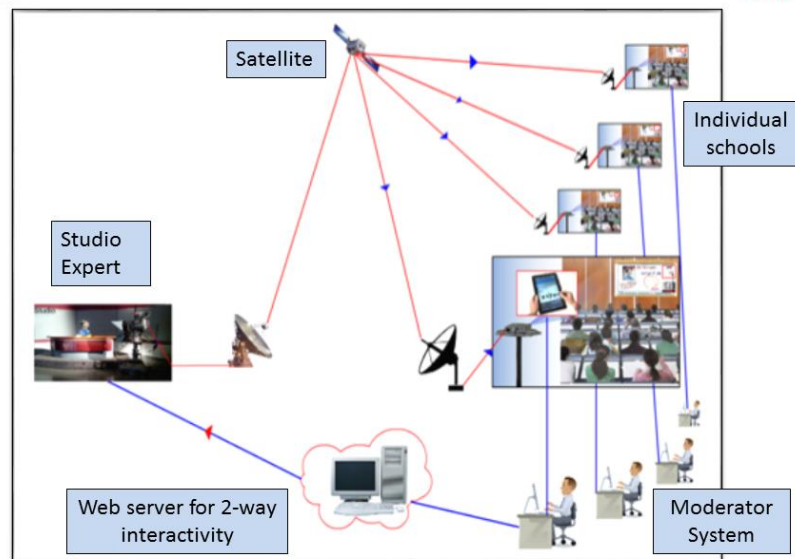


# Developing Management Structure for the Delivery of Tele-education in rural schools



## HYBRID SATELLITE –INTERNET TECHNOLOGY



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## 1. Introduction

The Primary and Secondary education in India lags behind most of the developing countries in terms of both quality and quantity. Though Gross Enrolment Ratio has increased over the years, the quality of learning has still not improved. The disparity is most prominent in rural areas. While the current teaching methods which lags in quality leads to weak understanding of concepts, the parents also may not be able to guide them properly. Moreover the girls have to travel large distance for education which demotivates them. In such a scenario, innovative methods for imparting education needs to be explored. One such method adopted is the Satellite and Advanced Multimedia Education (SAME) project for the rural areas, launched by the Karnataka state Government in association with Indian Institute of Management, Bangalore & other private companies. If the quality of teaching is good, value of education improves, leading to a virtuous cycle where people demand more education and hence better schools, leading to an overall increase in the quality of education. If we are able to provide good quality education to all, it will help students to empower themselves with knowledge. This will help in generation of employment and thus, creating a strong economy.

## 2. About SAME project

The Satellite and Advanced Multimedia Education (SAME) project, introduced in 1000+ government high schools in Karnataka State, aimed at addressing the obstacles in the present system by providing satellite-based training for primary & secondary students. Animation, graphics and other innovative multimedia platforms have been integrated with the school curriculum to help students. SAME is driven by the consortium of IIM Bangalore, Government of Karnataka and private companies –

1. Edutel - Educational content provider, delivers live video lectures with animation
2. Gumbi Softwares - Provides all technology & software for the SAME project
3. Opel – Human Resource provider, hires employees for execution at ground level

**Here is how it works –**

## Content

Edutel creates the content i.e. Animation, script for a live class.

