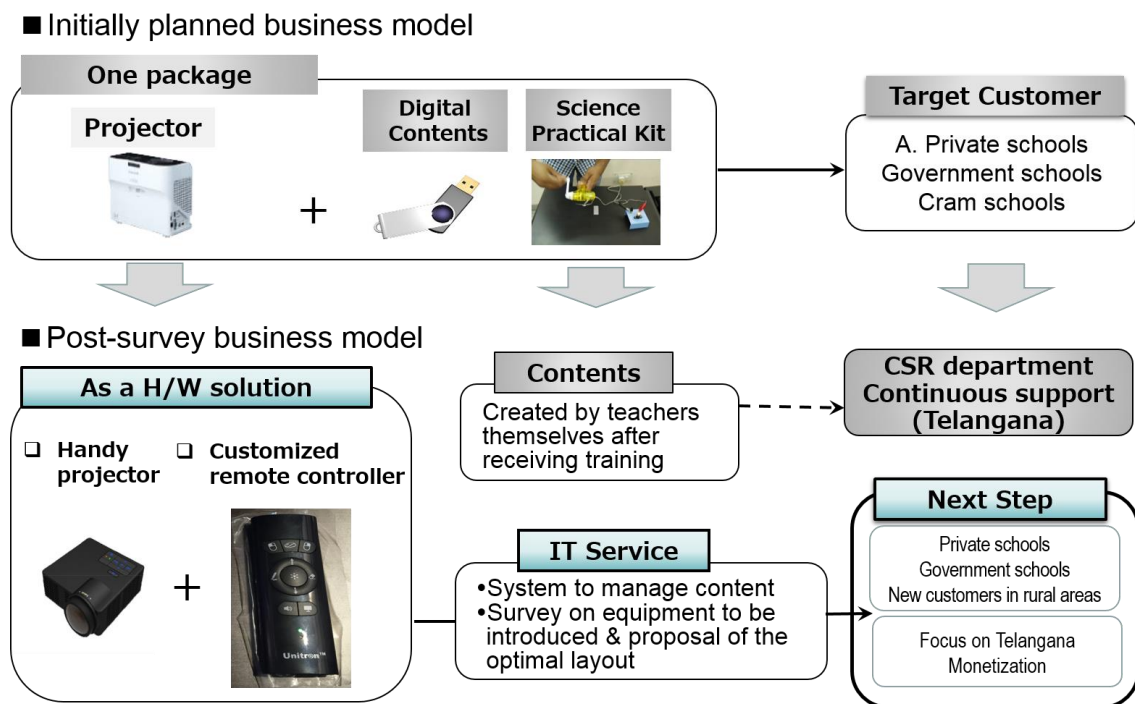
In the second survey conducted to verify the sustainability of the educational solutions as a business, the survey team asked questions to executive members of the educational institutes of the state governments that have budget authority over government schools. The questions include whether there were needs for the solution in other areas and whether the educational institutes were prepared to pay for them. As part of the verification process, a fair was also held targeting top managers of affordable private schools and cram schools which even children belonging to BOP families can attend at a low cost. In the survey, the top managers, who were one of the targeted customer groups for the educational solutions, were provided with opportunities to actually experience the solutions to be provided in the future and then asked to answer some questions. The survey team also had direct dialogue with the managers to verify their willingness to pay for solutions. The team took these measures to verify the sustainability of the solution as a business.

Regarding the method to provide digital content as part of the solution package, the survey showed an unexpected result. Ricoh initially planned to supply digital content to teachers based on the know-how gained through the survey project, for which the company had created sample content to be used by teachers in the pilot classes. However, teachers who experienced creating digital content for themselves in the training provided in the survey project began to enhance their ability to create such materials with support from the educational institutes of the state governments, and found it enjoyable to use their own developed content in school classes. Finally in Delhi and Telangana, the survey team received requests for support from teachers who wanted to create digital contents to be used in classes for themselves. This is an innovative and positive change made as a result of implementing the pilots in the project. This was an unexpected finding for the planned educational business but will help locals continue to increase their educational quality in an independent manner.

The project identified new needs through the survey - a system including training modules that would help the teachers create contents easily as well as a system for them to manage and share the created contents.

### 3. Business Model and Commercialization

#### Business model planned after the survey



#### Value to be provided

The key values to be provided by the educational solutions are confirmed to be the following two based on the survey results.

1) Hardware (projector) that provides the following specifications and usage

1. Can be driven by a battery (in case of blackouts including sudden power failures)

2. Can be moved easily between classrooms (for cost reduction)
3. Can project images with only about one-meter projection distance from the blackboard (for use in small classrooms)
4. Can be used easily by anyone to provide digital content in classes without using any PCs.

(To deal with the lack of ICT literacy: Anyone can operate the projector easily by inserting a USB memory into the machine and by using a remote controller)

## 2) IT service for the easy use of multimedia content in classes

Services including the establishment of a system for teachers to create and manage multimedia content as well as related services

Initially Ricoh planned to provide hardware and multimedia content in a package, but the survey results clearly showed that it is important for teachers to create the content for themselves as a precondition for the continuous use of the educational solutions. Ricoh will therefore not offer multimedia content and instead steadily press forward with the provision of hardware (projectors and remote controllers to meet local needs). As for the IT services (establishment of a multimedia content creation and management system and provision of related services), examinations will be made regarding the business feasibility of the services through the business meetings to be held in Telangana and throughout the support period.

### **Channel**

As for the sales channel for the educational solutions, Ricoh India Ltd. will take charge of both direct sales and indirect sales through dealers as the local sales subsidiary of Ricoh Company, Ltd. Ricoh India has already organized a team specializing in education (named “Educational Vertical”) by inviting educational professionals and already has a track record of both direct and indirect sales to local private and government schools. Through the survey, the sales company has built up relations with new dealers and already sold Ricoh’s existing projectors to them, which is one of the great results of the survey project.

JICA’s Delhi office kindly introduced Ricoh to a company that gives loans to affordable private schools and other private schools as a partner to find new customers. School owners receive loans to cover the cost of refurbishing and expanding the school buildings and establishing computer rooms, and the financing company is now supporting about 1,500 schools in India by providing them with loans. Through the fair held as part of the survey project, Ricoh was able to build relations with the financing company, and in expanding business to private schools in India, will foster cooperation with the company as a partner to find new customers.

### **Customers**

Almost as initially planned, government schools and affordable private schools were chosen to be the main targets for the educational solutions. For the time being, the focus will be placed on government schools in Telangana where the effectiveness of the educational solutions was verified more clearly than in other regions and where there were outstanding needs for the



solutions. In Telangana, Ricoh will work to develop the educational solutions firmly into a business and give more insights into the system to support teachers in creating and managing multimedia content. At the same time, based on the needs identified through the survey, Ricoh will develop new projectors, the demand for which is expected to expand, and will sell them not only to government schools but also to private schools, mainly to affordable private schools.

### **Development impacts on the targets**

The survey proved that the educational solutions that provide a package of a projector and IT services will offer teachers as well as children and their parents at the BOP value and help improve local education. In Delhi and Telangana, the survey project made great changes to the behaviors of teachers and state and district educational institutions. For example teachers increasingly wanted to create the multimedia content to be used in classes for themselves. As for children attending government schools, they got more and more points in the tests conducted to measure the effect of the pilot classes at the end of each pilot, and also their appetite for learning and pleasure of attending classes continued to increase.

### **Value chain/resource plan**

With regard to projectors to be provided as an educational solution, Ricoh had examined local production as a means to deal with high local tariffs. However, as a result of estimating the cost of newly establishing a local factory, the cost of providing local workers with necessary skills and training, and possible pricing, the company reached the conclusion that the projectors should be produced in a cost-effective manner through a conventional manufacturing process. Under the leadership of the head office, the feasibility of developing new products for emerging markets including India was confirmed, and accordingly Ricoh will make plans to develop new products for these markets by following the ordinary development, procurement, production, distribution and sales processes, which makes it difficult to make calculations and estimates only for the Indian market.

As for the provision of IT services, Ricoh will be able to build a new business model by giving more insights into the system for teachers to create multimedia content and manage it by using servers. Ricoh India has a development and sales unit specializing in IT services and can provide a wide spectrum of related services. The necessary service size, however, depends much on local needs and it is difficult to estimate the required size at this moment.

The survey results show that educational solutions are quite feasible as a business. Accordingly, Ricoh will move to the next step, specifically to the step of developing educational solutions into business, while giving more insights into local needs by placing a focus on government schools in Telangana, where there are outstanding business opportunities for educational solutions.

The following shows the challenges to be met and the measures to be implemented for the successful commercialization of educational solutions.

Ricoh will commercialize the hardware (projectors), which is a key to the provision of value to

markets including India, under the leadership of the head office, and will follow the ordinary commercialization process for the hardware, including the development, procurement, production distribution and sales plans. The company aims to put the newly developed projectors in the market as planned and start selling the products to customers with whom it has built up good relations through the survey project, including those in Telangana.

Also, in order to provide value to the targeted markets through the packaged educational solutions, Ricoh deems it necessary to give more insights into the needs identified through the survey, as detailed below.

**Additional needs requiring further considerations**

1. Establishment of a system for teachers to create multimedia content easily for themselves
2. Establishment of a system for teachers to manage the created content through servers and others
3. Remote controllers more convenient for use in school classes

First, to boost sales, Ricoh will have meetings with the state government of Telangana to identify local needs while also gleaning information about how many machines and what types of devices have been introduced to local schools as a means to start providing IT services to local schools. The company needs to build an optimal business model in giving support to the schools.

As for remote controllers, the need to make them more suitable for use in school classes was identified at the stage of the third pilot class. To meet this requirement, Ricoh India will lead the product planning for the manufacture of more convenient remote controllers by a local company. Ricoh believes that the development of remote controllers suitable for school classes in India could lead to reverse innovation.

Furthermore, in order to encourage local teachers to create multimedia content for themselves, in order to use the content thus created in combination with analog hands-on materials as done in the pilot school classes in the survey project, and continue providing interactive classes for interactive communication with their students, it is critical to give continuous training to the teachers in cooperation with state and district governments. To meet this requirement, Ricoh will continue to cooperate with Save the Children, include more school subjects and schools in the target of the educational solutions in Telangana, where the company has built up good relations with the related parties, and will give more support to local teacher training as part of its CSR activities, thereby helping establish training programs and expand the introduction of projectors to schools across the state.