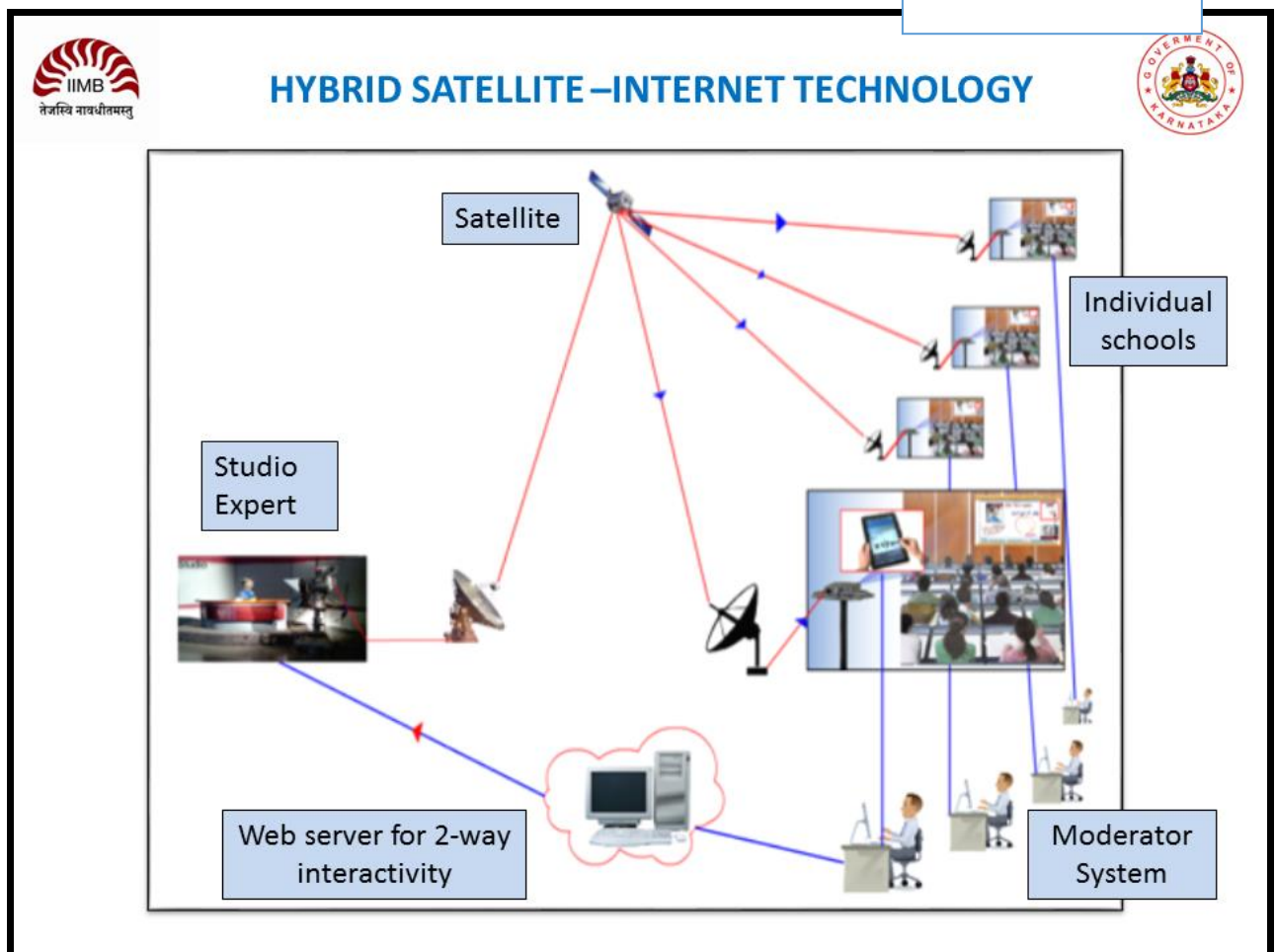
Content is as per syllabus verified with 10 steps procedure.

The class is recorded in a central studio & delivered live to the schools via satellites. Gumbi provides the technology to deliver the live classes, software, monitoring systems etc.

These live classes are shown in rural schools via projectors. VSC (Volunteer School Coordinator) sets up the systems to make it happen.

If students have any doubts, after the session they can call Moderators who solve the doubts. Number to call is displayed on screen & VSC makes the call.

### Technology in brief –



#### 4. Objective of CCS Project

The objective to understand the current management structure involved in delivering the SAME project and design the organizational structure to ensure smooth implementation.

We wish to prepare a detailed management structure plan, clearly defining every stakeholder role and responsibility. Currently the chances of faulty reporting are high in the absence of conspicuous monitoring system. The low monetary incentives and temporary working staff highlights the importance to understand the organizational behavior issues. By providing proper incentives to all, we will try to create an eco-system which will be self-sustainable.

## 5. Methodology

To solve the problems related to the management structure, we decided to visit the rural schools and understand the ground reality. Our methodology mainly consists of interviewing personnel who are executing the project at the each level. During the field visits, we observed how the system works, what all responsibilities are handled by whom, do employees know what they are supposed to do etc. Most of the times, we asked the personnel to perform a small task and observed how he/she does it, what challenges do he/she faces. We talked to students, teachers, coordinators and noted down their problems. After making the list of problems observed in the field, we interviewed managers from Edutel, Gumbi & Opel to know their responses. We suggested them few solutions and brainstormed with them about the feasibility of these solutions on ground level. After considering different ideas and opinions from all stakeholders in the project, we arrived at the recommendations.

## 6. Field Visits

During our field visits, we visited both, rural schools & the private companies which were working on this project. We tried to interact with as many people as possible to understand the ground reality so that we can come up with feasible solutions.

### 1. School visits

We visited two schools and one taluka office near Bangalore Rural area in Kanakapura Block which is almost 50km from the main city. Here are the details of the Schools –

1. **School: G HS TUGANI** , KANAKAPURA TALUK, RAMANAGARA DIST  
Code: 29320808804, Only Secondary School  
Total Students : 156 (86 Boys & 70 Girls)
2. **School: G MPS HAROHALLI**, KANAKAPURA TALUK, RAMANAGARA DIST  
Code: 29320801801, Primary with Upper Primary  
Total Students : 226 (138 Boys & 88 Girls)

We observed how the system gets setup & how live classes are run. We noticed that students were listening to the class & some of them were really interested in learning but at the end of the session, no one asked any doubt. We encouraged few students to

ask doubts to see how fast and effective was it. We also identified the problems by talking to school teachers, students, VSCs, Nodal officers, Taluka In-charge and surprise check personnel.

Photos of schools, students, VSC & systems in place –



Class going on, laptop & projector system

Nodal officer, Kalpesh, VSC, Nabeel



Students & VSC during live class



System in the box

### 1. Company visits

We met managers from all three private companies – Edutel, Gumbi & Opel. Edutel & Gumbi are sister companies and operates from same building. Edutel mainly deals with educational content creation and has robust 10 step content creation process. Edutel has hired many teachers & animators who together generates the content. Gumbi, on the other hand, mainly deals with technological support for Edutel. As per our observations, Gumbi is technologically very strong, they have built OMS (Online Monitoring System) tool, have setup good process, provided android phone with

proprietary app to each VSC etc. Opel provides human resources for the execution at different levels. They hire VSC (Volunteer School Coordinator) & VTC (Volunteer Taluk Coordinator) at village & taluk level respectively.

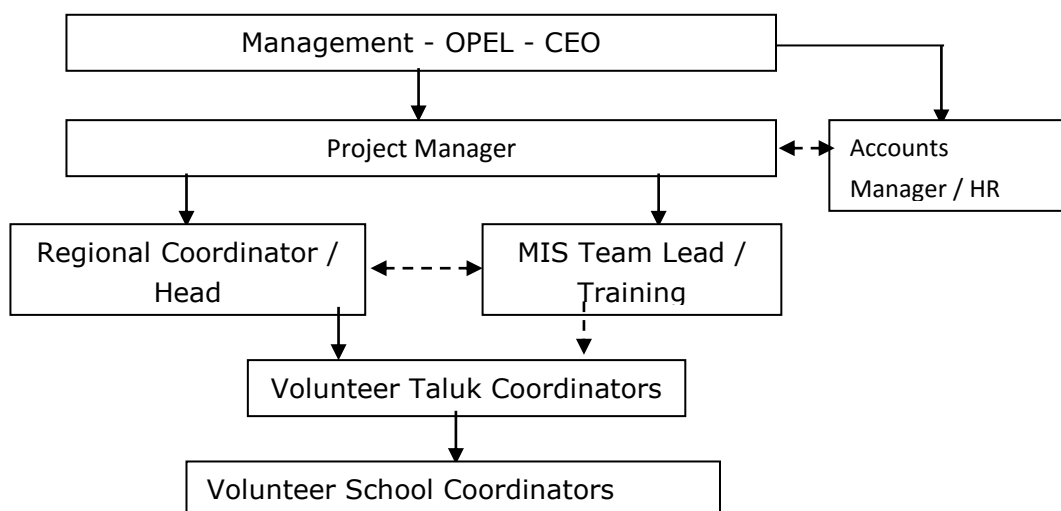
With our interaction with managers of all the three companies, we realized that implementation is a major hurdle. It is difficult to ensure if class has run or not in a school and even after extensive usage of technology to get the feedback, VSCs & VTCs try to manipulate the system.

### 3. Current Management Structure

Currently, SAME project is running in approximately 1000+ schools which are located in 18 different Districts. Each district has 2 Talukas (also called as Blocks), thus, total 36 Talukas. Each Taluka has one VTC (Volunteer Taluk Coordinator) and one TI (Taluka In-charge) also known as Moderator. Each school has one VSC (Volunteer School Coordinator) which reports to VTC. Each VTC has almost 25 VSCs reporting to him/her. All VSCs & VTCs are hired by Opel except for 3 talukas – Kanakapura & Devanhalli, where VSCs & VTCs are appointed by Edutel.

#### 1. Organizational Structure

**Organization Chart<sup>1</sup>**



#### 2. Roles & Responsibilities

Name	Role	Responsibilities
Ranganath	Project Manager	<ul style="list-style-type: none"> <li>Overall Project Management</li> <li>Resolve Escalations from VTC, MIS Lead and status reporting</li> <li>Risk / Crisis Management</li> </ul>
Lokesh / Vali / Basavaraju	Regional Coordinator / Head	<ul style="list-style-type: none"> <li>Coordinating with Gumbi, VTC, VSC and MIS team on problem resolution</li> <li>Selecting and training the new candidates</li> <li>Collect the Class Run Report on Daily basis &amp; update to the Mis Team</li> </ul>

<sup>1</sup> As provided by Opel



Taluk Coordinators	VTC	<ul style="list-style-type: none"> <li>• Responsible for all Taluk level activities as detailed in the document.</li> <li>• Coordinating with NO &amp; VSC and MIS team on problem resolution</li> <li>• Selecting and training the new candidates</li> <li>• Collect the Class Run Report on Daily basis &amp; update to the RC's.</li> </ul>
Volunteer School Coordinators	VSC	<ul style="list-style-type: none"> <li>• Responsible for all School level activities as detailed in the document.</li> </ul>
Basavaraju / Umashankar	MIS Team Lead / Training	<ul style="list-style-type: none"> <li>• Responsible for all HO level MIS activities</li> </ul>
Ragavendra	Management	<ul style="list-style-type: none"> <li>• Review project activities with PM, MIS Lead, Regional Heads</li> <li>• Resolve Customer Escalations</li> </ul>

- [Daily Activities](#)

**VSC - Daily Activities:**

Following activities are performed by the VSC at the school on a daily basis.

- The VSC inform the VTC on reporting by sending the SMS as per the below format / call to VTC and confirm the attendance.
- The VSC checks the cabinet for availability of all equipment and components.
- The VSC sets up the unit and checks for working condition
- The VSC will be available at the school during the telecast.
- Once the telecast is over, the VSC unplugs the equipment and put it into the cabinet.

**VTC - Daily Activities:**

Following activities are performed by the VTC at the school on a daily basis.

- The VTC tracks and monitors whether all VSC have communicated and confirmed their presence for the day.
- If any VSC has not communicated, the VTC coordinates with VSC and gets a confirmation on VSC's presence at the school, to which he / she is assigned.
- If any VSC is absent, the VTC informs the buffer resource school authorities for the day.
- On completion of the telecast the VTC again tracks and monitors whether all VSCs have communicated and confirmed about completing the activities for the day.
- The VTC updates the "Daily Attendance" and share the same to Regional head and MIS team.
- In case of any escalations from VSCs, the VTC coordinates with the respective Nodal Officer and ensures that problem is attended and resolved.
- In case the problem persists he / she escalates the problem to Regional head and

MIS Lead.

#### Monthly Activities

- The VTC sends the consolidated “Daily Attendance Register” for the month having attendance details of all VSC of the taluk.
- The report has to be sent to the MIS team on 1<sup>st</sup> of every month.
- On receiving the Consolidated “Attendance sheet” containing details of all taluks, he / she verify the details relating to his / her taluk and inform the MIS team. In case on any mistakes the VTC inform the MIS team to update the “Attendance sheet”.

#### 1. VSC Recruitment

The VTC get identified the at list candidates and selection only one person (VSC) each school based on flowing criteria

- Minimum 10th class pass out
- Minimal knowledge of Computer operating.
- HE / SHE Within 5 km distance between school & home.
- HE / SHE shall give the reference for one of the GOVT Employee.

## • Challenges

SAME project faces many challenges in its implementation. We have considered mainly organizational level problem, especially keeping in mind issues related to management structure and scalability. Although we observed few technology gaps in the implementation, they are not included in the report as it is beyond the scope of this study. Still, we would like to mention that improvement in technology can help reduce lot of challenges faced and it can even solve problems with organizational efficiency.

One of the main objective of the SAME project is to ensure if classes has happened on the ground i.e. to check if VSC was present, all systems were running, students attended the class etc. This requires monitoring system (which is currently there but not very efficient) and regular feedbacks. Current feedback system run something like this-

1. Once class gets started, VSC updates the unique session code<sup>2</sup> in the app, which then sends SMS to head office with session code
2. If this SMS reaches to the office & session code is verified with the school, OMS automatically gets updated
3. If SMS is not reached (which is the case for many VSCs), VTC has to call VSCs manually & ensure if class is running. They also have to update the reason why SMS was not sent.

In the current feedback system, there are many loopholes and lot of incidences have been observed where VSCs are absent or they are sending SMS from home by taking session code from teachers etc. There are many such issues which have been seen daily. In reality, VSCs have less incentive to complete their work because they are getting paid very less. Also, even Taluka In-charge are getting fairly low payment, this might tempt them to take shortcuts & not update the system regularly.

As both VSCs & VTCs are hired locally, there is probability that these personnel might have connections with politicians or other influential people in community. During our interview with Opel manager – Ranganath, he mentioned that there have been many cases where local politicians, teacher, head masters etc. asks Opel to hire VSC who is in good connection with them. In few cases, Opel have been asked to replace existing VSCs with the people who are connected to local politicians.

During our field visit, we talked with teachers and asked them about this program. The teacher whom we met, was not very positive about the program. She told us that this acts as additional resource to students but does not help them much. In her opinion, students learn only in the real classroom when teacher is actually teaching them. But, from our

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<sup>2</sup> Session code is unique for each school & each class, this code can be verified by head office

observations, we think that such kind of virtual classrooms do help students to understand better as content is animated & easier to comprehend. Moreover, it helps them imagine the concepts they are learning. Our belief was strengthened when we interacted with content development team of Edutel. So, why was teacher skeptical? May be she is right or maybe she is afraid that her job might be taken away in future if virtual classroom replaces traditional classrooms. Whatever the case may be, the problem here is that teachers need to be optimistic about such new projects & actively be involved in ensuring its success.

Also, if students have doubt at the end of the session, they can call to a number using VSC's phone and ask the doubts. These doubts are solved by Moderators but currently, there are only 43 moderators out of which 8 are dedicated moderators who operate from central office and other 35 are the Taluka In-charge themselves which take up dual responsibility.

Other big problem which was regularly mentioned in the discussions was about government official's motive for this project. There have similar educational initiatives taken before SAME project but in long term, very few have been successful. One of the reasons behind failures of such projects is the intention of Government Officials who are driving those projects. Though the interviews, we found out that most of the government officials start initiatives like SAME but are not much interested to pursue for long time, they might have some other financial motives which can discourage the successful implementation. How can we ensure that SAME project is least affected by such practices and a novel initiatives like this sustain in long run?

#### 4. Recommendations

After analyzing the problems, we suggested few solutions to the managers of all companies to get their opinion on the feasibility of the suggestions. Based on their feedback and with inputs from Prof. Gopal Naik & Prof. Vasanthi Shrinivasan, we have come up with few recommendations -

##### 1. Increase in number of Moderators

Currently, only 43 moderators are handling the doubts of students from 1000+ schools and that too only within span of 10 mins. Thus, the number of moderators should be increased so that all doubts can be clarified. One possibility could be that good teachers from these rural schools can be promoted as moderators. As per our observation, few students ask doubts after the session. Students should be motivated to ask doubts either by the teacher or by the VSC.

##### 2. Teacher Training Program

In long run, it is important that schools take up this project on their own. For this to happen, teachers should know how to operate the system, so that they can handle the work which is

done by VSC now. Teachers can be trained to take up this small extra responsibility and some added incentives could be given. In some schools, teachers already know it through informal training given by VSC but that has to be standardized.

If started early, this can also help whenever VSC is absent. In current scenario, if VSC is absent (which is often in some schools), the class does not happen. It is a huge loss for students as all the classes in that day get hampered. Thus, training teachers to take some additional responsibility can be good investment for long run.

### 3. Feedback from Parents & Students

Currently, feedback of VSC's work is taken from the school teaches & headmasters. As VSC works with teachers and headmasters closely, it is difficult for them to give critical feedback about VSC unless VSC is not coming at all. Probability is high that there can be a mutual understanding between VSCs and teachers, so that nobody complains. In such a case, finding out if VSC is regular and doing his/her job is almost impossible. Given that VSC and teachers are from same community, chances of mutual co-operation are high. Thus, feedback of VSCs should be taken from parents on regular basis by inviting them to schools for meetings. As parents are usually most worried about their child's performance, feedback from parents will be much more effective than feedback from teachers or headmasters.

Also, students can give feedback of VSC if the classes are not happening regularly or VSC is not supportive etc. One more way to check if classes has been conducted in school is that to conduct a small test after each session. This will also feedback if students are understanding the concepts and if there are any improvements to be done in the content.

### 4. Standardize Procedures with posters

We recommend that the tasks done by VSCs & VTCs should be standardized and these procedures should be clearly written step by step. Laminated posters of these procedures should be kept in each school & taluka location. These posters can be made with images of tasks and in local language i.e. Kannada, so that it is easier to understand. This will help teachers to follow the procedure in absence of VSCs.

### 5. Quality Inspection for Employees

Although recruitment of VSCs, VTCs & Tis is taken care by private company – Opel, there has to be regular quality inspection for all of them. As these employees handle most crucial part of the project i.e. execution on field, it is necessary to get motivated & good performing employees. Quality inspection for employees can be done by two methods. First one is by surprise visits to the locations and checking their skills while ensuring that they are right fit for the job. Second method is by conducting regular tests where they would be checked

with their technical skills and also, with their dedication towards the work and education, in general.

## 6. Skill development & Motivation

Skill development is essential for all employees and especially, TIs. As Taluka Incharge handles multiple responsibilities from monitoring of OMS to handling VSCs & solving doubts, it is important that they should have management skills along with regular technical skills. Communication training will also play vital role in their overall development. Currently, TIs need to have only B.Ed. degree which might not be sufficient for this role.

For long term sustainability of project, employees need to be passionate towards this noble cause of education. Regular motivational sessions can be conducted by leaders, professional speakers and other influential people.

## 7. Change in Organization Model - Project based to Program based transition

Currently SAME has project based structure i.e. each stakeholder owns a responsibility of the task but no one has responsibility if the project is not successful. IIM Bangalore is trying to take up that role as of now. But in long term, this project based model needs to be changed into program based model where one organization will take the responsibility of entire project.

We propose this organization can be a private organization. A team of 4-5 individuals who will take responsibility of long term implementation & success of SAME as a program. They will decide targets for private companies and will charge them financially if targets are not met. This team will ensure the smooth conduct of entire program and their only job will be to collect lots of data from schools and monitor them. This data can be analyzed to see if there has been any inefficiencies or manipulation at ground level.

## 8. Data Driven Project with digital monitoring

Currently, there are systems in place to track lot of data about class running status, number of students etc. but there are no algorithms to check the validity of this data. In future, all this data should be analyzed to identify any patterns which will eventually notify if there is any manipulation going on in the field. Using digital cameras, additional monitoring systems can be provided which takes the regular photos of the class and sends to the server. This will help in tracking how many students actually attended the class rather than just simply tracking if class has been taken place or not.

## 2. References

- ‘Can ICT Help Deliver Quality Education in Rural India?’, CPP Conference Presentation by Gopal Naik & K P Basavaraj
- Interviews & discussions with VSCs, VTCs, Nodal officers and managers of Edutel, Gumbi & Opel

- Internal Documents given by Edutel, Gumbi & Opel